

## DigitalMedia™ SFP+ 4K Fiber Transmitter

- > Uncompressed 4K video signal extension over fiber optic cable
- > Configurable for multimode or single-mode fiber using SFP+ transceiver modules<sup>[2]</sup>
- > Seamless integration with DM® switchers to enable 4k fiber output capability
- > HDCP 2.2 compliant
- > Dolby® TrueHD, Dolby Atmos®, DTS-HD®, and uncompressed 7.1 linear PCM audio support
- > Two auto-switching HDMI® inputs
- > Balanced analog stereo audio input
- > Stereo analog-to-HDMI audio embedding
- > Local HDMI output
- > IR and RS-232 device control ports
- > CEC device control gateway
- > Gigabit Ethernet LAN port
- > Web browser setup
- > 100-240V universal power pack included
- > Compact, surface-mountable form factor
- > Requires a DMF or DMCF series receiver



The DMF-TX-4K-SFP is a fiber-based transmitter designed to function as part of a Crestron® 4K video signal extender solution. It is used with a companion receiver ([DMF-RMC-4K-SFP](#) or [DMCF-RX-4K-SFP](#)<sup>[1]</sup>) to support point-to-point signal extension, and may also be used to add 4K fiber input capability to a [DigitalMedia™ switcher](#) (see “DM® Switcher Integration” below for details). Its “DM OUT” port allows for the insertion of an appropriate SFP+ transceiver module to enable compatibility with multimode or single-mode fiber.<sup>[2]</sup> It also features two HDMI® inputs, one analog audio input, a local HDMI output, IR and RS-232 control ports, and a gigabit Ethernet LAN port. Its compact, low-profile design allows the DMF-TX-4K-SFP to be installed discreetly on a wall, beneath a table, or inside a lectern or credenza.

### 4K Ultra HD

The DMF-TX-4K-SFP enables uncompressed 4K/60 video signal extension over fiber optic cable. Support for 4K video ensures support for the latest generation of computers and monitors with native resolutions beyond 1080p and WUXGA. The DMF-TX-4K-SFP can handle uncompressed Full HD 1080p, Ultra HD, 2K, and 4K video signals with support for Deep Color and HDCP 2.2. Audio capabilities include support for high-bitrate 7.1 audio formats like Dolby® TrueHD, Dolby Atmos®, and DTS-HD Master Audio™ as well as uncompressed linear PCM.

### DM® Switcher Integration

The DMF-TX-4K-SFP can be used to add a single 4K fiber output to a [DM-MD series matrix switcher](#) by simply connecting its first HDMI input to any available HDMI output on the switcher. An Ethernet LAN connection is also required to enable communication with the associated [control system](#).<sup>[3]</sup>

### SFP+ Configurable DM Port

The “DM OUT” port on the DMF-TX-4K-SFP is configurable using SFP+ transceiver modules to enable compatibility with multimode or single-mode fiber types.<sup>[2]</sup> Each DMF-TX-4K-SFP is sold as a packaged kit containing the transmitter and one SFP+ module as follows:

- **DMF-TX-4K-SR PAK KIT** – Supports duplex multimode fiber at up to 1000 ft (300 m) using OM3, or 1300 ft (400 m) using OM4
- **DMF-TX-4K-BX PAK KIT** – Supports simplex single-mode fiber at up to 6.2 miles (10 km) using ITU-T G.652.D fiber, Crestron model [CRESFIBER8G-SM-P](#) or equivalent
- **DMF-TX-4K-S PAK KIT** – Supports legacy CresFiber® 8G Multimode fiber at up to 650 ft (200 m) (*Only for retrofit applications where Crestron [CRESFIBER8G-NP](#) or [CRESFIBER8G-P](#) is already installed; not for new installations!*)

### 2x1 HDMI® Auto-Switcher

The DMF-TX-4K-SFP includes two HDMI inputs for the connection of HD and 4K sources. Switching between the HDMI inputs can be performed automatically using auto-switching mode, manually using the onboard input select button, or programmatically via a [Crestron control system](#).

