ANALOG WAY®

Quick Start Guide

EXT-HDMI20-OPT-TX
EXT-HDMI20-OPT-RX

Important Safety Instructions

Please read the supplied safety instruction document before using the product and keep it available for future reference.

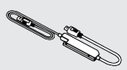
CLASS 1 LASER PRODUCT
CAUTION - CLASS 3R INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EYE EXPOSURE.

▶ ***CAUTION*** *- The use of controls or adjustments or any performance of procedures other than those specified herein may result in hazardous radiation exposure.*

Introduction

Thank you for choosing Analog Way EXT-HDMI20-OPT-TX and RX optical extenders. The EXT-HDMI20-OPT-TX and EXT-HDMI20-OPT-RX are HDMI 2.0 compatible fiber optical extenders providing uncompressed signal extension with embedded audio to a range of 2500 m (8000 ft.) over a single multimode fiber cable connection. Its rugged, solid metal casing provides excellent cooling and maximum reliability. These fiber optical extenders are also compatible with Analog Way's LivePremier™ HDMI 2.0 over fiber output card (ref. ACC-AQL-OUT-HDMI-FBR) and HDMI 2.0 over fiber input card (ref. ACC-AQL-IN-HDMI-FBR).

Box Contents

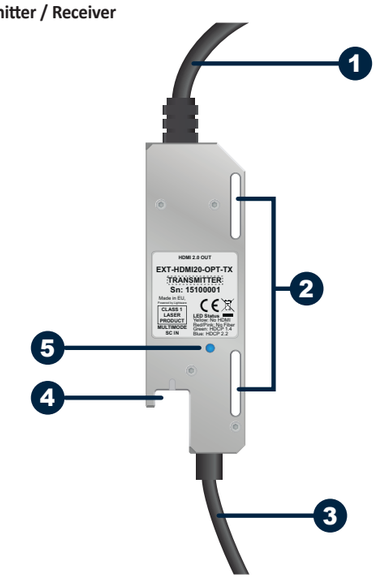


Transmitter / Receiver module

5V DC adaptor with interchangeable plugs

Safety and Warranty Info, Quick Start Guide

Bottom View - Transmitter / Receiver



1 HDMI plug — HDMI connector plug for HDMI audio and video signal transmission. The following protocols and features are supported:

- HDMI 1.x and HDMI 2.0 audio/video - the module automatically selects between HDMI 2.0 and HDMI 1.x based on the type of the signal source or sink device.
- HDCP 1.4 or HDCP 2.2 encryption - the module automatically selects between HDCP 1.4 and HDCP 2.2 based on the type of the signal source or sink device.
- EDID, CEC, and HDCP transparent.

2 Loopholes — Loopholes for self-fastening belts for mounting. See the details in the *Mounting Options* section.

3 USB-A plug — Standard USB-A plug to USB-compatible (1.1 or higher) host port. The following features are supported:

- The receiver and transmitter can be fully powered from the USB port. This capability is available even if the attached USB host port is "power only".
- For transmitter only: USB power is fully compatible with HDMI power. The transmitter performance will not degrade if the HDMI power and USB power are available simultaneously. Similarly, connecting USB power and HDMI power simultaneously will not cause any damage to the attached USB host or HDMI video source.

4 SC fiber connector — SC fiber optical connector. Connect a multimode fiber optical cable between the transmitter and the receiver. The following features are supported:

- All communication, including audio and video transmission, and HDCP over one optical fiber.
- The connector supports open fiber detection with high speed laser shutdown.

5 Status LED — Indicates the current status of the transmitted or received optical and HDMI signals, and the HDCP-encryption.

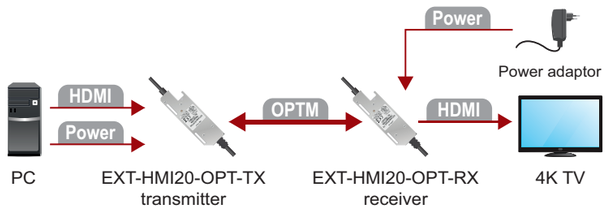
	OFF	Module is not powered.
	BLINKING (red)	No fiber link is detected.
	BLINKING (yellow)	Fiber link is established, but no HDMI cable is detected (5V is not detected on the source or hotplug is not detected on the sink).
	ON (yellow)	Fiber link is established, cable is connected, but no HDMI signal.
	BLINKING (green)	Fiber link is established, signal is not HDCP-encrypted.
	ON (green)	Fiber link is established, signal is encrypted with HDCP 1.4.
	BLINKING (blue)	Fiber link is established, HDCP 2.2 initialization is in progress.
	ON (blue)	Fiber link is established, signal is encrypted with HDCP 2.2.

