

HDMI Over Fiber EXTENDER
B-700-EXT-1K-RS

BINARY

INSTALLATION MANUAL



IMPORTANT SAFETY INSTRUCTIONS

To reduce the risk of fire or electric shock, read and follow all instructions and warnings in this manual. Keep this manual for future reference.

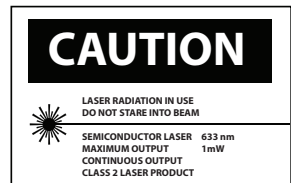
1. Do not expose this apparatus to rain or moisture. Do not expose this equipment to dripping or splashing, and ensure that no objects filled with liquids are placed on the equipment. Do not use this apparatus near water.
2. Do not remove cover. No user serviceable parts inside.
3. Clean only with a dry cloth.
4. Do not block any ventilation openings. Install according to manufacturer's instructions.
5. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
6. Do not override the safety purpose of the polarized or grounding plug. A polarized plug has two blades, one of which is wider than the other. A grounding plug has two matching blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
7. Protect the power cord from being walked on or pinched, particularly at the plug end and where the power cord is attached to the apparatus.
8. Only use attachments and accessories specified by the manufacturer.
9. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power supply cord or plug is damaged, liquid has been spilled on or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, the apparatus does not operate normally, or it has been dropped.
10. To completely disconnect this equipment from power, disconnect the power supply cord from the power outlet.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



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1. PRODUCT OVERVIEW

This device extends HDMI over a single fiber cable using fiber optic technology allowing video and audio transmission to remote displays. In addition, the device is equipped with bidirectional IR and RS-232 over the same fiber cable.

This unit supports all HDMI defined audio and video formats up to 1080p at 60Hz.

2. FEATURES

- Extends video up to 1000 ft over single mode optical fiber
- Supports all HDMI supported audio formats, including Dolby Digital and DTS
- Bidirectional IR and RS-232

3. PACKAGE CONTENTS

- 1x B-700-EXT-1K-RS Transmitter
- 1x B-700-EXT-1K-RS Receiver
- 2x 12V DC, 2A Power Supply
- 4x Mounting Ears
- 4x Mounting Screws
- 8x Rubber Feet
- 1x Installation Manual
- 2x Power Supply Label
- 2x Fiber Optic Labels

4. DEVICE LAYOUT

4.1. Transmitter

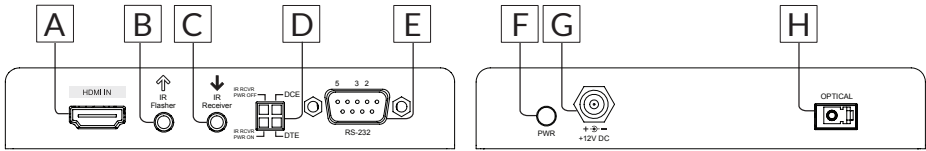


FIGURE 1: Transmitter Layout

A. HDMI In

HDMI input to connect to the HDMI output of a source

B. IR Flasher

IR output to connect to IR Flasher

C. IR Receiver

IR input to connect to IR Receiver or to output of a control system

D. DIP Switches

IR RCVR PWR OFF/ON

OFF to connect to control system | ON to connect to IR Receiver

DCE/DTE

To select if serial (RS232) communication via DB-9 is in DTE or DCE mode

E. RS-232

To communicate RS-232 command with the receiver when connected to a control system

F. Link/Power LED

Solid when optical fiber link has been established between Transmitter and Receiver; Blinks when unit has power without fiber link

G. Thread-locking Power Connector

Connect to the included 12V DC, 2A power supply

H. Fiber Optic (LC)

To connect fiber optic cable with LC connector

4.2. Receiver

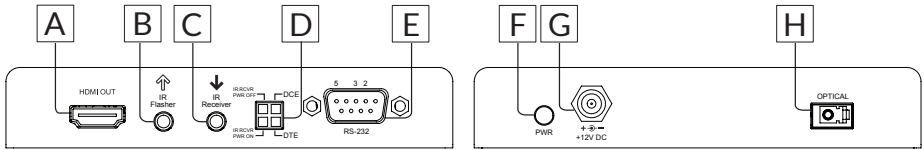


FIGURE 2: Receiver Layout

A. HDMI Out

HDMI Output to connect to a sink (display)

