DVI 201 Tx/Rx

SINGLE LINK DVI/HDMI EXTENDER

- **Transmits DVI/HDMI over CAT 5/5e/6**
- **Accommodates HDTV and computer-video up to UXGA (1600 x 1200)**
- **Local monitor output**
- **Supports DDC & HDCP signals**
- **Two-way remote powering**
- **RS-232 pass-through**

DVI 201 Tx

DVI 201 Rx

The Extron DVI 201 Tx/Rx sends Single Link DVI or HDMI™ signals over distances of 200 feet or more using two standard CAT 5/5e/6 cables. The DVI 201 Tx/Rx is ideal for professional and residential applications that utilize fully digital, long distance transmission of HDTV or high resolution computer-video signals.

DESCRIPTION

The Extron **DVI 201 Tx/Rx** is a transmitter and receiver set that enables DVI (Digital Visual Interface) or HDMI™ (High Definition Multimedia Interface) signals to be carried over distances significantly greater than the specified 5 meter (15 foot) distance limitation for standard DVI cables. Linked together using two economical and integration friendly CAT 5, CAT 5e, or CAT 6 cables, the DVI 201 Tx and DVI 201 Rx work together to send Single Link DVI-D or HDMI signals over 200 feet (60 meters) for HDTV and XGA (1024 x 768).

The DVI 201 Tx/Rx supports the long distance transmission of HDTV signals with HDCP (High-bandwidth Digital Content Protection) for copy protection of future digital television broadcasts, as well as the high resolution digital video output from current and forthcoming DVD players. With the appropriate adapters from Extron, this DVI-D transmitter/receiver set is fully compatible with HDMI, a new digital video, audio, and control standard for consumer A/V products.

Several features facilitate convenient, streamlined system integration. The DVI 201 Tx transmitter includes a DVI loop-through to support monitoring on a local display device. RS-232 signals can be transmitted over the same cabling as the DVI signals for remote monitor or projector control. Furthermore, either the transmitter or receiver can be remotely powered over this cabling, so that external power is necessary for only one of the devices. The DVI 201 Tx and DVI 201 Rx receiver are housed in 1" high, quarter rack width metal enclosures.

FEATURES

- **Transmits Single Link DVI-D or HDMI™ signals over two CAT 5/5e/6 cables** – Standard UTP cables provide an economical, easily installed cable solution.
- **Long distance transmission** – Accommodates HDTV and XGA over 200 feet (60 meters), UXGA (1600 x 1200) over 100 feet (30 meters).
- **Local monitor output** – The DVI 201 Tx transmitter features a DVI-D output for connection to a local monitor.
- **Supports DDC and HDCP copy protection transmission** – The DVI 201 Tx/Rx fully supports long distance transmission of the DDC and HDCP signals.
- **DDC routing to local or remote display** – At the DVI 201 Tx, the DDC or HDCP signal is directed to either the local display or the remote display, depending on which is more critical in receiving the signal.
- **Remote powering of transmitter or receiver** – Only one power supply is necessary to power both devices.
- **RS-232 pass-through** – Bi-directional RS-232 control signals can be transmitted alongside the DVI or HDMI signal, so that the remote display can be controlled without the need for additional cabling.
- **Fully supports HDMI signals when used with optional Extron HDMI-DVI adapters** – Supports CEC (Consumer Electronics Control) signal transmission.
- **1" high, quarter rack width metal enclosures** – With low profile enclosures, both devices can be discreetly installed, such as behind a plasma or LCD flat-panel display.
- **External international power supply included (part # 70-055-01)**

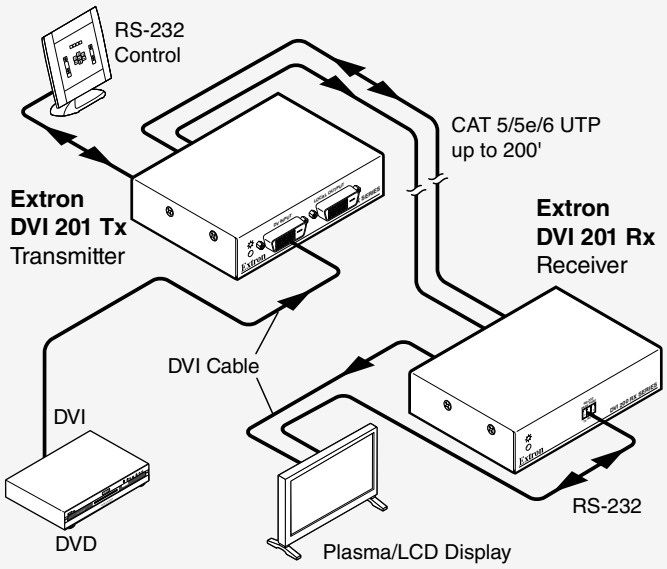
Key terminology for DVI/HDMI technology

DDC – Display Data Channel. A bi-directional communications standard developed by VESA (Video Electronics Standards Association) that defines a universal data transmission standard for the connectivity between display devices and computers.

