

HD Streaming Transmitter/Receiver

- > Versatile high-definition streaming media encoder/decoder
- > Compact, surface-mountable form factor fits in tight spaces
- > Provides a streaming transmitter or receiver for DigitalMedia™ systems
- > Enables HD AV signal distribution over IP with no distance limitations
- > Supports streaming at resolutions up to 1080p60 and bitrates up to 25 Mbps
- > Employs high-quality H.264 video and AAC audio encoding/decoding
- > Also supports MJPEG video decoding
- > Built-in scaler handles sources with resolutions up to Full HD 1080p60
- > Includes HDMI® input and output
- > Provides confidence monitoring via the HDMI output in transmitter mode
- > Allows text overlay for labeling or messaging
- > 10/100 Ethernet LAN port for streaming and control system integration
- > Enables device control via CEC, IR, and RS-232
- > Web-based setup
- > Powered via PoE or local power pack
- > 100-240V universal power pack included



The Crestron® DM-TXRX-100-STR is a compact H.264 streaming encoder/decoder designed to enable the distribution of high-definition AV signals over an IP network. Configurable as either a transmitter or receiver, it provides a perfect complement to a DigitalMedia™ switcher with one or more streaming inputs or outputs, and can also be used to add streaming capability to other switchers and devices. By transporting all video, audio, control, and power signals through a single PoE LAN connection, the DM-TXRX-100-STR delivers the perfect solution for those applications where new or dedicated wiring cannot be installed.

H.264 Streaming

High-performance H.264 streaming capability enables enterprise-wide distribution of HD content over a wired or wireless IP network. Streaming expands the capabilities of a DigitalMedia system to remove all distance limitations and facilitate distribution to virtually any device — anywhere in the world. Streaming also allows for the utilization of existing network infrastructure to overcome situations where the installation of new or dedicated wiring may not be feasible.

The DM-TXRX-100-STR supports streaming input or output at resolutions up to HD 1080p and bitrates up to 25 Mbps. High-quality AAC audio compression is employed to handle 2-channel stereo audio with full frequency response. The encoded video and audio can be transmitted or received as independent RTP streams or encapsulated in an MPEG-TS (MPEG-2 Transport Stream) container. HDCP management ensures that protected content cannot be distributed via streaming.

Streaming via the DM-TXRX-100-STR provides many deployment options to address a wide range of streaming applications and to accommodate each organization's specific IT requirements. Both unicast and multicast streaming is supported, with or without RTSP (Real Time Streaming Protocol). Streaming connections can be configured to stream directly to one or more specific IP addresses, or to use RTSP to manage the configuration of numerous connections automatically.

In addition to H.264, the DM-TXRX-100-STR can also receive and decode MJPEG streaming video.

HD Streaming Transmitter

As a streaming transmitter, the DM-TXRX-100-STR can be installed beneath a table, inside a lectern, or attached to a wall, allowing a laptop computer, camera, or other media source to be connected via HDMI® and streamed out over an Ethernet LAN, WAN, or Internet connection. The high-quality H.264 encoded signal can be routed to the streaming input of a DM® switcher or another DM-TXRX-100-STR, or it can be viewed on Crestron touch screens, digital signage displays, computers, mobile devices, and other compatible equipment. Password protection allows administrators to control who can view the streaming signal. Built-in scaling ensures trouble-free handling of sources with any resolution up to Full HD 1080p60, and allows for streaming at any resolution independent of the source resolution.

HD Streaming Receiver

As a streaming receiver, the DM-TXRX-100-STR decodes the streaming signal from a DM switcher, IP camera, or other streaming source and outputs it as HDMI to feed the input of a display device, AV receiver, or switcher. Its low-profile, surface-mountable design allows the DM-TXRX-100-STR to be mounted discreetly behind a flat-panel display, above a ceiling mounted projector, on an AV cart, or inside an equipment rack. Decoding of H.264 and MJPEG formats is supported.

DM-TXRX-100-STR HD Streaming Transmitter/Receiver



DM-TXRX-100-STR — Top, Front, and Bottom Views

Device Controller

The DM-TXRX-100-STR includes built-in RS-232 and IR control ports to allow for programmable control of the connected display, camera, and other devices. Additional control capability is afforded by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Via its Ethernet connection to the control system, the DM-TXRX-100-STR provides a gateway for controlling the display or source device right through its HDMI connection, potentially eliminating the need for any dedicated serial cables or IR emitters.

Confidence Monitor Output

In transmitter mode, the streaming output signal is also made available at the HDMI output, allowing the streaming output signal to be viewed locally on a video monitor.

Text Overlay

On-screen display of dynamic or fixed text allows for labeling of the video image, or the display of instructions, schedules, announcements, alerts, and other messaging.

Web-Based Setup

Built-in Web pages facilitate setup of the DM-TXRX-100-STR from a laptop, whether running standalone or connected to a DM switcher. Extensive setup, control, and monitoring of the device is also provided through integration with a Crestron control system.

Low-Profile Installation

The DM-TXRX-100-STR mounts conveniently to a wall, ceiling, or other flat surface. Its compact, surface-mountable form factor fits easily behind a flat panel display, above a ceiling-mounted projector, beneath a tabletop, or inside a lectern or other furniture. It can even be attached directly to a single rack rail in the back of an equipment cabinet. It can be powered using the wall mount power pack (included), or via PoE (Power over Ethernet) for a true one-wire solution. All connections and LED indicators are positioned on the top and bottom, ensuring optimal access and visibility for a clean, serviceable installation.

Please refer to the *DigitalMedia Resources Webpage* at <http://www.crestron.com/dmresources/> for additional design tools and reference documents.

