18Gbps 4K HDR OM3 Multi-Mode Fiber Extender with HDCP 2.2 and Bidirectional IR or RS-232
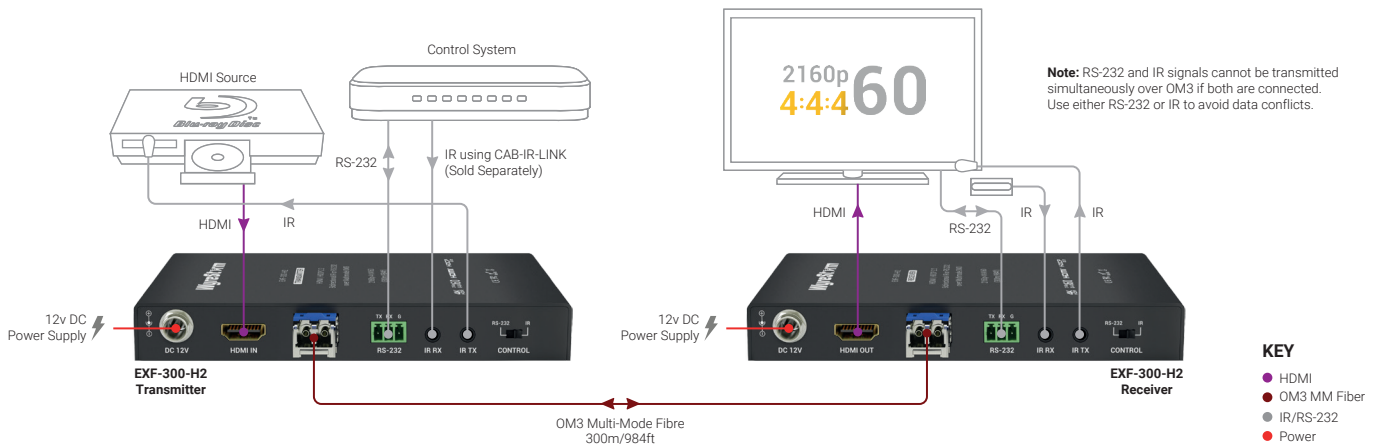
EXF-300-H2

WyreStorm

Quickstart Guide

💡 WyreStorm recommends reading through this document in its entirety to become familiar with the product's features before beginning the installation process.

4K HDR | **2160p 4:4:4 60** | **HDMI** | **HDCP 2.2**

In the Box

1x EXF-300-H2 Transmitter
1x EXF-300-H2 Receiver
1x Dual USB-A to Locking DC Power Plug
1x IR Emitter
1x IR Receiver
2x 3-Pin Screw Down Phoenix Connectors
4x Mounting Brackets (2x for TX | 2x for RX)
1x Quickstart Guide (This Document)

Basic Wiring Diagram

Note: RS-232 and IR signals cannot be transmitted simultaneously over OM3 if both are connected. Use either RS-232 or IR to avoid data conflicts.

KEY
● HDMI
● OM3 MM Fiber
● IR/RS-232
● Power

Wiring and Connections

WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the switcher. Read through this section in its entirety before running or terminating the wires to ensure proper operation and to avoid damaging equipment.

⚠️ **IMPORTANT! Wiring Guidelines**

- The use of patch panels, wall plates, cable extenders, kinks in cables, and electrical or environmental interference will have an adverse effect on signal transmission which may limit performance. Steps should be taken to minimize or remove these factors completely during installation for best results
- WyreStorm recommends using pre-terminated HDMI and DP cables due to the complexity of these connector types. Using pre-terminated cables will ensure that these connections are accurate and will not interfere with the performance of the product.

OM3 Cable Performance Guide

0m	30m	60m	90m	120m	150m	180m	210m	240m	270m	300m
0ft	98ft	196ft	295ft	394ft	492ft	590ft	689ft	787ft	886ft	984ft

🟩 **4K** Transmission

OM3 Fiber SFP+ Guidelines

The EXF-300-H2 is designed to work with SFP+ OM3 MM fiber cables providing a distance of 300m/984ft for all resolutions. This operation can be affected by how the cables are terminated and routed within an installation. Care should be taken when terminating and routing based on the following guidelines.

- Connector type is fiber LC duplex to be used with OM3 Multimode fiber cables
- Fiber cable has a bend radius of 6.0cm/2.4in, when routing never exceed this radius as damage to the fiber core can occur
- Fiber core ends should be inspected for damage prior to terminating. Any scratches or blemishes can affect the performance of the connection
- Never touch the end of the fiber core with bare hands so that any oils or dirt can be transferred to the surface of the core
- Refer to the guidelines and connection parameters from the fiber cable manufacturer for more specific information regarding the cable being used

IR TX/RX Guidelines

- Using WyreStorm infrared emitters and receivers is the best way to ensure that most IR coding formats are transmitted and received Other 3rd party emitters and receivers can be used; however, these devices must operate in the same manner as the WyreStorm devices.
- Due to differences in IR across 3rd party control systems their IR ports should never be connected directly to a NetworkHD system as an incompatibility may exist. WyreStorm offers a cable that compensates for voltage differences as well adjusts for differences in the pins used within the port. Refer to the CAB-IR-LINK product page for more information.

