

ZIGEN

COMPLETE HD/IP
CONNECTIVITY SOLUTIONS

OFL-1000

Uncompressed 4K@60Hz 4:4:4
HDMI Extender over Fiber



OFL-1000 USER MANUAL

Read this user manual carefully before using the product. Pictures shown in this manual are for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated on March, 2019. In the constant effort to improve the product, we reserve the right to make function or parameter changes without notice or obligation. Please refer to the dealers for the latest details.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.



Important Safety Instructions

To ensure the best performance from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the specifications of product may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, and please treat them as normal electrical wastes.

Powered Product Warranty

Zigen warrants its powered products against any defects in materials and workmanship for a period of three years from the date of invoice. Touchscreen displays carry a one year parts and labor warranty. If a malfunction occurs during the warranty period, Zigen will repair or replace a product to its original operating condition. A return authorization number must be obtained from Zigen before products are returned for service.

Non-Powered and Cable Products - Lifetime Limited Performance Warranty

Zigen warrants that its non-powered products and cable products will be free from defects in material and workmanship for as long as you or your customer owns the product. All Zigen non-powered products and cables are designed and engineered to meet and exceed performance specifications. If, at any time, the product fails due to manufacturer defect, Zigen will repair or replace the product to ensure that it meets original performance specifications. Reduced performance due to normal wear and tear, or damages caused by misuse or negligence will not be covered. Zigen will test and evaluate all non-powered and cable products claimed defective. Products must be shipped to Zigen, prepaid along with proof of purchase only after obtaining a Return Merchandise Authorization (RMA) number from Zigen. This statement of policy is in lieu of any other policy expressed or implied and no representative or person is authorized to assume any other liability or adopt any other policy for Zigen without our written consent.

Return Policy

If you would like to return a Zigen product, it can be done within 30 days of purchase for a full refund, less shipping and handling. Zigen will not be responsible for shipping and handling of product returns. Returns will only be accepted of products with proof of purchase, products in the original packaging with zero to minimal use and a Return Merchandise Authorization RMA number provided by Zigen.

Contact Zigen

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The OFL-1000 is the latest innovative new product from Zigen. 4K/60Hz 4:4:4 HDMI extender over single MM or SM fiber, with Bi-Directional IR, RS232, Toslink and ARC. Robust and cost effective - the OFL-1000 is the right HDMI extender for all of your projects requiring 24/7 flawless operation. Uncompressed HDMI 2.0a/b 18-G signal up to 300m (1000-ft) from a transmitter to receiver via multi-mode OM3 or 2km (6500-ft) via single-mode SM fiber. HDCP 2.2 complaint and supports 4K/UHD@60Hz with 4:4:4 chroma sampling, as well as data rates beyond 18Gbps.

Features

- Supports HDMI 2.0a/b and HDCP2.2.
- True uncompressed transmission, beyond 18Gbps bandwidth support.
- Supports video resolution up to 4K@60Hz with 4:4:4 chroma sampling.
- 4K@60Hz Dolby Vision, HDR10, HDR-10+ and HLG support.
- EDID pass-through.
- Full ARC support (up to four modes).
- CEC pass-through.
- Bi-directional IR and RS232 pass-through.
- Up to 300m (1000ft) multi-mode or 2km (6500ft) single-mode on full 4K
- Single fiber with LC connector.

Package List

▪ 1x Transmitter (Tx)	▪ 1x Receiver (Rx)
▪ 2x Tx Mounting Ears with 4 Screws	▪ 2x Rx Mounting Ears with 4 Screws
▪ 4x Plastic Cushions	▪ 4x Plastic Cushions
▪ 1x Tx Power Adapter (12V DC 1A)	▪ 1x Tx Power Adapter (12V DC 1A)
▪ 1x RS-232 (DB-9) Cable	▪ 1x RS232 (DB-9) Cable
▪ 1x User Manual	

Note: Please contact your distributor immediately if any damage or defect in the components is found.