Troubleshooting

The following LED status mean incorrect extender modes. It can happen when the USB-A plug of the extender is connected to a USB connector where the data transmission is enabled.
Solution: Use the supplied power adaptors.

	BLINKING (pink)	The device is in bootloader mode.
	ON (pink)	The device is in bootloader mode and bootloader is configured by the USB host.

Connecting Steps



Follow the installation steps to connect the extenders between the source and sink devices:

OPTM — Connect the multimode fiber optical cable to the SC fiber connector of the receiver.

HDMI — Connect the HDMI plug of the receiver to the input port of the sink device. The extender reads the EDID from the device (seamless switcher input, projector, monitor, etc), and outputs the video signal according to the set resolution.

Power — Power on the receiver by choosing one of the powering options below:

- Connect the USB plug of the receiver to the power adaptor.
- Connect the USB plug of the receiver to the USB connector of the sink device.

OPTM — Connect the multimode fiber optical cable to the SC fiber connector of the transmitter.

HDMI — Connect the HDMI plug of the transmitter to the output port of the source device (e.g. PC).

Power — Finally power on the transmitter by choosing one of the powering options below:

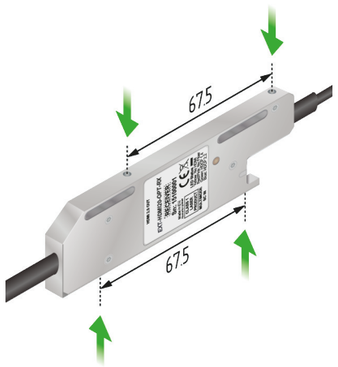
- Connect the USB plug of the transmitter to the power adaptor.
- Connect the USB plug of the transmitter to the USB connector of the source device.
- Connect the HDMI plug of the transmitter to the output port of the source device (e.g. PC). If the HDMI source device is able to provide enough 5V DC current (500mA), there is no need for external 5V DC power. The extender is powered immediately when the source device is switched on.

Check the Status LED. When the connection has been made successful, the LEDs on the transmitter and receiver will appear green or blue depends on the HDCP-encryption.

Mounting Options

The ergonomic enclosure provides two possible methods for mounting the device.

Option 1 - Mounting the device to a rack shelf



The transmitter and the receiver modules have two mounting holes each with inner threads on the two narrow sides. The distance between the holes is 67,5 mm.

Fasten the device by the screws packaged with the following, compatible mounting accessories:

- Under-desk mounting kit
- Under-desk double mounting kit
- 1U high rack shelf

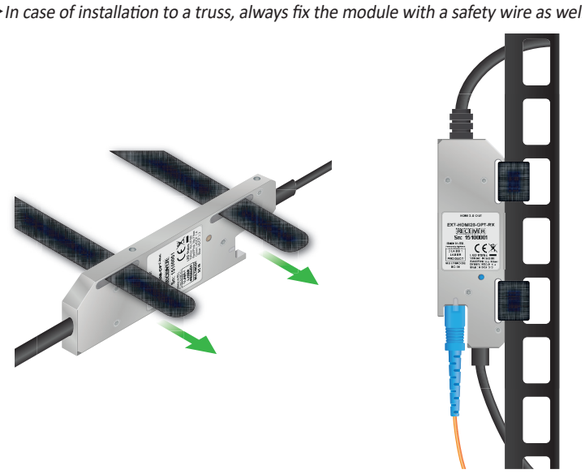
The required screw type: PZ flat head (M3x6mm)

To order mounting accessories please contact your sales representatives

Option 2 - Mounting the device using self-fastener

Use the two tie-down loops of the enclosure to thread through self-fastener. The modules can be mounted to basically any installation point, for example rack frames.

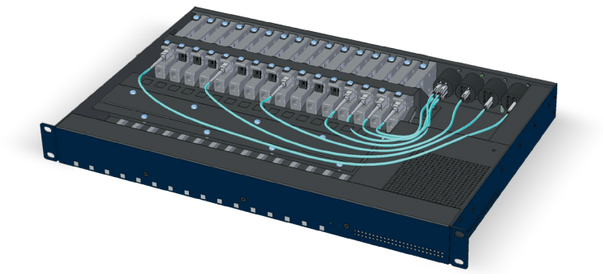
▶ *In case of installation to a truss, always fix the module with a safety wire as well.*



Option 3 - Mounting the device to the OPT-POWERTRAY

The **OPT-POWERTRAY** is a 1RU size housing accessory which can enclose up to 16 pcs **EXT-HDMI20-OPT-TX/RX** units, also providing power source for every installed device. Three different models are available:

- SC model: built with 8x SC duplex fiber optical connectors for 16x multimode SC fiber optical cables.
- NTD model: 4x Neutrik NO2-4FDW-A connectors for 4x Neutrik opticalCON DUO series cables or 8x LC fiber optical cables.
- NTQ model: 4x Neutrik NO4FDW-A connectors for 4x Neutrik opticalCON QUAD series cables.



