4K@60 HDMI Fiber Optic 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	Video	HDMI / DVI	Number / Signal	1 input / HDMI (*1) / DVI1.0 - HDCP 1.4: Pass through - CEC: Pass through - TMDS Single Link - TMDS clock: 25 MHz to 297 MHz - Dot clock: 25 MHz to 297 MHz	1 inputs / Optical signal for extension
			Connector	1 female HDMI Type A (*2)	2 LC connectors
		Others		Color depth: 24bit, 30 bit, 36 bit Deep Color (*3)	
		Formats		480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (*4) VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / WUXGA / QWXGA / 4K (*4)	
	Audio	Digital	Number / Signal	1 input / Multi-channel LPCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz Sample size: 16 bit to 24 bit	1 inputs / Optical signal for extension
			Connector	1 female HDMI Type A (*2)	2 LC connectors
Output	Video	HDMI / DVI	Number / Signal	1 outputs / Optical signal for extension	1 output / HDMI (*1) / DVI1.0 - HDCP 1.4: Pass through - CEC: Pass through - TMDS Single Link - TMDS clock: 25 MHz to 297 MHz - Dot clock: 25 MHz to 297 MHz
			Connector	2 LC connectors	1 female HDMI Type A (*2)
		Others		Color depth: 24bit, 30 bit, 36 bit Deep Color (*3)	
		Formats		480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (*4) VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / WUXGA / QWXGA / 4K (*4)	
	Audio	Digital	Number / Signal	1 outputs / Optical signal for extension	1 output / Multi-channel LPCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz Sample size: 16 bit to 24 bit
			Connector	2 LC connectors	1 female HDMI Type A (*2)
TMDS data rate				0.75 Gbps to 8.91 Gbps	
Plug & Play				Pass through	
Fiber optic cable	Suitable cable			Duplex fiber cable, SFP module (2 LC connectors)	
	Polishing (*5)			SFP for Multimode: PC (recommended) SFP for Singlemode: UPC (recommended), SPC supported * APC is not supported	
Signal transmission distance (*6)				Multimode fiber (OM3): 984 ft. (300 m) Singlemode fiber (OS1): 6.21 mi. (10 km)	
Control	Serial control port		Number / Signal	1 port / Full duplex up to 115.2kbps	
			Connector	1 male D-Sub (9-pin)	
	LAN control port		Number / Signal	1 port / 10Base-T, 100Base-TX, 1000Base-T (Auto Negotiation), Auto MDI/MDI-X	
			Connector	1 RJ-45	
Others	AC adapter			Input: 100 - 240 VAC ± 10%, 50 Hz/60 Hz ± 3 Hz Output: DC 5V 3A (AC adapter is supplied)	
	Power consumption			About 9 Watts	About 9 Watts
	Dimensions			4.2 × 1.2 × 4.7" (106 (W) × 29.5 (H) × 120 (D) mm) (EIA quarter rack wide) (Excluding connectors and the like)	
	Weight			0.9 lbs. (0.4kg)	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)	

■SFP+

Item	Multimode fiber	Singlemode fiber
Wave length	850 nm (VCSEL Laser (*7))	1310 nm (DFB laser (*7))
Max. extension distance	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	2 LC connectors (Duplex)	

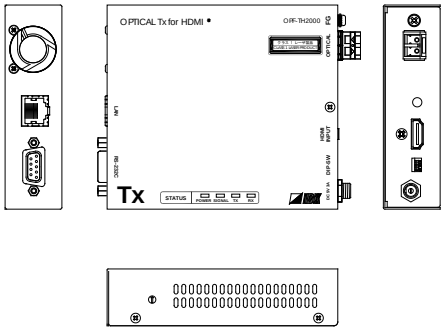
■Product Selection

Parts Number	Fiber Type	Max. Distance
OPF-TH2000-MM	Multimode	OM3: 984 ft. (300 m)
OPF-RH2000-MM		
OPF-TH2000-SM	Singlemode	OS1: 6.21 mi. (10 km)
OPF-RH2000-SM		

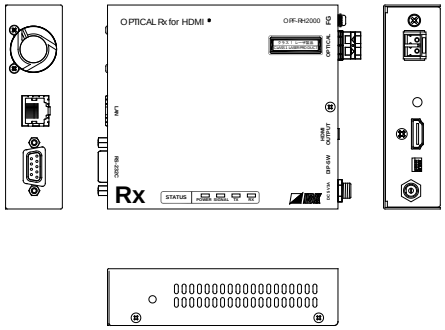
*1 HEC and ARC are not supported.
*2 Please use an HDMI cable shorter than 5 meters.
*3 4K signals are only supported 24 bit.
*4 4K signals are only supported 24 Hz / 25 Hz / 30 Hz.
*5 It is possible to connect without using the recommended polishing method, but that may cause a change of extension distance ability due to an increase in return loss.
*6 Max. Extension distance is measured under following condition; using fiber of recommended polishing method, without connection at the transmission path and not exceeding the value of allowable bending radius.
*7 This device uses laser certified to be Class 1 as measured in JIS C 6802, which means they are designed to be fundamentally safe

■ Front & Rear Panels

OPF-TH2000



OPF-RH2000



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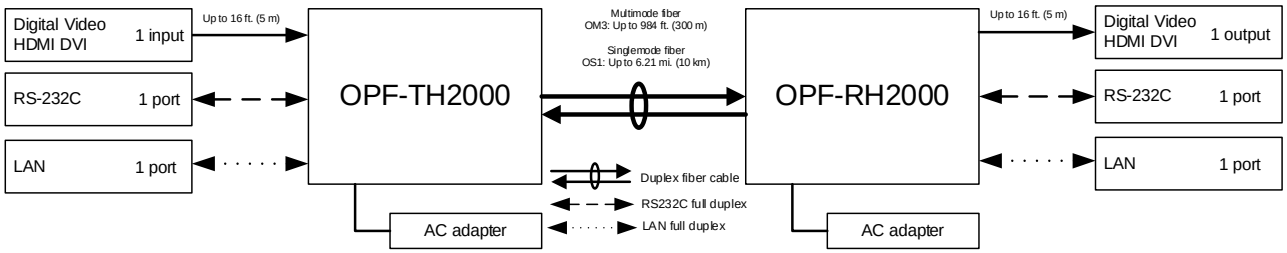
OPF-TH2000 / OPF-RH2000 Diagram and Features

■ **Diagram**



[Features]

■ **Video**

- Up to 4K@60
- HDCP (Pass through)
- Extension distance
  Multimode fiber (OM3): 984 ft. (300 m)
  Singlemode fiber (OS1): 6.21 mi. (10 km)

■ **Control**

- RS-232C bidirectional communication
- LAN transmission

■ **Others**

- CEC (Pass through)
- AC adapter mechanical lock