B. IR Flasher

IR output to connect to IR Flasher

C. IR Receiver

IR input to connect to IR Receiver or to output of a control system

D. DIP Switches

IR RCVR PWR OFF/ON

OFF to connect to control system | ON to connect to IR Receiver

DCE/DTE

To select if serial (RS232) communication via DB-9 is in DTE or DCE mode

E. RS-232

To communicate RS-232 command with the receiver when connected to a control system

F. Link/Power LED

Solid when optical fiber link has been established between Transmitter and Receiver; Blinks when unit has power without fiber link

G. Thread-locking Power Connector

Connect to the included 12V DC, 2A power supply

H. Fiber Optic (LC)

To connect fiber optic cable with LC connector

5. INSTALLATION

5.1. Transmitter Installation

⚠CAUTION: DO NOT connect power to the device until all other connections are made and the unit is installed.

1. Run fiber cable from the location of the transmitter to the remote location of the receiver.
2. Mount the transmitter in the desired location.
3. Connect an HDMI cable from HDMI Out of source component into HDMI In on transmitter.
4. Connect the RS-232 DB-9 from a control system if being used.
5. Connect an IR control system to the IR receiver and/or IR flasher if being used. Refer to Section 6.2.

6. Connect the fiber cable to the device transmitter, removing dust cap from Fiber Optic (LC) output. Store dust cap in a safe location to preserve the integrity of the output.
7. Connect the 12V DC, 2A power supply to the thread-locking power connector.

5.2. Receiver Installation

1. Run fiber cable from the location of the transmitter to the remote location of the receiver.
2. Mount the receiver in the desired location.
3. Connect the fiber cable to the device receiver, removing dust cap from Fiber Optic (LC) input. Store dust cap in a safe, accessible location to preserve the integrity of the input.
4. Connect an IR flasher and/or IR receiver if being used. Refer to Section 6.2.
5. Connect an HDMI cable from HDMI In of display into HDMI Out on receiver.
6. Connect the RS-232 DB9 to an RS-232 controllable source if being used.
7. Connect the 12V DC, 2A power supply to the thread-locking power connector.

6. APPLICATIONS

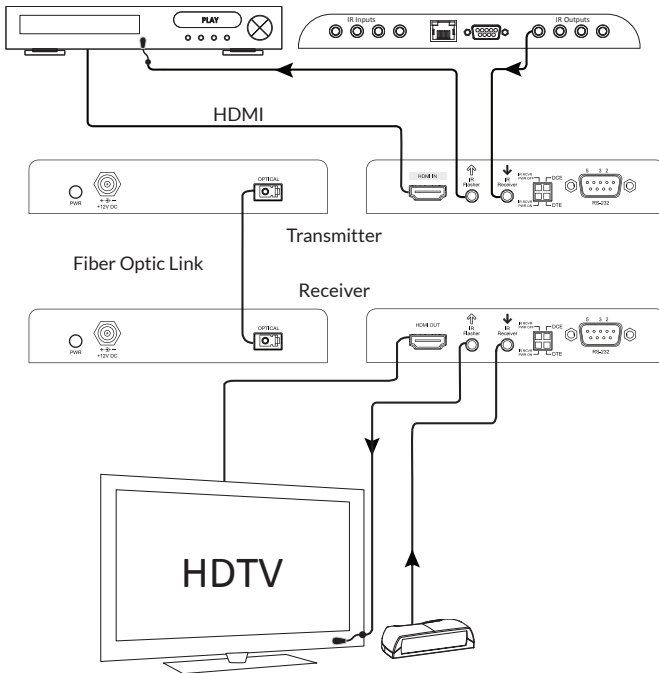


FIGURE 3: Application Diagram

6.1. Fiber Optic Link (LC) Connection

This extender pair is specified to operate with single mode fiber cables for communication between the transmitter and receiver. The maximum specified fiber cable length is 1000 feet.