DVI-D – Part of the DVI (Digital Visual Interface) digital video standard developed by DDWG (Digital Display Work Group), this connector has 24 pins that handles digital video signals only, along with DDC and clock information. The DVI-I connector accommodates both analog and digital video signals.

EDID – Extended Display Identification Data. A communications protocol developed by VESA (Video Electronics Standards Association) for the identification of display devices to computers using the DDC transmission standard.

HDMI – High Definition Multimedia Interface. A specification developed by the HDMI Working Group that combines video, multi-channel audio and control signals (CEC) into a single digital interface for use with DVD players, digital television, and other audiovisual devices. The digital video portion of HDMI is fully backward-compatible with DVI.



HDCP – High-bandwidth Digital Content Protection. An encryption method developed by Intel that protects copyrighted digital entertainment material that uses DVI or HDMI. The transmission between the video source (computer, DVD player, HD set-top box, etc.) and the digital display (LCD, plasma, projector, etc.) is encrypted.

Single Link – A DVI Single Link consists of one differential clock channel and three differential data channels with a pixel clock rate of up to 165 MHz. In general, a Single Link system can support high resolution computer signals up to 1600 x 1200 @ 60 Hz. HDTV rates, including 1080p, can also be transmitted. Dual Link systems, with an additional three data channels, has a pixel clock rate of up to 350 MHz and can support resolutions up to 2040 x 1536.

TMDS – Transition Minimized Differential Signaling. An all-digital video transmission standard developed by Silicon Image, Inc. TMDS is the transport mechanism used for high speed, digital data transfer of information in both DVI and HDMI standards.

VIDEO INPUT AND LOOP-THROUGH (DVI 201 TX)

Number/signal type	1 DVI-D/HDMI* input, 1600x1200 @ 60 Hz max. resolution 1 DVI-D/HDMI* local loop-through
Connectors	2 DVI-D female

VIDEO OUTPUT (DVI 201 RX)

Number/signal type	1 DVI-D/HDMI*, 1600x1200 @ 60 Hz max. resolution
Connectors	1 DVI-D female

INTERCONNECTION BETWEEN TRANSMITTER AND RECEIVER

Connectors	(2) RJ-45 per unit for 2 CAT5/5e/6 cables connecting the transmitter and receiver
Bit rate	5 gigabits/second total (1.65 gigabits/second/color)
Signal transmission distance	100' (30 m) with a 1600x1200 @ 60 Hz signal (the highest resolution of the single DVI standard) 200' (60 m) with an HDTV signal or a 1024x768 @ 60 Hz signal

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

SIGNAL TYPES AND STANDARDS

Digital video	RGB digital video (DVI and HDMI* standards), actively buffered YCrCb digital component video (HDMI standard), actively buffered (All single link DVI and HDMI* signal formats are supported including 640x480 @ 60 Hz through 1600x1200 @ 60 Hz computer video, and also 480p, 720p, 1080i, and 1080p HDTV signals)
HDCP	HDCP (High-bandwidth Digital Content Protection) using the DVI and HDMI standards (for video, actively buffered, transmitted through DDC lines)
Digital audio	HDMI* audio, actively buffered (transmitted through RGB and YCrCb lines)
RS-232	RS-232 serial data (pass-through)
CEC	Consumer Electronics Control (CEC) wired infrared data using the HDMI standard (pass-through)

NOTE: *An optional Extron HDMI to DVI adapter is required in order to transmit a CEC signal.

EDID (DDC)	EDID (Extended Display Identification Data) and DDC (display data channel) using DVI and HDMI* standards (actively buffered)
HPD	HPD (Hot Plug Detection of display, pass-through)

GENERAL

External power supply	100 VAC to 240 VAC, 50/60 Hz, external, autoswitchable; to 12 VDC, 1 A, regulated
Power input requirements	12 VDC, 0.4 A for both transmitter and receiver

NOTE: Each transmitter or receiver can be powered either locally by an external power supply or remotely by receiver or transmitter on the other end of the CAT5/5e/6 cables.

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
Rack mount	Yes, with optional 1U rack shelf, part #60-190-01 or 60-604-01; 1U 6" deep rack shelf, part #60-190-10, 60-604-10; or VersaTools® rack shelf, part #60-190-20 or 60-604-20. Also furniture mountable with optional Through-Desk Mounting Kit, #70-077-02, or attachable to a projector mount using optional kit #70-077-04.
Enclosure type	Metal
Enclosure dimensions	1.0" H x 4.3" W x 3.0" D (quarter rack wide) 2.5 cm H x 10.9 cm W x 7.6 cm D (Depth excludes connectors.)
Product weight	0.5 lbs (0.3 kg)
Shipping weight	3 lbs (2 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE: *An optional HDMI to DVI adapter is required if an HDMI signal is used.
NOTE: All nominal levels are at ±10%.