### Analog Audio Embedding

A balanced analog audio input is also included to allow a stereo audio source to be connected and combined with the video signal from either of the HDMI inputs. The analog audio input can be configured to be selected automatically if a digital audio signal is not detected on the active HDMI input.

# DMF-TX-4K-SFP DigitalMedia™ SFP+ 4K Fiber Transmitter

## Local HDMI Output

In addition to its DM output port, the DMF-TX-4K-SFP also includes an HDMI output to allow the selected video and audio input signals to be fed to a local display or monitor.

## Gigabit LAN Connectivity

The DMF-TX-4K-SFP includes a gigabit Ethernet port for integration with a Crestron control system via the local network. Ethernet is also transported over the fiber interface, eliminating the need for a separate LAN connection at the receiver, and allowing the receiver's LAN port to be used to provide LAN connectivity for the connected display device or some other device.<sup>[3]</sup>

## Device Controller

The DMF-TX-4K-SFP includes built-in RS-232 and IR control ports to allow for programmable control of the connected sources and other devices via the control system. 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 DMF-TX-4K-SFP provides a

gateway for controlling the sources right through their HDMI connections, potentially eliminating the need for any dedicated serial cables or IR emitters.

## Web Browser Setup

Simplified setup of the DMF-TX-4K-SFP and its companion receiver is facilitated using a web browser.

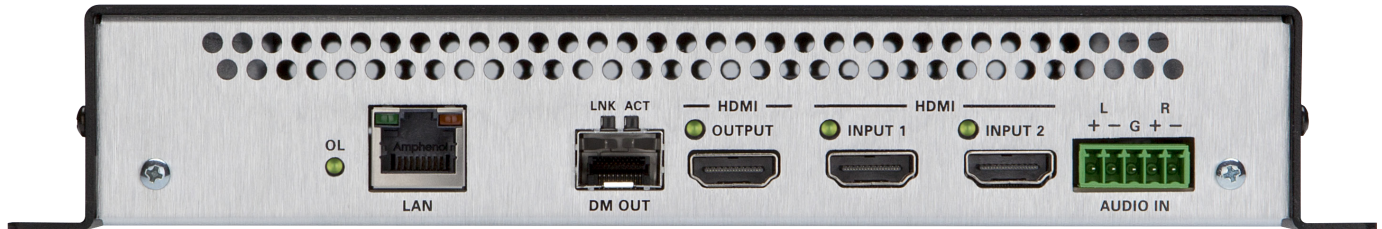
## Low-Profile Installation

The DMF-TX-4K-SFP mounts conveniently to a wall, ceiling, or other flat surface. Its compact, surface-mountable form factor fits easily behind furniture, underneath a table, or inside a lectern or credenza. It can even be attached directly to a single rack rail in the back of an equipment cabinet. Power is provided by an external 100-240V universal power pack.

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



Top View



Bottom View

## SPECIFICATIONS

### Fiber Types

Fiber Type	Connector Type	Maximum Cable Length	SFP+ Module <sup>[2]</sup>	Package Model
Multimode, duplex, 850 nm	Dual LC	1000 ft (300 m) using OM3 1300 ft (400 m) using OM4	SFP-10G-SR	DMF-TX-4K-SR PAK KIT
Single-mode, simplex, 1270/1330 nm	Single LC	6.2 miles (10 km)	SFP-10G-BX-U	DMF-TX-4K-BX PAK KIT
CresFiber 8G Multimode, simplex <i>(Only for retrofit applications where CresFiber 8G multimode fiber is already installed; not for new installations)</i>	Single SC <i>(via LC-to-SC patch cord and adapter, included)</i>	650 ft (200 m) using CRESFIBER8G-NP or CRESFIBER8G-P	SFP-10G-S-U	DMF-TX-4K-S PAK KIT

NOTE: The maximum cable length for single-mode fiber is measured using ITU-T G.652.D fiber optic cable, Crestron model CRESFIBER8G-SM-P or equivalent.