6.2. IR Control Connections

Bidirectional IR signals can be transmitted between transmitter and receiver through fiber cable. The IR signal can be generated either from a powered receiver or from a control system. The following section describes these two use cases.

CAUTION: Pinout configurations for IR receivers and control systems vary. Before connecting to this input, review this section carefully in order to match the pinouts for the device.

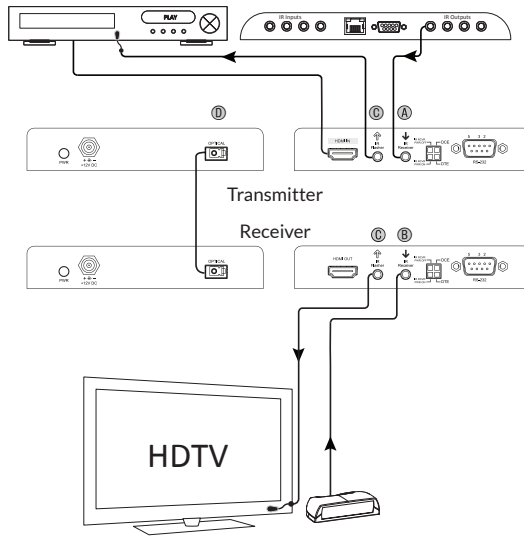


FIGURE 4: IR Connections

Note: Arrow direction indicates signal flow.

- Ⓐ IR Receiver In-3.5 mm Mono—See Section 6.2.2
- Ⓑ IR Receiver In-3.5 mm Stereo—See Section 6.2.1
- Ⓒ IR Flasher Out-3.5 mm Mono—See Section 6.2.3
- Ⓓ Fiber Optic Link fiber cable (LC)—See Section 6.1

6.2.1. Point-to-Point IR Control - Stereo (3.5mm) IR Receiver

When using a powered IR receiver, the DIP switch for IR RCVR PWR should be set to ON. In this case a 3.5mm (1/8") stereo jack has to be used to send 9V DC power to the receiver.

CAUTION: DO NOT connect a mono cable to this connection as damage may occur.

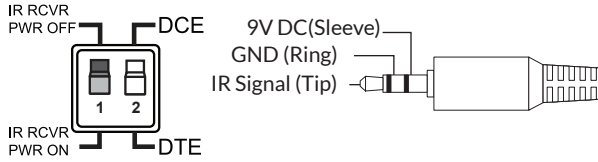


FIGURE 5: Point-to-Point IR settings

6.2.2. Control System - Mono (3.5mm) IR Receiver

When using a control system which generates the signal through a mono jack, the IR RCVR PWR switch should be in the OFF position.



FIGURE 6 : Control System IR settings

6.2.3. IR Flasher Out-3.5mm Mono - Transmitter and Receiver

The IR Flasher level adjusts the intensity of the IR Flasher output

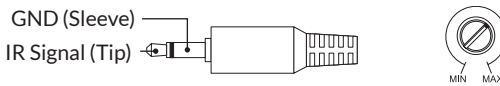


FIGURE 7: IR Flasher Out

6.3. RS-232 Control Connections

Bidirectional RS-232 signals are transmitted between the device transmitter and receiver over the fiber cable. The transmitter may be connected to a control system, and the receiver may be connected to an RS-232 controllable device.

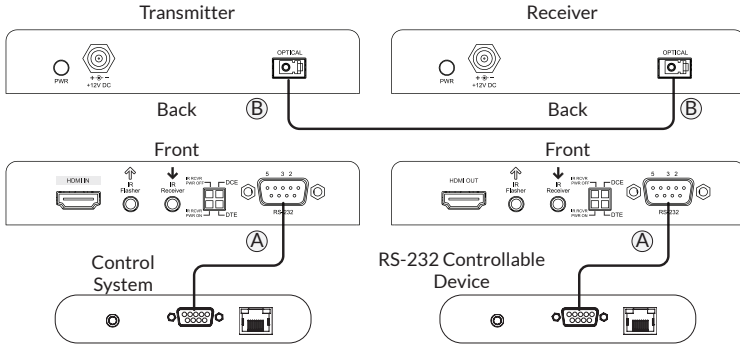


FIGURE 8: RS-232 Connections

- Ⓐ RS-232 Control (DB-9)- See Section 6.3.1
- Ⓑ Fiber Optic Link category - See Section 6.1

6.3.1. RS-232 Control (DB-9) Connection

To eliminate the need to make crossover or null modem cables, the RS-232 pinouts can be configured for DCE or DTE. Set switch 2 to DTE if the connected device is DTE, and to DCE if the connected device is DCE.

