

## MXP Series | TPS Input / Output Boards



## DVI-MXP-TPS-IB, -A-IB, -D-IB

new!



TPS Input Boards - Support HDMI, Ethernet, Audio and Control

### FEATURES

- HDMI / DVI extension over one CAT-X twisted pair cable up to 590 ft. (180 meters)
- Utilizes HDBaseT™ technology - supports HDMI / DVI + Ethernet + RS-232
- HDMI 1.4, DVI and HDCP compliant
- Supports all HDMI resolutions, including 4K (UHD), as well as all 3D formats
- Supports 10/100 BaseT Ethernet transmission
- Supports all HDMI audio formats
- Three types of TPS input boards are available:
 

DVI-MXP-TPS-IB	without audio break-out
DVI-MXP-TPS-A-IB	with adjustable analog stereo audio break-out
DVI-MXP-TPS-D-IB	with S/PDIF digital audio break-out



DVI-MXP-TPS-IB

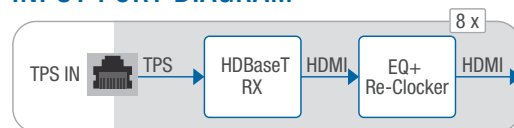


DVI-MXP-TPS-A-IB



DVI-MXP-TPS-D-IB

### INPUT PORT DIAGRAM

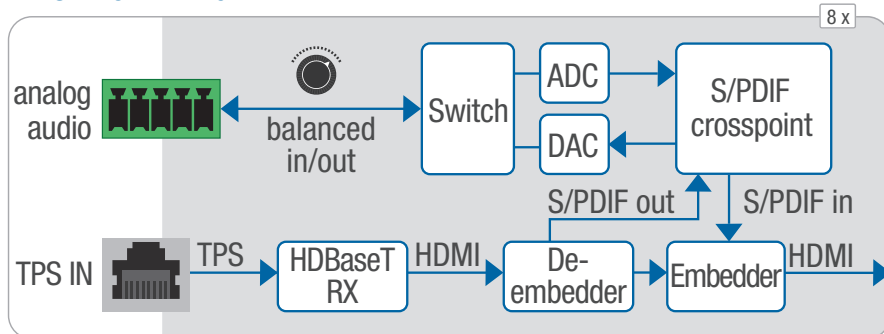


DVI-MXP-TPS-IB is an 8-channel twisted pair input board that utilizes HDBaseT™ technology to receive HDMI / DVI, audio, Ethernet and RS-232 signals over a single CAT-X cable at distances up to 328 ft. (100 meters). Using a software-selectable long-reach mode, this distance can be extended to 590 ft. (180 meters). These input boards support all HDMI 1.4 signal formats and resolutions, including 48-bit deep color, 4K (UHD) and all 3D signal formats. The DVI-MXP-TPS-IB supports all HDMI audio formats, including Dolby TrueHD and DTS-HD audio, and features PCM audio sample rate conversion. This input board is available with optional audio break-out connectors (S/PDIF digital audio or analog stereo audio) for advanced audio functions on a per port basis, such as audio switching and embedding and de-embedding. These input boards support bidirectional RS-232 and Ethernet communication and have a dedicated 10/100 BaseT uplink port for connection to an Ethernet network. These boards also provide a connection for an external power supply unit that enables remote powering of upstream TPS 95 Series transmitters. Advanced professional functions, such as HDCP enable/disable, Pixel Accurate Re-Clocking, Advanced EDID Management, Signal Analyzer and built-in Frame Detection, are integrated into the design, thus providing the highest level of versatility and ease of use.

### TPS INPUT with ANALOG AUDIO:

- Includes a configurable, bidirectional analog stereo audio port on a 5-pin Phoenix connector.
- Stereo PCM audio up to 96 kHz can be de-embedded from the HDMI signals.
- Digitized audio (PCM 48 kHz) from the analog audio input can be re-embedded (replaced) into the HDMI signal.
- Volume, gain, balance, bass and treble control.
- Phase invert, DC filter and de-emphasis option.

