

HDBaseT RECEIVER  
B-540-RX-330-IR

**BINARY**

INSTALLATION  
MANUAL



FC CE

## 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, such as vases, are placed on the equipment. Do not use this apparatus near water.
2. Do not remove cover.
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.



## CONTENTS

1. Product Overview .....	4
2. Features.....	4
3. Package Contents.....	4
4. Device Layout.....	5
4.1. B-540-RX-330-IR Receiver.....	5
5. Installation.....	6
5.1. B-540-RX-330-IR Receiver Installation .....	6
6. Applications .....	6
6.1. HDBaseT Link (RJ45) Connection .....	7
6.2. IR Control Connections.....	7
6.2.1. Point-to-Point IR Control - Stereo (3.5mm) IR Receiver .....	9
6.2.2. Control System - Mono (3.5mm) IR Receiver.....	9
6.3. Firmware Update Operation .....	9
6.4. Thread-Locking Power Supply.....	9
7. Specifications .....	10
8. Support .....	11
9. Warranty.....	11

## 1. PRODUCT OVERVIEW

Welcome to Binary™. This product is engineered to provide years of exceptional reliability. We appreciate your business, and we stand committed to providing our customers with the highest degree of quality and service in the industry.

This device extends HDMI over a single category cable using HDBaseT technology allowing video and audio transmission to remote displays. In addition, the device is equipped with bidirectional IR over the same category cable up to 330 feet.

This unit supports all HDMI defined audio and video formats, up to 4K2K@30 Hz and is compatible with HDMI 2.0 and HDCP 2.2 products.

## 2. FEATURES

- Extends all HDMI formats up to:

Resolution	Cat 5e/6	Cat 6a/7
1080i/720p 24-bit color	330'	330'
Full HD 1080p 24-bit color	330'	330'
Full HD 1080p 36-bit color	330'	330'
Ultra HD 4K2K@30 Hz (4:4:4)	230'	330'
Ultra HD 4K2K@60 Hz (4:2:0)	230'	330'

- Supports all HDMI supported audio formats, including DTS-HD Master and Dolby TrueHD
- Bidirectional IR

## 3. PACKAGE CONTENTS

- 1x B-540-RX-330-IR Receiver
- 2x Mounting Ears
- 2x Mounting Screws
- 4x Rubber Feet
- 1x Installation Manual
- 1x HDBaseT Label
- 1x 12V DC, 2A Power Supply
- 1x Power Supply Label

## 4. DEVICE LAYOUT

### 4.1. B-540-RX-330-IR Receiver

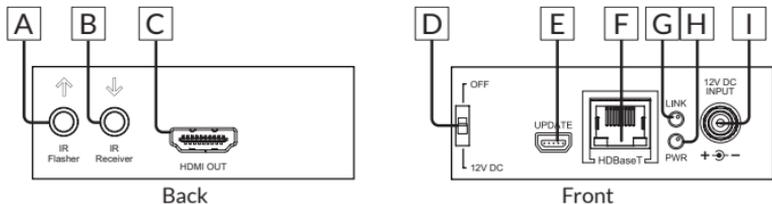


FIGURE 1: Receiver Layout

- A. IR Flasher**  
IR output to connect to IR Flasher
- B. IR Receiver**  
IR input to connect to IR Receiver or to output of a control system
- C. HDMI Out**  
HDMI Output to connect to the HDMI input of a sink (display)
- D. DIP Switch**  
**IR RCVR PWR OFF/ON**  
OFF to connect to control system | ON to connect to IR receiver
- E. Update (USB type Mini-B)**  
To connect USB cable A to Mini-B when updating firmware
- F. HDBaseT (RJ45)**  
To connect to the HDBaseT RJ45 port on HDBaseT transmitter
- G. Link LED**  
Lights up green when synced with a transmitter
- H. Power LED**  
Lights up blue when the unit has power
- I. Thread-locking Power Connector**  
Connect to A 12V DC, 2A power supply

## 5. INSTALLATION

**⚠CAUTION:** Do not connect power to the device until all other connections are made and the unit is installed.

### 5.1. B-540-RX-330-IR Receiver Installation

1. Run Category cable from the location of the transmitter to the remote location of the receiver.
2. Mount receiver in the desired location.
3. Connect the Category cable to the receiver's HDBaseT RJ45 port.
4. Connect an IR flasher and/or IR receiver if being used. Refer to Section 6.2.
5. Connect an HDMI cable from HDMI Out of receiver to the display.
6. Connect the 12V DC, 2A power supply to the thread-locking power jack. **Do not** plug the power supply into an AC outlet until transmitter installation is completed.

## 6. APPLICATIONS

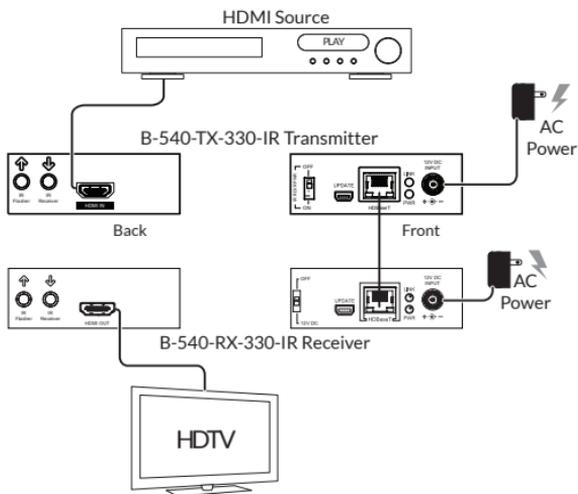


FIGURE 2 : Application Diagram

## 6.1. HDBaseT Link (RJ45) Connection

This device is specified to operate with Category cables for communication between the transmitter and receiver. The transmission path may include a maximum of two keystones and two patch cables, as long as the total length does not exceed 330' for Cat5e/6/6a/7 when used with an HDBaseT transmitter.