Typically the control system will be DTE and the controlled device will be DCE, however, devices may vary. Refer to the manual for the connected devices for proper pinout configuration.

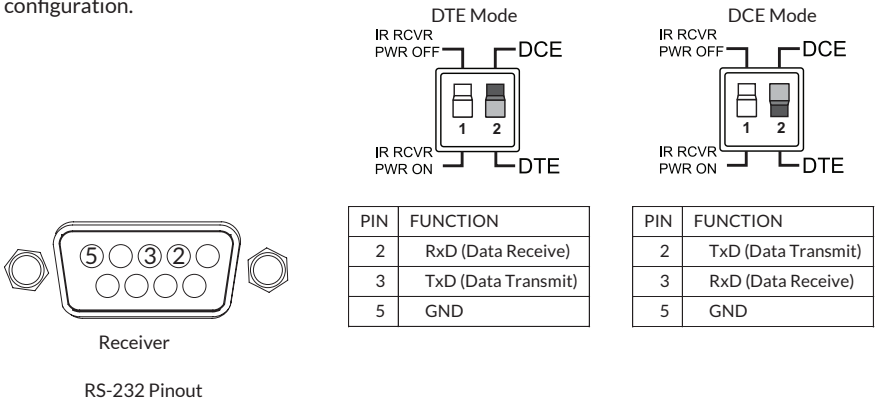


FIGURE 9: RS-232 Modes and Connections

7. SPECIFICATIONS

Technical		
HDMI Compliance	HDMI 3D	
HDCP Compliance	Yes	
Video Bandwidth	6.75 Gbps	
B-700-EXT-1K-RS HDMI over Fiber Transmission	Optical Fiber (LC Connector)	1080i/720p 24-bit color: 1000' Full HD 1080p 24-bit color: 1000' Full HD 1080p 36-bit color: 1000'
Input TMDS Signal	1.2V (peak-to-peak)	
Input DDC Signal	5V (peak-to-peak, TTL)	
ESD Protection	(1) Human body model: ±5kV (air-gap discharge) & ±8kV (contact discharge) (2) Core chipset – ±8kV	
IR Signal (Bidirectional)	Carrier frequency: 20–60kHz	

Connections	
Fiber Link	2x LC Connector
HDMI	2x HDMI Type A (19-pin female)
IR Receiver (In)	2x 3.5mm Mono/Stereo
IR Flasher (Out)	2x 3.5mm Mono
Power	Thread-Locking
RS-232	2x DB-9

Controls	
DIP switch 1	IR RCVR PWR OFF/ON
DIP switch 2	DTE/DCE

Mechanical	
Housing	Metal enclosure
Dimensions	6.25" x 3.1" x 1.3"
Weight	1.1 lbs.
Power Supply	12V DC, 2A
Power Consumption	12W (max)
Operation Temperature	32–104°F
Storage Temperature	-4–140°F
Relative Humidity	20–90% RH (no condensation)
Certifications and Compliance	Product: CE, FCC, RoHS Power Supply: CE, FCC, RoHS, UL

8. SUPPORT

866.838.5052

For SnapAV customers, snapav.com

For Aisle 8 customers, onaisle8.com

9. WARRANTY

2-Year Limited Warranty

This Binary product has a 2-year limited warranty. This warranty includes parts and labor repairs on all components found to be defective in material or workmanship under normal conditions of use. This warranty shall not apply to products that have been abused, modified or disassembled. Products to be repaired under this warranty must be returned to SnapAV or a designated service center with prior notification and an assigned return authorization number (RA).

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