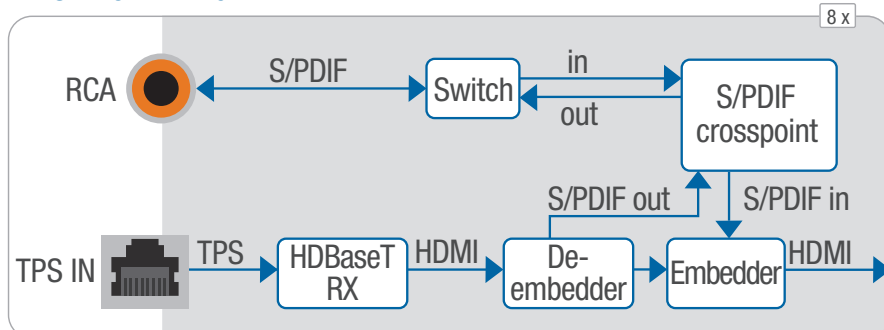
### INPUT PORT DIAGRAM



### TPS INPUT with DIGITAL AUDIO:

- S/PDIF digital audio break-out for every port.
- Configurable, bidirectional S/PDIF connectors.
- Digital audio can be de-embedded from the HDMI input signal, or an external audio can be re-embedded (replaced) into the HDMI signal.

### INPUT PORT DIAGRAM





## DVI-MXP-TPS-OB, -A-OB, -D-OB

**new!**



**TPS Output Boards - Support HDMI, Ethernet, Audio and Control**

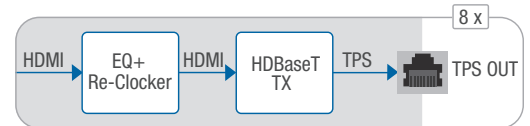
### FEATURES

- HDMI / DVI extension over one CAT-X twisted pair cable up to 590 ft. (180 meters)
- Utilizes HDBaseT™ technology - supports HDMI / DVI + Ethernet + RS-232
- HDMI 1.4, DVI and HDCP compliant
- Supports all HDMI resolutions, including 4K (UHD), as well as all 3D formats
- Supports 10/100 BaseT Ethernet transmission
- Supports all HDMI audio formats
- Three types of TPS output boards are available:
 

DVI-MXP-TPS-OB	without audio break-out
DVI-MXP-TPS-A-OB	with adjustable analog stereo audio break-out
DVI-MXP-TPS-D-OB	with S/PDIF digital audio break-out



### OUTPUT PORT DIAGRAM

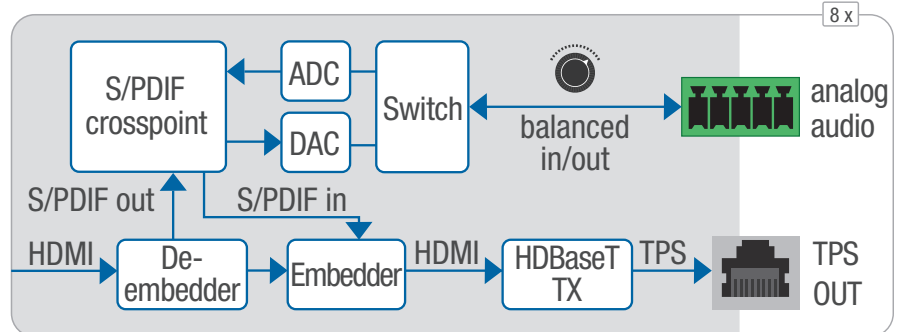


DVI-MXP-TPS-OB is an 8-channel twisted pair output board that utilizes HDBaseT™ technology to transmit HDMI / DVI, audio, Ethernet and RS-232 signals over a single CAT-X cable at distances up to 328 ft. (100 meters). Using a software-selectable long-reach mode, this distance can be extended to 590 ft. (180 meters). These output boards support all HDMI 1.4 signal formats and resolutions, including 48-bit deep color, 4K (UHD) and all 3D signal formats. The DVI-MXP-TPS-OB supports all HDMI audio formats, including Dolby TrueHD and DTS-HD audio, and features PCM audio sample rate conversion. This output board is available with optional audio break-out connectors (S/PDIF digital audio or analog stereo audio) for advanced audio functions on a per port basis, such as audio switching and embedding and de-embedding. These output boards support bidirectional RS-232 and Ethernet communication and have a dedicated 10/100 BaseT uplink port for connection to an Ethernet network. These boards also provide a connection for an external power supply unit that enables remote powering of downstream TPS 95 Series receivers. Advanced professional functions, such as HDCP enable/disable, Pixel Accurate Re-Clocking, Advanced EDID Management, Signal Analyzer and built-in Frame Detection, are integrated into the design, thus providing the highest level of flexibility and ease of use.