Transmitter (Tx)	
Input	(1) HDMI In
Input Connector	(1) Type-A female HDMI
Output	(1) Toslink connector, (1) Audio Out
Output Connector	(2) LC connector; (1) Optical Out
Control 3.5mm	(1) IR In (1) IR Out
Control DB-9 Connector	(1) RS-232
Receiver (Rx)	
Input	(1) Toslink connector (1) Audio In
Input Connector	(1) LC connector, (1) Optical In
Output	(1) HDMI Out
Output Connector	(1) Type-A female HDMI
Control 3.5mm	(1) IR In (1) IR Out
Control DB-9 Connector	(1) RS-232
General	
Video Resolution	Up to 4Kx2K 60Hz 4:4:4 Dolby Vision
Audio Format	Supports PCM, Dolby Digital, DTS, DTS-HD, Dolby Atmos
HDMI Standard	2.0a/b
HDCP Version	2.2
HDR 10, HDR-10+, HLG	Supported
CEC pass-through	Supported
EDID Bypass	Supported
HPD	Supported
Transmission Distance	≤300m via multi-mode OM3/OM4 fiber cables.
Transmission Distance	≤2000m via single-mode fiber cables.
Operation Temperature	-5°C ~ +55°C
Storage Temperature	-25°C ~ +70°C
Relative Humidity	10%-90%
Power Supply	Input: AC 100~240V, 50/60Hz; Output: 12V DC 1A.
Power Consumption	9W (max)
Dimension (W*H*D)	135mm x 20.3mm x 90mm
Net Weight	TX/RX:175g

Transmitter Description



- 1. Power LED:** The LED illuminates green when power is applied.
Link LED: The LED illuminates green when there is a valid fiber optic connection with the receiver.
Status LED: The LED illuminates green when the signal data is transmitting successfully between the transmitter and receiver.
HPD: The LED illuminates green when a source is connected to the transmitter.
- 2. Optical Out:** LC Fiber Optic output port to connect the **Optical In** port of receiver by single-mode fiber or multi-mode fiber.
- 3. HDMI In:** Type-A female HDMI input port to connect the source device.
- 4. Audio Out (ARC):** Toslink digital audio output port for routing multi-channel audio from receiver to audio amplifier.
- 5. Audio Mode Selection Switch:**
 - **ARC (Default):** Switches audio mode to ARC.
 - **Audio:** Switches audio mode to audio pass-through (from receiver).
- 6. IR In:** 3.5mm mini jack to connect IR receiver or IR system for IR pass-through.
- 7. IR Out:** 3.5mm mini jack to connect IR emitter for IR pass-through.
- 8. RS232:** terminal block to connect the RS232 control device (e.g. PC) or a third-party device to be controlled.
- 9. FW:** Micro-USB port for firmware upgrade ONLY.
- 10. DC 12V:** Locking power port for 12V DC power adapter connection (both Tx and Rx must be powered individually).



- 1. Power LED:** The LED illuminates green when power is applied.
Link LED: The LED illuminates green when there is a valid fiber optic connection with the transmitter.
Status LED: The LED illuminates green when the signal data is transmitting successfully between the transmitter and receiver.
HPD: The LED illuminates green when a display is connected to the receiver.
- 2. Optical In:** LC Fiber Optic input port to connect the **Optical Out** port of transmitter by single-mode fiber or multi-mode fiber.
- 3. HDMI Out:** Type-A female HDMI output port to connect the display device.
- 4. Audio In (ARC):** Toslink digital audio input port for routing multi-channel audio to transmitter.
- 5. Audio Mode Selection Switch:**
 - **ARC (Default):** Switches audio mode to ARC.
 - **Audio:** Switches audio mode to audio pass-through (to transmitter).
- 6. Audio In (ARC):** Toslink digital audio input port for routing multi-channel audio to transmitter.
- 7. IR In:** 3.5mm mini jack to connect IR receiver or IR system for IR pass-through.
- 8. IR Out:** 3.5mm mini jack to connect IR emitter for IR pass-through.
- 9. RS232:** terminal block to connect the RS232 control device (e.g. RTI XP6) or a third-party device to be controlled.
- 10. FW:** Micro-USB port for firmware upgrade ONLY.
- 11. DC 12V:** Locking power port for 12V DC power adapter connection (both Tx and Rx must be powered individually).

Usage Precautions:

- Make sure all components and accessories are included before installation.
- System should be installed in a clean environment with proper temperature and humidity.
- All power plugs, sockets, and power cords should be insulated and safe.
- All devices should be connected before powered on.

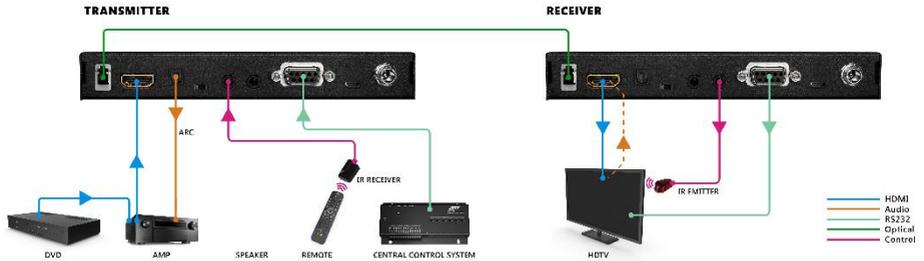
There are four ways to route digital audio with the extender system. Below is a chart indicating the routing status based on the audio mode switch selections on the transmitter and receiver.

