Digital Extender®

User Manual

Total Digital Connectivity Solutions

HDMI Pure Fiber Optic Extender
OBHD

RTcom USA, Inc. Locations

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HDMI™
HIGH DEFINITION MULTIMEDIA INTERFACE

Cautions:
1. Digital Extender® logo is our own trademark of RTcom USA.,Inc.
2. HDMI is a trademark of hdmi.org
3. Any of the products may be changed without any notice in order to improve the function of the product.
4. The design and specification of the product may be changed without any prior notice.

Unpacking

Each HDMI Pure Fiber Optic Extender package includes the following items;
- OBHD TX/RX Unit
- 12V Power Adapter: 2 pcs
- User manual

Troubleshooting

The HDMI Pure Fiber Optic Extender is designed for years of trouble free service, please reference the troubleshooting chart below if experiencing issues with the device.

Problem	Solution
No picture(or signal)	1. Ensure the power LED is illuminated. 2. Check if TX or RX module is properly connected to sources or displays. 3. Check if fiber optic cable is properly connected. 4. Reboot source device after the connection of fiber optic cables.
Poor picture or noise	1.Restart the system 2.Turn off DC power adapter, disconnect fiber optic cable, reconnect the cables and power on. 3, Check electric ground level of power for HDMI Devices 4. Make sure that saved EDID is same as that of display
No Sound	1.Check if the input / output audio is digital 2. Ensure the power LED is illuminated.

Warranty Information

1 (One) Year Warranty
RTcom USA warrants this HDMI Pure Fiber Optic Extender to be free from defects in workmanship and materials, under normal use and service, for a period of one (1) year from the date of purchase from RTcom USA or its authorized resellers.

If a product does not work as warranted during the applicable warranty period, RTcom USA shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item, or refund to customer the purchase price paid for the defective product.

All products that are replaced will become the property of RTcom USA. Replacement products may be new or reconditioned.

Any replaced or repaired product or part has a ninety (90) day warranty or the reminder of the initial warranty period, whichever is longer.

RTcom USA. shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to RTcom USA for repair under warranty or not.

Warranty Limitation and Exclusion
RTcom USA shall have no further obligation under the foregoing limited warranty if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or service other than by RTcom USA or its authorized agents, causes other than from ordinary use or failure to properly use the product in the application for which said product is intended.

Contents

Description, General Specification

- Send HDMI signal to long distance using pure fiber optic cable (multimode 4 strands)

- Owing to its compact size and low power design OBHD connects monitors, HDTV, and projectors at the   plug & play

- OBHD uses fully insulated fiber optic cable and is rarely affected by electronic wave or electric noise. The best quality of HDMI signal can be achieved in every industrial site and place

ITEM	DESCRIPTION
Model Name	OBHD
Input Signal	HDMI
Output Signal	HDMI
Resolution	500m (1640ft) at 1920*1080p maximum 1000m (3280ft)
Receptacle	DC Power Jack HDMI 19 Pin Female LC type fiber optic connecter 4 strands
HDCP/DDC Support	Compliant/Save EEprom
Power Consumption	12V Power Adapter(Included) Max 10 W
Dimension	131x106x30 mm
Weight	TX, RX: 0.40Kg each

1-2 Description , General Specification

Technical Specification

Data transmission speed: 2.25 Gbps (Single Link)
Digital Video Bandwidth: 25~165 Mhz
Resolution: Up to 1920*1080p
HDMI Version 1.3 Compliance with deep color
Input/output signal standard: HDMI
Maximum length: 1920*1080p -> 500m (1640ft)
                            Optional   -> 1000m (3280ft)
Light Source: 850 nm Vcsel
Fiber Optic cable: 50/125 & 62.5/125 multimode
Input connector type: HDMI Female 19P / LC type Fiber Optic connecter * 4 strands
Output connector type: HDMI Female 19P / LC type Fiber Optic connecter * 4 strands
Power consumption: TX 2.65 Watts (Max), RX 3.48 Watts (Max)
Power supply: DC 12V, 3A

TX/RX FIBER OPTIC Cable connections
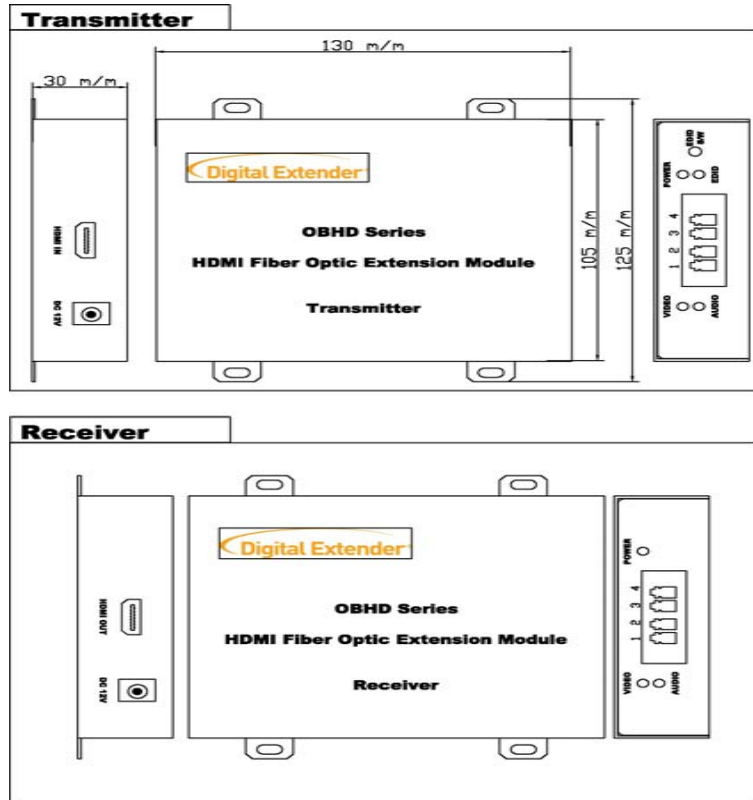
TX: 1------ -> RX: 1
TX: 2------ -> RX: 2
TX: 3 ------> RX: 3
TX: 4 ------> RX: 4

