



## 4K HDMI Fiber Optic Cable Extender OPF-TH2000/OPF-RH2000

The IDK OPF-H2000 Fiber Optic Extender is an extender for long haul transmission of HDMI video, Giga Bit Ethernet signal, and bidirectional RS-232 control signals over fiber optic cabling. OPF-H2000 supports 4K signals. Input signals are extended without the loss of quality since they are extended without compression. \*This unit cannot use with OPF-H1000-A, OPF-H1000D, and FDX series optical input/output boards.

### ■ Specification

Item	OPF-TH2000 (Transmitter)	OPF-RH2000 (Receiver)
Input	1 input HDMI (*1)/DVI 1.0 TMDS single link HDCP 1.4 (Pass-through) CEC (Pass-through) Connector: Female HDMI Type A (19-pin) (*2)	1 input Digital optical signal for extension RS-232C, LAN
Output	1 output Digital optical signal for extension RS-232C, LAN	1 output HDMI (*1)/DVI 1.0 TMDS single link HDCP 1.4 (Pass-through) CEC (Pass-through) Connector: Female HDMI Type A (19-pin) (*2)
Format	VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / VESA1080 / WUXGA / QWXGA / 4K (*3) 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (*3)	
Color depth	24 bit, 30 bit, 36 bit Deep Color (*4)	
Dot clock	25 MHz to 297 MHz	
TMDS clock	25 MHz to 297 MHz	
TMDS data rate	0.75 Gbps to 8.91 Gbps	
Plug & Play	Pass-through	
Digital audio input/output	Multi-channel LPCM up to 8 channels Sampling frequency : 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit	
Cable for extension	Cable	Duplex fiber cable SFP+ optical transceiver (2 LC connectors)
	Polishing (*5)	SFP+ optical transceiver for Multimode : PC polishing (recommended) SFP+ optical transceiver for Singlemode : UPC polishing (recommended), SPC *APC is not supported
	Transmission distances (*6)	Multimode fiber (OM3): Up to 984 ft. (300 m) Singlemode fiber (OS1): Up to 6.21 mi. (10 km)
Control	RS-232C	1 port/male D-sub (9-pin), full duplex, up to 115.2 kbps
	LAN	1 port/RJ-45 10Base-T/100Base-TX/1000Base-T (Auto Negotiation), Auto MDI/MDI-X
General	AC adapter	Input : 100 - 240 VAC ±10%, 50 Hz/60 Hz ±3 Hz Output : DC 5 V 3 A (A dedicated AC adapter is provided)
	Power consumption	About 9 Watts
	Dimensions	4.2 × 1.2 × 4.7" (106 (W) × 29.5 (H) × 120 (D) mm) (Quarter rack wide, thin type) (Excluding connectors and the like)
	Weight	0.9 lbs. (0.4kg)
	Temperature	Operating: 32°F to 104°F (0°C to +40°C) Storage : -4°F to +176°F (-20°C to +80°C)
Humidity	Operating/Storage: 20% to 90% (Non Condensing)	

\*1 HEC and ARC are not supported.

\*2 Use 16.4 ft. (5 m) or shorter HDMI cables.

\*3 Supported 4K formats: 24 Hz/25 Hz/30 Hz/60 Hz (4:2:0)

\*4 Supported 4K format : only 24 bit

\*5 It is possible to connect without using the recommended polishing method, but that may cause a change of transmission distance ability due to an increase in return loss.

\*6 The maximum transmission distance is measured under the following conditions: Fiber that is polished by a recommended method is used, there is no interconnection, and the allowable bending radius is not exceeded.

### ■ SFP+ Specification

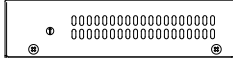
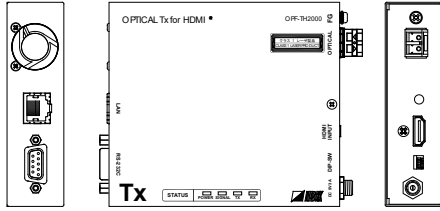
Item	Multimode fiber	Singlemode fiber
Wave length	850 nm (VCSEL Laser*)	1310 nm (DFB laser*)
Max. transmission distances	OM3: 984 ft. (300 m)	OS1: 6.21 mi. (10 km)
Receiver sensitivity (OMA) @10.3Gbps	-11.1 dBm or higher	-12.6 dBm or higher
Average Launch Power	-5 dBm to -1 dBm	-8.2 dBm to +0.5 dBm
Max. input power	+0.5 dBm	+0.5 dBm
Connector	LC (Duplex)	

\*The lasers in these models meet class1.

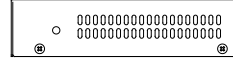
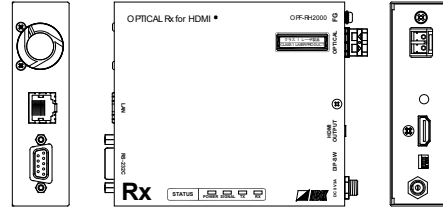
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■ Front & Rear Panels

OPF-TH2000-MM  
OPF-TH2000-SM



OPF-RH2000-MM  
OPF-RH2000-SM

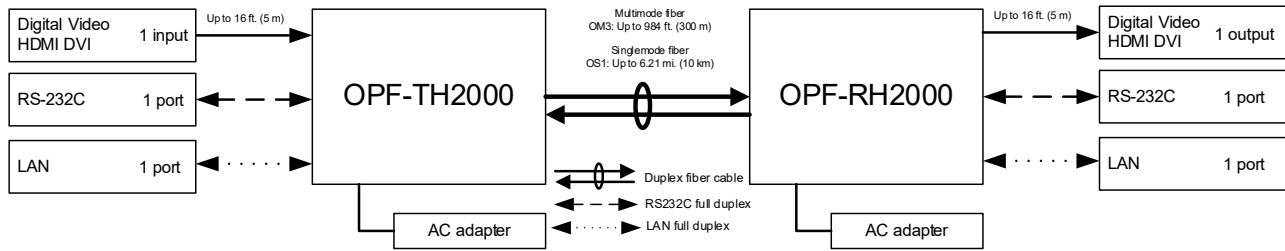


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## 4K HDMI Fiber Optic Cable Extender OPF-TH2000/OPF-RH2000

### ■ Diagram



### ■ Models

Model		Type	Model number
Fiber optic	No SFP+ optical transceiver	Transmitter	OPF-TH2000
		Receiver	OPF-RH2000
	Multimode fiber	Transmitter	OPF-TH2000-MM
		Receiver	OPF-RH2000-MM
	Singlemode fiber	Transmitter	OPF-TH2000-SM
		Receiver	OPF-RH2000-SM

### [Features]

#### ■ Video

- Up to 4K@60 (4:2:0)
- HDCP 1.4 (Pass-through)
- Transmission distances
  - Multimode fiber (OM3): 984 ft. (300 m)
  - Singlemode fiber (OS1): 6.21 mi. (10 km)

#### ■ Communication

- Bidirectional RS-232C
- LAN

#### ■ Others

- CEC (Pass-through)
- AC adapter with locking mechanism