	Switch Status		Audio
	Transmitter	Receiver	
①	ARC	ARC	Audio signal transmitted from smart TV to AV Receiver/ARC (HDMI In and Audio Out).
②	ARC	Audio	Audio signal transmitted from receiver (Audio In) to transmitter (HDMI In and Audio Out).
③	Audio	ARC	Audio signal transmitted from receiver/ARC display connection to transmitter (Audio Out) only.
④	Audio	Audio	Audio signal transmitted from receiver (Audio In) to transmitter (Audio Out) only.

Note: When the switch status is set as mode 1, 2 or 3, the amplifier and display must support ARC and CEC.

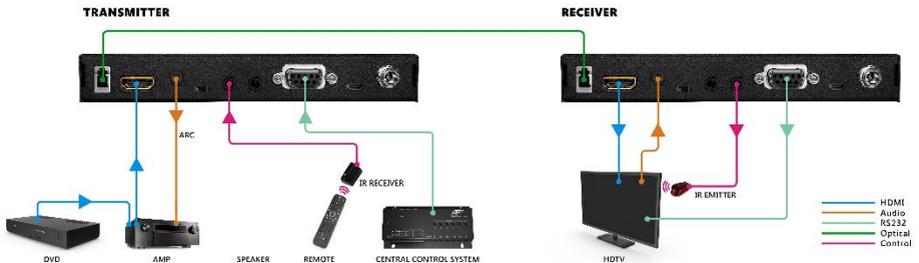
Switch Status ①: Transmitter - ARC; Receiver - ARC

Audio signal transmitted from smart TV to AV Receiver/ARC (HDMI In and Audio Out).



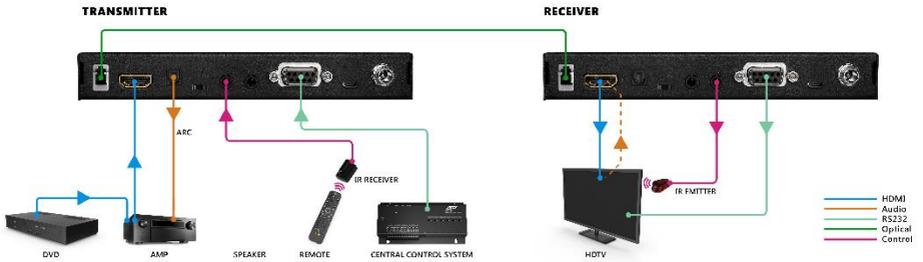
Switch Status ②: Transmitter - ARC; Receiver - Audio

Audio signal transmitted from receiver (Audio In) to transmitter (HDMI In and Audio Out).



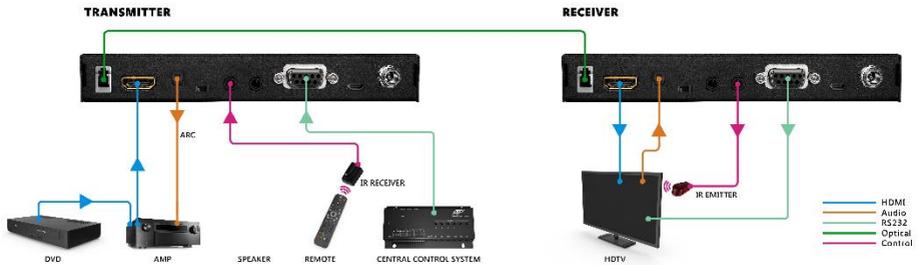
Switch Status ③: Transmitter - Audio; Receiver - ARC

Audio signal transmitted from TV to receiver/ARC (**Audio Out**) only.



Switch Status ④: Transmitter - Audio; Receiver - Audio

Audio signal transmitted to receiver (**Audio In**) to transmitter (**Audio Out**) only.



Problems	Potential Causes	Solutions
Color loss or vague/ double image on display.	Poor quality optical fiber cable.	OM3/OM4 cable needed.
Power led is off	Not being powered.	Check power source
	Poor contact.	Make sure power adapter is making good contact.
No output on the display.	Source or Display is off.	Check the source/ display.
	Poor contact.	Check the HDMI cables one by one to make sure they are inserted properly.
	The display doesn't support the resolution.	Connect the display to the transmitter and capture its EDID data before using.
ARC audio is not received.	CEC or ARC is turned off.	Ensure both CEC and ARC is enabled on both, display and as well as AV Receiver.

Note: If you need further assistance, please contact Zigen support Team