TIA/EIA Standard 568-B (Gold Pins Facing Up)

Pin 1	White/Orange	Pin 5	White/Blue
Pin 2	Orange	Pin 6	Green
Pin 3	White/Green	Pin 7	White/Brown
Pin 4	Blue	Pin 8	Brown



FIGURE 3: RJ45 Connections

## 6.2. IR Control Connections

Bidirectional IR signals can be transmitted between the receiver and an HDBaseT transmitter through category 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.

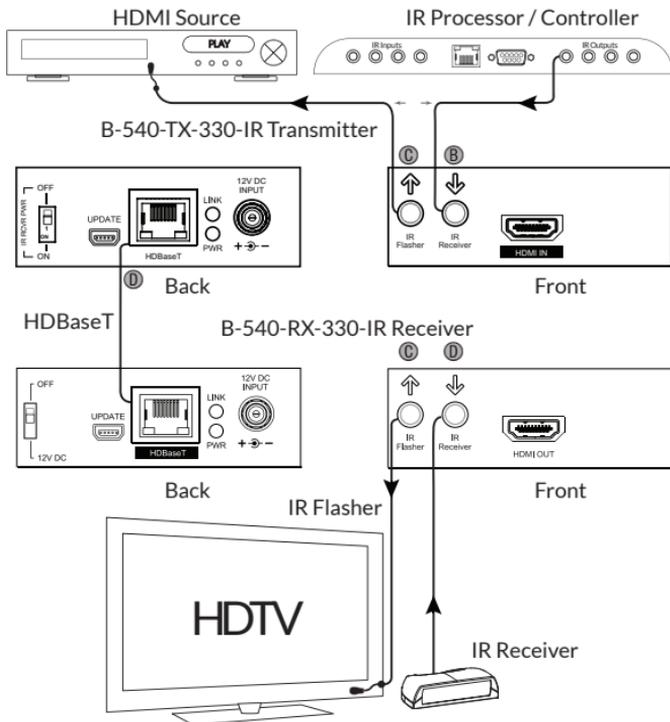


FIGURE 4: IR Connections

**Note:** Arrow direction indicates signal flow.

- Ⓐ IR Receiver In-3.5 mm Stereo—See Section 6.2.1
- Ⓑ IR Receiver In-3.5 mm Mono—See Section 6.2.2
- Ⓒ IR Flasher Out-3.5 mm Mono—See Section 6.2.3
- Ⓓ HDBaseT Link (RJ45)—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.

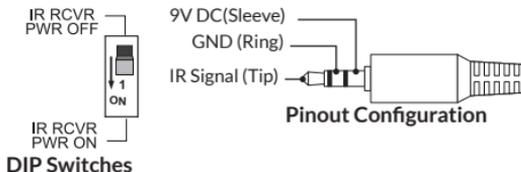


FIGURE 6: Point-to-Point IR settings

### 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.

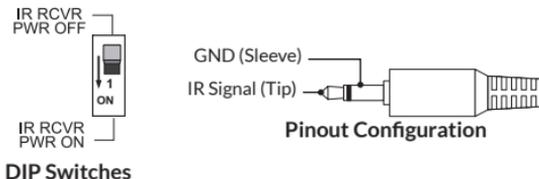


FIGURE 7: Control System IR settings

## 6.3. Firmware Update Operation

Detailed instructions and updated firmware will be posted to the product support page as they are released.

## 6.4. Thread-Locking Power Supply

This receiver is powered by the included power supply.

**⚠CAUTION: Do not** connect the power supply to the device until it is completely installed and all connections have been made.

**⚠CAUTION: Do not** connect a third party power supply to the device unless the voltage and amperage matches the power supply provided with the receiver.

## 7. SPECIFICATIONS

Technical	
HDMI Compliance	HDMI 3D
HDCP Compliance	Yes
Video Bandwidth	10.2 Gbps
B-540-RX-330-IR HDMI over UTP Transmission	1080i/720p 24-bit color: 330' (Cat 5e/6/6a/7) Full HD 1080p 24-bit color: 330' (Cat 5e/6/6a/7) Full HD 1080p 36-bit color: 330' (Cat 5e/6/6a/7) Ultra HD 4K2K@30 Hz (4:4:4:) 230 ft (Cat 5e/6), 330 ft (Cat 6a/7) Ultra HD 4K2K@60 Hz (4:2:0:) 230 ft (Cat 5e/6), 330 ft (Cat 6a/7)
Input TMDs Signal	1.2V (peak-to-peak)
Input DDC Signal	5V (peak-to-peak, TTL)
ESD Protection	(1) Human body model: $\pm 5\text{kV}$ (air-gap discharge) & $\pm 8\text{kV}$ (contact discharge) (2) Core chipset – $\pm 8\text{kV}$
IR Signal (Bidirectional)	Carrier frequency: 20–60kHz
Connections	
HDBaseT Link	1x RJ45
HDMI	1x HDMI Type A (19-pin female)
IR Receiver (In)	1x 3.5mm Mono/Stereo
IR Flasher (Out)	1x 3.5mm Mono
Power	Thread-Locking
Controls	
DIP switch 1	IR RCVR PWR OFF/ON
Mechanical	
Housing	Metal enclosure
Dimensions	6.25"x3.1"x1.3"
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

Phone: 866.838.5052

For SnapAV customers, [snapav.com](http://snapav.com)

For Aisle 8 customers, [onaisle8.com](http://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).

# BINARY

Rev: 160901-0420 | A6 Booklet fold  
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