Model	Part Number
DVI 201 Tx/Rx	60-734-03

Optional Accessories

DVID SL Series

Single Link DVI-D Male to Male Patch Cables

DVI-D M-M 3' (90 cm)	26-585-01
DVI-D M-M 6' (1.8 m)	26-585-02
DVI-D M-M 15' (4.5 m)	26-585-03

HDMI M-DVI-D M Series

HDMI Male to DVI-D Male Cables

M-M, 3' (90 cm)	26-614-01
M-M, 6' (1.8 m)	26-614-02
M-M, 12' (3.6 m)	26-614-03
M-M, 25' (7.6 m)	26-614-04
M-M, 35' (10.6 m)	26-614-05
M-M, 50' (15.2 m)	26-614-06

HDMI to DVI-D Adapters

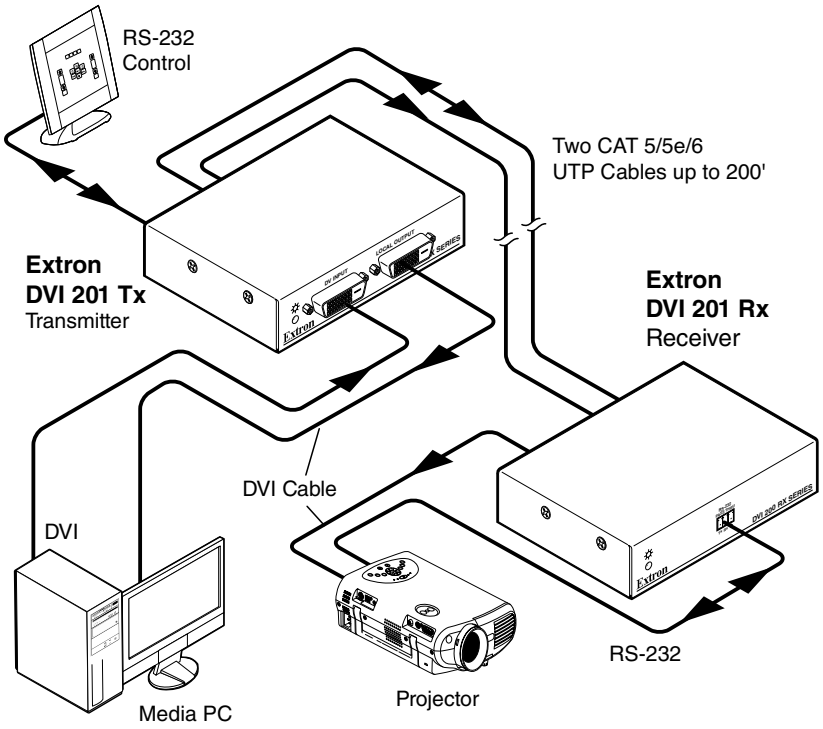
HDMI Female to DVI-D Female Adapter	26-618-01
HDMI Female to DVI-D Male Adapter	26-616-01
HDMI Male to DVI-D Female Adapter	26-617-01

HDMI M-M Series

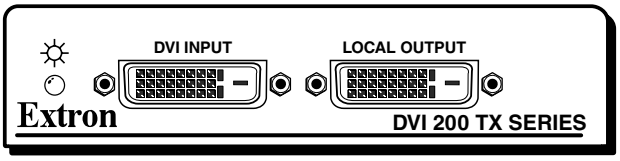
HDMI Male to Male Cables

M-M, 3' (90 cm)	26-613-01
M-M, 6' (1.8 m)	26-613-02
M-M, 12' (3.6 m)	26-613-03
M-M, 25' (7.6 m)	26-613-04
M-M, 35' (10.6 m)	26-613-05
M-M, 50' (15.2 m)	26-613-06

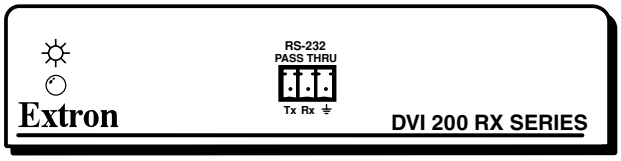
APPLICATION DIAGRAMS



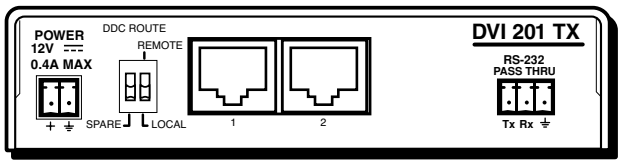
PANEL DRAWINGS



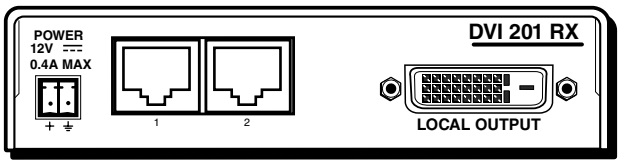
DVI 201 Tx (Front)



DVI 201 Rx (Front)



DVI 201 Tx (Back)



DVI 201 Rx (Back)

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