# DMF-TX-4K-SFP DigitalMedia™ SFP+ 4K Fiber Transmitter

## Video

**Input Signal Types:** HDMI w/Deep Color, 3D<sup>[4]</sup>, & 4K support (DVI & Dual-Mode DisplayPort compatible<sup>[5]</sup>)

**Output Signal Types:** DM SFP+ 4K Fiber w/Deep Color, 3D<sup>[4]</sup>, & 4K support (configurable for multimode or single-mode fiber<sup>[2]</sup>); HDMI w/Deep Color, 3D<sup>[4]</sup>, & 4K support (DVI compatible<sup>[5]</sup>)

**Switcher:** 2x1 auto-switching, Crestron QuickSwitch HD™ technology

### Maximum Resolutions:

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 4K DCI & 3840x2160 Ultra HD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
	60 Hz	4:2:0	24 bit	
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
1920x1080 HD 1080p	60 Hz	4:4:4	36 bit	
Interlaced	1920x1080 HD 1080i	30 Hz	4:4:4	36 bit

*NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz*

## Audio

**Input Signal Types:** HDMI, analog stereo

**Output Signal Types:** DM SFP+ 4K Fiber (configurable for multimode or single-mode fiber<sup>[2]</sup>), HDMI

**Digital Formats:** Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels

**Analog Formats:** Stereo 2-channel

**Switcher:** 2x1, digital audio-follow-video, analog audio-follow-video or breakaway

**Analog-To-Digital Conversion:** 24-bit 48 kHz

**Analog Performance:** Frequency Response: 20 Hz to 20 kHz ±0.5 dB;  
S/N Ratio: >95 dB 20 Hz to 20 kHz A-weighted;  
THD+N: <0.005% @ 1 kHz;  
Stereo Separation: >90 dB

**Analog Input Level Compensation:** ±10 dB

## Communications

**Ethernet:** 10/100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, IEEE 802.1X, IPv4 or IPv6, web browser setup and control, Crestron control system integration

**USB:** Computer console

**RS-232:** 2-way device control and monitoring up to 115.2k baud with hardware and software handshaking (via control system); 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 (via control system)

**DM:** DM SFP+ 4K Fiber, HDCP 2.2, EDID, CEC, Ethernet

**HDMI:** HDCP 2.2, EDID, CEC

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

## Connectors

**LAN:** (1) 8-pin RJ45 female;  
10Base-T/100Base-TX/1000Base-T Ethernet port

**DM OUT:** (1) DM SFP+ 4K Fiber output port;  
Accepts one Crestron SFP-10G series SFP+ transceiver module (included as part of a DMF-TX-4K PAK KIT)

**HDMI OUTPUT:** (1) 19-pin Type A HDMI female;  
HDMI digital video/audio output (DVI compatible<sup>[5]</sup>)

**HDMI INPUT 1 – 2:** (2) 19-pin Type A HDMI female;  
HDMI digital video/audio inputs;  
(DVI & Dual-Mode DisplayPort compatible<sup>[5]</sup>)

**AUDIO IN:** (1) 5-pin 3.5 mm detachable terminal block;  
Balanced/unbalanced stereo line-level audio input;  
Input Impedance: 24k Ohms balanced/unbalanced;  
Maximum Input Level: 4 Vrms balanced, 2 Vrms unbalanced

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

**CONSOLE, USB:** (1) USB Type B female;  
USB computer console port

**IR 1 – 2:** (1) 4-pin 3.5 mm detachable terminal block;  
Comprises (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

**24VDC 2.0A:** (1) 2.1 x 5.5 mm DC power connector;  
24 Volt DC power input;  
PW-2420RU power pack included

**G:** (1) 6-32 screw;  
Chassis ground lug

## Controls & Indicators

**OL:** (1) Green LED, indicates online connection to a control system via Ethernet

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

**DM OUT LINK:** (1) Green LED, indicates DM link status

**DM OUT ACT:** (1) Green LED, indicates DM link activity

**HDMI OUTPUT:** (1) Green LED, indicates video signal transmission at the HDMI output

**HDMI INPUT 1 – 2:** (2) Green LEDs, indicate sync detection at each corresponding HDMI input

**PWR:** (1) Bi-color green/amber LED, indicates operating power supplied via the power pack, illuminates amber while booting and green when operating