Further Information

www.analogway.com

January 2021
QSG EXT-HDMI20-OPT-TX/RX
Code : 140209

Specification

General

- Compliance ..... CE
- EMC Immunity ..... IEC/EN 55035:2017
- EMC Emission ..... IEC/EN 55032:2015
- Safety..... IEC/EN 62368-1:2014
- Warranty ..... 3 years
- Cooling ..... Passive
- Power consumption - TX (1080p60 / 4K60) ..... 1.5 W / 2 W
- Power consumption - RX (1080p60 / 4K60) ..... 0.8 W / 1 W
- Operating temperature..... 0 to +50˚C (+32 to +122˚F)
- Storage temperature.....-40 to +85˚C (-38 to +185˚F)
- Operating humidity..... 10% to 90%, non-condensing

HDMI Port

- Connector type ..... 19-pole HDMI Type A plug
- Standard..... DVI 1.0, HDMI 1.4, HDMI 2.0
- Color space..... RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
- Maximum resolution .....4096x2160@60 Hz, 36 bit deep color support
- HDCP compliancy..... HDCP 1.4 and HDCP 2.2

Fiber Optical Port

- Connector type .....SC simplex receptacle
- Laser wavelengths..... High speed lane: 780, 800, 825, 850 nm
- ..... Low speed lane: 910, 980 nm
- Laser class specification .....Class 1 (if enclosure removed: Class 3R)
- Compliance .....IEC/EN 60825-1:2014-05 Ed. 3.0
- ..... 21CFR Subchapter J Parts 1040.40 and 1040.11
- Output OMA ..... -6 dBm
- OMA sensitivity..... -12,5 dBm

Power

- Power supply (TX) ..... External power adaptor / USB / HDMI
- Power supply (RX)..... External power adaptor / USB
- Power adaptor ..... In 100-240 V AC 50/60 Hz, Out 5V DC, 1 A
- Power connector.....USB-A plug

Enclosure

- Material.....Aluminum
- Enclosure dimensions in mm..... 110.5 W x 35.5 D x 11.4 H
- Enclosure dimensions in inch ..... 4.35 W x 1.40 D x 0.44 H
- Weight ..... 145 g (0.32 lbs)

- Rack mountable .....Yes, with 1U high rack shelf
- Length of pigtail HDMI cable..... 800 mm (31.5 inch)
- Length of pigtail USB cable ..... 1000 mm (39.4 inch)

Features

- Resolutions up to 4K@60Hz with RGB 4:4:4 colorspace
- 18 Gbps bandwidth
- HDMI 2.0, HDMI 1.x, and DVI 1.0 compliant
- HDCP 2.2, HDCP 1.4 compliant and CEC, EDID transparent
- 36-bit deep color support
- 3D signal compatibility with frame packing, side-by-side and top-bottom formats
- Zero frame delay – no latency
- No compression
- One MultiMode fiber cable up to 600 m (~2000 ft.) on case of 4K60 resolution
- Supports all HDMI audio formats: Dolby TrueHD and DTS-HD Master Audio
- Plug & Play
- SC optical connector
- Solid aluminum housing for professional use

Maximum Extension Distances

Resolution, Pixel clock rate	OM1	OM2	OM3	OM4
1280x720p60 Hz	800 m	1000 m	2500 m	2500 m
1920x1080p60 Hz	500 m	1000 m	2500 m	2500 m
3840x2160p30 Hz (4k30 4:4:4)	200 m	600 m	1500 m	1500 m
3840x2160p60 Hz (4k60 4:2:0)	200 m	600 m	1500 m	1500 m
3840x2160p60 Hz (4k60 4:4:4)	Not supported	300 m	600 m	600 m
4096x2160p60 Hz (DCI 4K60)	Not supported	300 m	600 m	600 m

Important Safety Instructions

Please read and keep the information in the attached safety instructions supplied with the product before starting using the device.

WARNING

To prevent injury, the apparatus is recommended to securely attach to the floor/wall or mount in accordance with the installation instructions. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus. No naked flame sources, such as lighted candles, should be placed on the apparatus.

WEEE (Waste Electrical & Electronic Equipment)

Correct Disposal of This Product

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from, uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased, this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.