1-7 Technical Specification

Mechanical Specification

Dimension: 131x106x30 mm

Functioning part
HDMI In: HDMI Input port
HDMI Out: HDMI Output port
1234: Fiber Optic cable connection port
DC-12V: power input port

Display part
POWER LED: display Power on/off
EDID LED: display the status of EDID appropriate operation
EDID S/W: EDID operation switch
Video LED: display the status of HDMI video transmission
Audio LED: display the status of HDMI audio transmission

Environmental and Reliability Specifications

Recommended environmental conditions for the operation are temperature range of 10°C~40°C, non-condensing humidity levels of 10%-80%, and altitude ceiling of 3,000 meters (9,840 feet).

Environmental limits for transportation are temperature range of -25°C~60°C, non-condensing humidity levels of 5%~95%, and altitude ceiling of 15,000 meters (49,200feet)

Environmental limits for storage are established at temperature range of -20°C~45°C, non-condensing humidity levels of 5%~95%, and altitude ceiling of 3,000 meters (9,840 feet)

The HDMI Pure Fiber Optic Extender is expected to function for more than 50,000 hours of use at a 90% confidence level. The device is tested according to the identical standards for testing LCD monitors.

Main Features

High Quality Picture - No Signal Loss and Digital Noise Free
Our OBHD is built to deliver the highest quality picture preserving the native resolutions of the video sources without any signal loss. At the same time, the digital noises that may affect the picture quality will be eliminated. Due to the nature of the digital signals and passing through multiple stack of connection, it is important to eliminate the digital noises and boost the signal strength to preserve/enhance the video signal quality.

Signal Amplification for signal reliability and long length signal transmission.
OBHD gets internal or external DC 12V power to run an internal chipset, which was designed to transmit high quality visual signal to long distance. It has a specialized chipset on input and out port for long distance application, allowing HDMI cable up to 15m.

Compact and Practical Design
● The OBHD is designed compactly and practically allowing customers more ease and convenience

Long distance signal transmission over fiber optic cable
● HDMI signal can be transmitted minimum 500m (1640ft) to maximum 1000m (3280ft) over multimode fiber optic cable without signal loss

HDCP (High-bandwidth Digital Content Protection)
● OBHD fully supports HDCP
● Currently every digital visual product sends high resolution signal with HDCP signal. You cannot see the picture if the product is not compatible with HDCP.

Compliance to HDMI Ver 1.3a
● OBHD fully supports the latest HDMI Ver 1.3a
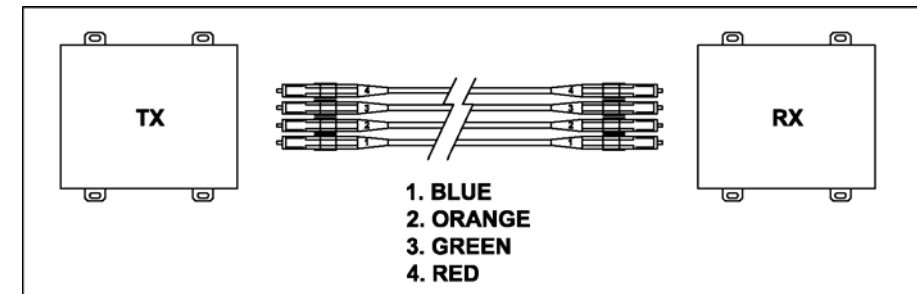
Video Connection

Step 1: Ensure the digital video/audio source and display is turned off
Step 2: Connect the digital HDMI cable and fiber optic cable to OBHD module
Step 3: Connect power adapter to the transmitter (TX/RX) module of OBHD
Step 4: Connect power code to the power adapter and plug in to power outlet
Step 5: Power up the display
Step 6: Power up the source

EDID data saving
Step 1: Connect HDMI Input port on OBHD **TX** unit to display such monitor or HDTV
Step 2: Push EDID S/W for 3~4 seconds
Step 3: EDID LED is illuminated for about 2 second if EDID was saved correctly

● If EDID was not saved correctly, EDID LED blinks 6 times. The default EDID when it is shipped is full HD 1920x1080p.
● EDID saving is to display the best resolution between the video source and the display

Connection of fiber optic cable

1. BLUE
2. ORANGE
3. GREEN
4. RED