### TPS OUTPUT with ANALOG AUDIO:

- Includes a configurable, bidirectional analog stereo audio port on a 5-pin Phoenix connector.
- Stereo PCM audio up to 96 kHz can be de-embedded from the HDMI signals.
- Digitized audio (PCM 48 kHz) from the analog audio input can be re-embedded (replaced) into the HDMI signal.
- Volume, gain, balance, bass and treble control.
- Phase invert, DC filter and de-emphasis option.

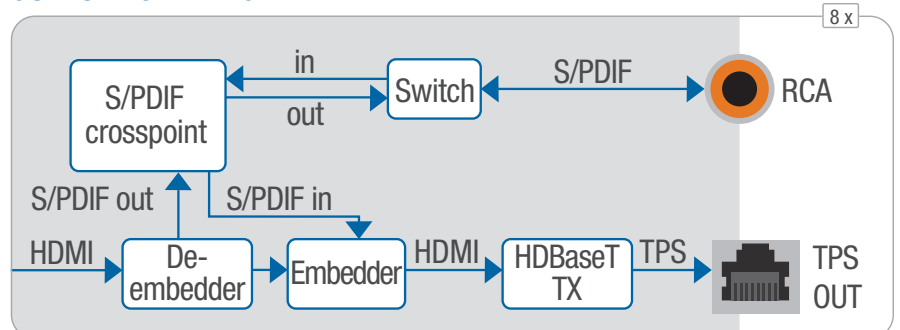
### OUTPUT PORT DIAGRAM



### TPS OUTPUT with DIGITAL AUDIO:

- S/PDIF digital audio break-out for every port.
- Configurable, bidirectional S/PDIF connectors.
- Digital audio can be de-embedded from the HDMI output signal, or an external audio can be re-embedded (replaced) into the HDMI signal.

### OUTPUT PORT DIAGRAM



## ANALOG AUDIO INPUT OPTIONS

Volume:	-63 to 0 dB
Gain:	0 to 24 dB
Balance:	0 to 100%
Phase Invert:	On / Off

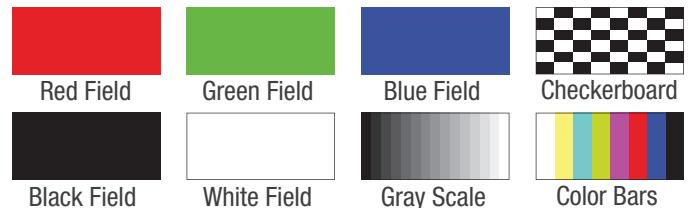
## ANALOG AUDIO OUTPUT OPTIONS

Volume:	-78 to 0 dB
Bass:	0 to 24 dB
Treble:	0 to 6 dB
Balance:	0 to 100%
Phase Invert:	On / Off
De-emphasis:	On / Off

## BUILT-IN TEST PATTERN GENERATOR

All TPS Input and Output boards include a built-in test pattern generator for each I/O port, which is useful for testing and troubleshooting signal links to and from the router.

- Video formats: 480p, 576p, 720p, 1080p /8-bit, 1080p /12-bit
- Full-field test patterns for Red, Green, Blue, Black and White
- Other test patterns: Checkerboard, Gray Scale and Color Bars



