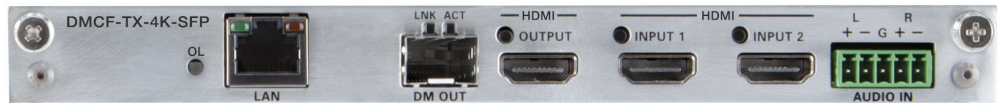


DigitalMedia™ SFP+ 4K Fiber Transmitter Card for DMF-CI-8

- > Uncompressed 4K video signal extension over fiber optic cable
- > Configurable for multimode or single-mode fiber using SFP+ transceiver modules^[2]
- > 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
- > CEC device control gateway
- > Gigabit Ethernet LAN port
- > Web browser setup
- > Occupies one card slot of a DMF-CI-8
- > Requires a DMF or DMCF series receiver



The DMCF-TX-4K-SFP is a fiber-based transmitter card 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](#)^[1]) 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).

The DMCF-TX-4K-SFP installs in any slot of a [DMF-CI-8](#) card chassis.^[1] Its “DM OUT” port allows for the insertion of an appropriate SFP+ transceiver module to enable compatibility with multimode or single-mode fiber.^[2] It also features two HDMI® inputs, one analog audio input, a local HDMI output, and a gigabit Ethernet LAN port.

4K Ultra HD

The DMCF-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 DMCF-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 DMCF-TX-4K-SFP works integrally with a [DM-MD series matrix switcher](#) to facilitate routing of 4K video and control signals over fiber optic cable. Setup requires simply installing the DMCF-TX-4K-SFP in a [DMF-CI-8](#) card chassis and connecting its first HDMI input to an available HDMI output on the switcher. An Ethernet LAN connection is also required to enable communication with the associated [control system](#).^[3]

SFP+ Configurable DM Port

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

- **DMCF-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
- **DMCF-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
- **DMCF-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 DMCF-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 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.

Local HDMI Output

In addition to its DM output port, the DMCF-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 DMCF-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.^[3]

CEC Embedded Device Control

DigitalMedia offers an alternative to conventional RS-232 or IR control methods by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to a control system, the DMCF-TX-4K-SFP provides a gateway for controlling devices through their HDMI connections, potentially eliminating the need for any dedicated control wires or IR emitters.

Web Browser Setup

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

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

SPECIFICATIONS

Fiber Types

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

Video

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

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

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 ^[2]), 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

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 DMCF-TX-4K PAK KIT)

DMCF-TX-4K-SFP DigitalMedia™ SFP+ 4K Fiber Transmitter Card for DMF-CI-8

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

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

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

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

Construction

Plug-in card, occupies (1) card slot in a DMF-CI-8 card interface, includes metal faceplate

Weight

15.1 oz (427 g)

MODELS & ACCESSORIES

Available Models

DMCF-TX-4K-SR PAK KIT: DigitalMedia™ SFP+ 4K Fiber Transmitter Card for DMF-CI-8, includes SFP-10G-SR SFP+ Transceiver Module for Duplex Multimode Fiber

DMCF-TX-4K-BX PAK KIT: DigitalMedia™ SFP+ 4K Fiber Transmitter Card for DMF-CI-8, includes SFP-10G-BX-U SFP+ Transceiver Module for Simplex Single-Mode Fiber

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

Included Accessories

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

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

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

Available Accessories

DMF-CI-8: DigitalMedia™ SFP+ 4K Fiber Extender Card Chassis

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

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 DMCF-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 or by calling 800-237-2041.

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

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