IR TX Port Pinout

Connection for IR TX (transmit) uses a 3.5mm (1/8in) mono plug.

Tip: Anode
Sleeve: Cathode (IR Signal)

IR RX Port Pinout

Connection for IR RX (receive) uses a 3.5mm (1/8in) stereo jack that outputs +5V DC to power the included IR receiver.

Tip: +5V DC
Ring: IR Signal
Sleeve: Ground (GND)

RS-232 Wiring

The EXF-300-H2 uses a 3-pin RS-232 with no hardware flow control. Most control systems and computers are DTE where pin 2 is RX, this can vary from device to device. Refer to the documentation for the connected device for pin functionally to ensure that the correct connections can be made.
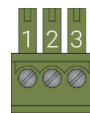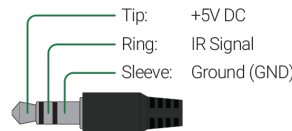
| WyreStorm Connector			3rd Party Device
Pin 1	TX (Transmit)	---> To --->	RX (Receive)
Pin 2	RX (Receive)	---> To --->	TX (Transmit)
Pin 3	G (Ground)	---> To --->	G (Ground)

Setup and Configuration

RS-232/IR Over Fiber

The EXF-300-H2 can transmit RS-232 or IR over fiber bidirectionally, however it can only send one or the other. The following settings must be made on both the TX and RX for the type of signal that will be sent within the installation.

Send and Receive RS-232

RS-232   IR

CONTROL
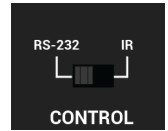
Send and Receive IR

RS-232   IR

CONTROL
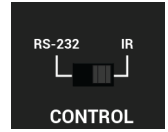
EDID Configuration

This extender uses EDID pass-through from the display to the source. No configuration is required for EDID settings.

Troubleshooting

No or Poor-Quality Picture (snow or noisy image)
- Verify that power is being supplied to the transmitter and receiver.
- Verify that the fiber cable is properly terminated.
- Verify that the output resolution of the source and display is supported by this extender.
- If transmitting 3D or 4K, verify that the HDMI cables used are 3D or 4K rated.
- Verify that all source and fiber connections are not loose and are functioning properly.

No or Intermittent 3rd party Device Control
- Verify that the RS-232/Ethernet cables are properly terminated.
- Verify that emitters/receivers are compatible with WyreStorm IR.
- If using an IR control system, verify that it is connected using the CAB-IR-LINK cable.

Specifications

Audio and Video		
	Transmitter	**Receiver**
Inputs	1x HDMI: 19-pin type A	1x OM3 In: SFP+ Fiber LC Connection
Outputs	1x OM3 Out: SFP+ Fiber LC Connection	1x HDMI: 19-pin type A
Output Video Encoding	TMDS over fiber	
Encoding Data Rate	10Gbps	
Audio Formats	2ch Analog/PCM	Multichannel: LPCM and Up to Dolby TrueHD and DTS-HD Master Audio	

	Resoluton	**HDMI**	**MM OM3**
Video Resolutions (Max)	1920x1080p @60Hz 12bit	15m/49ft	300m/984ft
	1920x1080p @60Hz 16bit	7m/23ft	300m/984ft
	3840x2160p @24Hz 10bit 4:2:0 HDR	3m/10ft	300m/984ft
	3840x2160p @30Hz 8bit 4:4:4	7m/23ft	300m/984ft
	3840x2160p @60Hz 10bit 4:2:0 HDR	3m/10ft	300m/984ft
	4096x2160p @60Hz 8bit 4:2:0	7m/23ft	300m/984ft
	4096x2160p @60Hz 8bit 4:4:4	7m/23ft	300m/984ft

Supported Standards	DCI	RGB	HDR	HDR10	Dolby Vision up to 30Hz	HLG	BT.2020	BT.2100
Maximum Pixel Clock	600MHz

Communication and Control	
HDMI	HDMI	HDCP 2.2	EDID	DVI/D supported with adapter (not included)
Fiber Multimode	HDMI	HDCP 2.2	EDID
IR	1x IR RX: 3.5mm (1/8in) TRS Stereo	1x IR TX: 3.5mm (1/8in) TS Mono	Bidirectional over OM3
RS-232	1x RS-232: 3-pin Phoenix	Bidirectional over OM3

Power	
Power Supply	12V DC 0.5A
Max Power Consumption	4W

Environmental	
Operating Temperature	0 ~ +45°C (32 ~ +113 °F)	10% ~ 90% non-condensing
Storage Temperature	-20 ~ +70°C (-4 ~ +158 °F)	10% ~ 90% non-condensing
Maximum BTU	14 BTU/hr

Dimensions and Weight	
**Rack Units	Wall Box**	<1U
**Height With	Without Feet**	20mm/0.79in
**Width With	Without Brackets**	150mm/5.91in
**Depth With	Without Handles**	74.4mm/2.93in
Weight	0.3kg/0.66lbs

Regulatory	
Safety and Emission	CE	FCC	RoHS

Note: WyreStorm reserves the right to change product specification, appearance or dimensions of this product at any time without prior notice.

Warranty Information