## MAXIMUM CABLE LENGTHS

Resolution	Pixel Clock Rate	CAT-5e	CAT-5e <sup>(1)</sup>	CAT-6a	CAT-6a <sup>(1)</sup>
1024x768 @ 60Hz	65 MHz	328.1 ft. (100 m)	524.9 ft. (160 m)	393.7 ft. (120 m)	590.6 ft. (180 m)
1280x720p @ 60Hz	73.84 MHz	328.1 ft. (100 m)	524.9 ft. (160 m)	393.7 ft. (120 m)	590.6 ft. (180 m)
1920x1080i @ 60Hz	74.25 MHz	328.1 ft. (100 m)	524.9 ft. (160 m)	393.7 ft. (120 m)	590.6 ft. (180 m)
1280x1024 @ 60Hz	108 MHz	328.1 ft. (100 m)	524.9 ft. (160 m)	393.7 ft. (120 m)	590.6 ft. (180 m)
1920x1080p @ 60Hz	148.5 MHz	328.1 ft. (100 m)	492.1 ft. (150 m)	393.7 ft. (120 m)	557.7 ft. (170 m)
1920x1200 @ 60Hz	152.9 MHz	328.1 ft. (100 m)	N/A	393.7 ft. (120 m)	N/A
1600x1200 @ 60Hz	162 MHz	328.1 ft. (100 m)	N/A	393.7 ft. (120 m)	N/A
2560x1600 @ 60Hz	268.3 MHz	229.7 ft. (70 m)	N/A	262.5 ft. (80 m)	N/A
1920x1080 @ 120Hz	297 MHz	229.7 ft. (70 m)	N/A	262.5 ft. (80 m)	N/A
3840x2160 @ 24, 30Hz	297 MHz	229.7 ft. (70 m)	N/A	262.5 ft. (80 m)	N/A
4096x2160 @ 24, 30Hz	297 MHz	229.7 ft. (70 m)	N/A	262.5 ft. (80 m)	N/A

**Note 1:** In long reach mode. Long reach mode supports pixel clock frequencies up to 148.5 MHz

## INPUT BOARD SPECIFICATIONS

HDCP Support:	Yes
Maximum Resolution:	4096 x 2160 @ 24, 30Hz
3D Signal Support:	Frame packing, side-by-side, top-bottom formats
Power Consumption (3.3 VDC):	2.9 A (typical) / 6.7 A (max.) (TPS, TPS-D) 3.3 A (typical) / 7.1 A (max.) (TPS-A)
Power Consumption (5 VDC):	5.0 A (typical) / 6.9 A (max.) (TPS, TPS-D) 5.0 A (typical) / 6.9 A (max.) (TPS-A)
Calculated AC Power:	35.0 watts (typical) / 51.6 watts (max.) (TPS, TPS-D) 36.0 watts (typical) / 53.0 watts (max.) (TPS-A)
Heat Dissipation:	119.4 BTU (typical) / 176.0 BTU (max.) (TPS, TPS-D) 122.8 BTU (typical) / 180.8 BTU (max.) (TPS-A)
Weight:	1.9 lbs. / 875 grams (TPS) 2.2 lbs. / 980 grams (TPS-D) 2.1 lbs. / 945 grams (TPS-A)
Input Connectors:	Shielded RJ45 connectors (TPS) Shielded RJ45 connectors, S/PDIF (TPS-D) Shielded RJ45 connectors, 5-pin Phoenix (TPS-A)

## OUTPUT BOARD SPECIFICATIONS

HDCP Support:	Yes
Maximum Resolution:	4096 x 2160 @ 24, 30Hz
3D Signal Support:	Frame packing, side-by-side, top-bottom formats
Power Consumption (3.3 VDC):	3.4 A (typical) / 7.8 A (max.) (TPS, TPS-D) 3.8 A (typical) / 8.2 A (max.) (TPS-A)
Power Consumption (5 VDC):	2.2 A (typical) / 3.1 A (max.) (TPS, TPS-D) 2.2 A (typical) / 3.1 A (max.) (TPS-A)
Calculated AC Power:	22.0 watts (typical) / 41.0 watts (max.) (TPS, TPS-D) 23.5 watts (typical) / 42.5 watts (max.) (TPS-A)
Heat Dissipation:	75 BTU (typical) / 139.9 BTU (max.) (TPS, TPS-D) 80.2 BTU (typical) / 145 BTU (max.) (TPS-A)
Weight:	1.9 lbs. / 855 grams (TPS) 2.0 lbs. / 925 grams (TPS-D) 2.0 lbs. / 920 grams (TPS-A)
Output Connectors:	Shielded RJ45 connectors (TPS) Shielded RJ45 connectors, S/PDIF (TPS-D) Shielded RJ45 connectors, 5-pin Phoenix (TPS-A)

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DVI-MXP-TPS-IB\_DVI-MXP-TPS-OB-DS-01 / January 2014