**RESET:** (1) Recessed pushbutton for hardware reset

# DMF-TX-4K-SFP DigitalMedia™ SFP+ 4K Fiber Transmitter

**SETUP:** (1) Red LED and (1) recessed pushbutton for Ethernet setup  
**INPUT SEL:** (1) Pushbutton for manual input selection and (2) bi-color green/amber LEDs to indicate the current active input and signal presence at each corresponding input

## Power

### Power Pack (included):

Input: 1.5 Amps maximum @ 100-240 Volts AC, 50/60 Hz;  
Output: 2 Amps @ 24 Volts DC;  
Model: PW-2420RU

**Power Consumption:** 25 Watts typical

## Environmental

**Temperature:** 32° to 104° F (0° to 40° C)  
**Humidity:** 10% to 90% RH (non-condensing)  
**Heat Dissipation:** 85 BTU/hr

## Enclosure

**Chassis:** Metal, black finish, integral mounting flanges, fan cooled; vented top, front, bottom, and sides

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

## Dimensions

**Height:** 8.44 in (215 mm)  
**Width:** 9.27 in (236 mm)  
**Depth:** 1.50 in (39 mm)

## Weight

2.0 lb (0.91 kg)

## MODELS & ACCESSORIES

### Available Models

**DMF-TX-4K-SR PAK KIT:** DigitalMedia™ SFP+ 4K Fiber Transmitter, includes SFP-10G-SR SFP+ Transceiver Module for Duplex Multimode Fiber

**DMF-TX-4K-BX PAK KIT:** DigitalMedia™ SFP+ 4K Fiber Transmitter, includes SFP-10G-BX-U SFP+ Transceiver Module for Simplex Single-Mode Fiber

**DMF-TX-4K-S PAK KIT:** DigitalMedia™ SFP+ 4K Fiber Transmitter, includes SFP-10G-S-U SFP+ Transceiver Module for CresFiber® 8G (for retrofit applications only)

### Included Accessories

**PW-2420RU:** 24 Volt DC Power Pack

**SFP-10G-SR:** SFP+ Transceiver Module, Duplex Multimode 850 nm (Qty. 1 included with DMF-TX-4K-SR PAK KIT)

**SFP-10G-BX-U:** SFP+ Transceiver Module, Simplex Single-Mode 1270/1330 nm, Uplink (Qty. 1 included with DMF-TX-4K-BX PAK KIT)

**SFP-10G-S-U:** SFP+ Transceiver Module, CresFiber® 8G Multimode, Uplink (Qty. 1 included with DMF-TX-4K-S PAK KIT)

### Available Accessories

**DMF-RMC-4K-SFP:** DigitalMedia™ SFP+ 4K Fiber Receiver

**DMCF-RX-4K-SFP:** DigitalMedia™ SFP+ 4K Fiber Receiver Card for DMF-CI-8

**CBL Series:** Crestron® Certified Interface Cables

**CNSP-XX:** Custom Serial Interface Cable

**IRP2:** IR Emitter Probe

### Notes:

1. Item(s) sold separately.
2. The DM port on this device is designed for use with Crestron [SFP-10G](#) series SFP+ transceiver modules only. The fiber interface provided by the SFP+ module is exclusively for connection to a Crestron [DMF](#) or [DMCF](#) series receiver device. It is not compatible with older Crestron DM Fiber (-F type), DM 8G® Fiber (-S type), or DM 8G SM Fiber (-S2 type) devices.
3. The LAN connection can be made via the local LAN port on the DMF-TX-4K-SFP, or via the LAN port on the companion receiver, but not both.
4. Please note that 3D video signals are converted to 2D at the receiver.
5. HDMI connections require an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. [CBL-HD-DVI](#) interface cables are available separately.

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](http://www.crestron.com/salesreps) or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: [patents.crestron.com](http://patents.crestron.com).

Certain Crestron products contain open source software. For specific information, please visit [www.crestron.com/opensource](http://www.crestron.com/opensource).

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