SPECIFICATIONS

Streaming

Encode Video Formats: H.264 (MPEG-4 part 10 AVC)

Decode Video Formats: H.264, MJPEG

Audio Formats: AAC stereo

Bitrates: 96 to 25000 kbps

H.264 Profiles: Baseline Profile (BP), Main Profile (MP), High Profile (HiP)

Streaming Protocols: RTP, RTSP, SDP

Container: MPEG-2 transport stream (.ts) or none

Session Initiation Modes: By receiver (unicast), by transmitter (unicast), multicast via RTSP, multicast via UDP

Streaming Input Resolutions: Up to 1920x1080@60Hz (1080p60)

Streaming Output Resolutions: Auto (follows HDMI input), 176x144, 352x288, 528x384, 640x360, 640x480, 720x480, 800x480, 800x600, 1024x768, 1280x720, 1280x800, 1366x768, 1440x900, 1600x900, 1600x1200, 1680x1050, 1920x1080; at frame rates up to 60 Hz

Video

Input Signal Types: HDMI® (DVI & Dual-Mode DisplayPort compatible^[1])

Output Signal Types: HDMI (DVI compatible^[1])

Input Resolutions, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), plus any other resolution allowed by HDMI up to 148MHz pixel clock

Input Resolutions, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 148MHz pixel clock

Output Resolutions: Auto (follows streaming input), 640x480@60Hz, 800x600@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x800@60Hz^[2], 1366x768@60Hz^[2],

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1440x900@60Hz^[2], 1600x900@60Hz^[3], 1600x1200@60Hz,
1680x1050@60Hz^[2], 1920x1080@50Hz (1080p50), 1920x1080@60Hz
(1080p60), 1920x1200@60Hz^[3]

Audio

Input Signal Types: HDMI (Dual-Mode DisplayPort compatible^[1])

Output Signal Type: HDMI

Input/Output Format: 2-channel PCM

Output Volume Control: -80 to 0 dB

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, IEEE 802.3af and 802.3at Type 1 compliant

USB: computer console; also supports loading of firmware via a USB mass storage device

RS-232: 2-way device control and monitoring up to 115.2k baud with hardware and software handshaking; computer console

IR/Serial: 1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 Volts) up to 19.2k baud

HDMI: HDCP 1.2, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI devices and a control system

Connectors

CONSOLE, SERIAL: (1) 8-pin RJ45 female;
RS-232 computer console port

CONSOLE, USB: (1) USB Micro-AB female;
USB computer console port

IR 1 – 2: (1) 4-pin 3.5 mm detachable terminal block comprising
(2) IR/Serial ports;

IR output up to 1.1 MHz;

1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud

COM: (1) 5-pin 3.5 mm detachable terminal block;
Bidirectional RS-232 port;

Up to 115.2k baud, hardware and software handshaking support

HDMI INPUT: (1) 19-pin Type A HDMI female;
HDMI digital video/audio input;
(DVI and Dual-Mode DisplayPort compatible^[1])

HDMI OUTPUT: (1) 19-pin Type A HDMI female;
HDMI digital video/audio output;
(DVI compatible^[1])

SERVICE: (1) USB Type A female;
Supports USB mass storage devices for firmware update

LAN PoE: (1) 8-pin RJ45 female;
10Base-T/100Base-TX Ethernet port, Power over Ethernet compliant

24VDC 0.75A: (1) 2.1 x 5.5 mm DC power connector;
24 Volt DC power input;
PW-2407WU power pack included

Ground: (1) 6-32 screw, chassis ground lug

Controls & Indicators

PWR: (1) Green LED, indicates operating power supplied via PoE or local power pack, flashes while booting

RESET: (1) Recessed pushbutton for hardware reset

SETUP: (1) Red LED and (1) recessed pushbutton for Ethernet setup

MODE TX & RX: (2) Green LEDs, indicate the current mode of operation

ONLINE: (1) Green LED, indicates connection to a control system via Ethernet

HDMI IN & OUT: (2) Green LEDs, indicate HDMI signal presence at the HDMI input or output

LAN PoE: (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

Power Requirements

Power Pack: 0.75 Amps @ 24 Volts DC;

100-240 Volts AC, 50/60 Hz power pack, model PW-2407WU included

Power over Ethernet: IEEE 802.3at Type 1 (802.3af compatible) Class 0 (12.95 W) PoE Powered Device

Power Consumption: 7.6 Watts (typical)

Environmental

Temperature: 32° to 104° F (0° to 40° C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 26 BTU/hr

Enclosure

Chassis: Metal, black finish, with (2) integral mounting flanges, vented sides

Mounting: Freestanding, surface mount, or attach to a single rack rail

Dimensions

Height: 6.42 in (163 mm)

Width: 7.40 in (188 mm)

Depth: 1.35 in (35 mm)

Weight

19.6 oz (554 g)

MODELS & ACCESSORIES

Available Models

DM-TXRX-100-STR: HD Streaming Transmitter/Receiver

Included Accessories

PW-2407WU: Wall Mount Power Pack, 24VDC, 0.75A, 2.1mm,
Universal (Qty. 1 included)

DM-TXRX-100-STR HD Streaming Transmitter/Receiver

Available Accessories

- CBL Series: Crestron® Certified Interface Cables
- CNSP-XX: Custom Serial Interface Cable
- IRP2: IR Emitter Probe w/Terminal Block Connector

Notes:

1. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. [CBL-HD-DVI](#) interface cables are available separately.
2. With or without reduced blanking.
3. With reduced blanking only.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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