

# HDMI® over Cat 5e/6 Extender - 50m

ST121SHD50



\*actual product may vary from photos

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## FCC Compliance Statement

This equipment 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 residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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# Product Diagram

## Top View

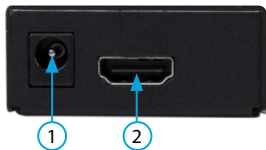


1. LED Indicator
2. EDID Copy Button

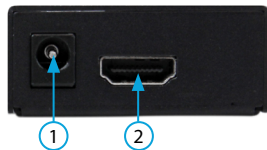


1. LED Indicator
2. EQ Selector

## Rear View

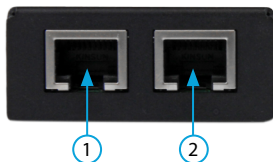


1. Power Jack
2. HDMI In

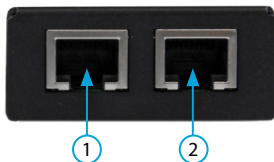


1. Power Jack
2. HDMI Out

## Front View



1. LINK OUT A (RJ-45 Connector)
2. LINK OUT B (RJ-45 Connector)



1. LINK IN A (RJ-45 Connector)
2. LINK IN B (RJ-45 Connector)

# Introduction

The ST121SHD50 HDMI® over CAT5e/6 Video Extender kit lets you extend HDMI® video and audio up to 165 feet (50 Meters)(1080i) over 2 CAT5e Ethernet cables, or up to 130 Feet (40 Meters)(1080p) over 2 CAT6 Ethernet cables. For added versatility both the Transmitter and Receiver can be powered by the same single power source using Power Over Cable (POC).

With support for resolutions up to 1920x1080 and the accompanying digital audio, this HDMI® extender is a plug-and-play solution that can easily be installed using new or existing Ethernet infrastructure wiring.

Backed by a StarTech.com 2-year warranty and free lifetime technical support.

## Packaging Contents

- 1x HDMI® over CAT5e/6 UTP Transmitter
- 1x HDMI® over CAT5e/6 UTP Receiver
- 1x Universal Power Adapter (EU, UK, NA)
- 2x Mounting Brackets
- 2x Foot Pad Set
- 1x User Manual

## System Requirements

- HDMI® enabled video source device (i.e. computer, Blu-ray Player)
- HDMI® enabled display device (i.e. television, projector)
- Available AC electrical outlet for either the transmitter or receiver
- HDMI® cables for Receiver and Transmitter

# LED Indicator

Status	Transmitter
DVI EDID content configured	*Emit blue with green flashing twice
HDMI EDID content configured	*Emit blue with green flashing three times
HDCP syncing	**Purple
Status	Receiver
Video Linking	***Steady Blue
Video unlinking	Steady Red

\*It is suggested replacing cables with better quality ones if the LED emits blue without video displaying.

\*\*The emitting period of purple LED depends on connected device.

\*\*\*The LED emits steady blue indicating that the video signal is detected by Receiver.

# Installation

## Preparing Your Site

1. Determine where the local video source (i.e. computer, Blu-ray Player) will be located and set up the device.
2. Determine where the remote display will be located and place/ mount the display appropriately.

**NOTE:** This HDMI® extender kit features Power over cable, allowing both the Transmitter and Receiver to be powered from a single power source that can be connected at either end of the connection. Please ensure that either the Transmitter or the Receiver Unit is situated near an available AC electrical outlet. Make sure all devices are turned off before beginning installation.

## Hardware Installation

1. Install Transmitter Unit
  - a) Position the Transmitter Unit near the video source (i.e. Computer, Blu-ray Player).
  - b) Connect an HDMI® cable from the video source device (i.e. computer, Blu-ray Player) to the "HDMI® IN" on the Transmitter Unit.
  - c) **(Optional)** If you've chosen to power the kit from the Transmitter side, connect the provided power supply.
2. Install RJ45 terminated Cat5e/6 Ethernet Cables
  - a) Connect an RJ45 terminated Cat5e/6 Ethernet cable (not included) to the LINK OUT A (RJ-45 connector) on the Transmitter unit.
  - b) Connect another RJ45 terminated Cat5e/6 Ethernet cable (not included) to the LINK OUT B (RJ-45 connector) on the Transmitter unit.

### NOTE:

If you are using surface cabling, ensure you have enough Category 5e unshielded twisted pair (UTP) network cabling to connect the Host Unit to the Remote Unit's location, and that each end is terminated with a RJ45 connector. The cabling should not go through any networking equipment (i.e. router, switch).

### OR

If you are using premises cabling, ensure that the Category 5 unshielded twisted pair (UTP) network cabling between the Host Unit and the Remote Unit has been properly terminated in a wall outlet in each location and there is a patch cable long enough to connect the Remote Unit and the Host Unit to their respective outlets. The cabling should not go through any networking equipment (i.e. router, switch).

- c) Connect the other end of the Cat5e/6 cable (from LINK OUT A) to the LINK IN A (RJ-45 connector) on the Receiver Unit.
- d) Connect the other end of the Cat5e/6 cable (from LINK OUT B) to the LINK IN B (RJ-45 connector) on the Receiver Unit.

**NOTE:** If using Cat6 cables, extension distance is limited to 40m (130 ft)

### 3. Install Receiver Unit

- a) Position the Receiver Unit near the video display (i.e. television, projector).
- b) Connect the video source to the HDMI® OUT on the Receiver Unit using an HDMI® cable.
- c) **(Optional)** If you've chosen to power the kit from the Receiver side, connect the provided power supply.

4. Your source video image will now appear on the remote video display.

## Operation

### Video Adjustment (Receiver Unit Only)

This function allows adjustments in sharpness of the video image for better clarity. If necessary, adjust the EQ Selector at the Receiver Unit to compensate cable length. Turn the EQ Selector one notch at one time and wait for 10~12 sec. For HDMI cable length (Rx-to-monitor) less than 8 meters, the selector position is around 0~7 (depends on video resolution). For HDMI cable length (Rx-to-monitor) greater than 8 meters, the selector position is around 8, 9, A~F (depends on video resolution). For example, if using a 1.8M (or 3.0M) HDMI cable, a CAT5 cable and a display with resolution of Full HD (1920 x 1080), you may adjust video according to its CAT5 cable length as following.

CAT5 Cable Length	EQ Selector Position
0M~15M	0,1
15M~25M	1,2
25M~30M	2,3



The following is the test result while using different types of CATx cables

Cable Type	Resolution	Cable Length (max.)
CAT6	1080i	50M
	1080p	40M
CAT5 (solid)	1080i	50M
	1080p	20M
CAT5 (stranded)	1080i	40M
	1080p	16M

## EDID Configuration

In some cases display problems may occur due to incorrect EDID communication between the display monitor and the unit or inappropriate EDID data programmed by display manufactures. This EDID Copy feature allows the system either automatically provide the necessary EDID to display or manually copy EDID from EDID compliant displays via push button.

### Auto EDID Configuration

The system can automatically read EDID from your display while two RJ-45 ports (Video & Aux) are in connection.

#### Manual EDID Configuration (EDID Copy / EDID Ghost)

While using only one CATx cable, it is suggested applying EDID Copy first.

**Step 1.** Use CATx cable for connection between Tx & Rx on Aux RJ-45 Jack. Apply power to Receiver Unit.

**Step 2.** Connect the monitor (EDID compliant) to Video Out on the Receiver Unit and power on the monitor.

**Step 3.** Press the button "EDID Copy" on Transmitter Unit and release the button RIGHT AFTER the LED flashes green.

**Step 4.** The LED flashes green & red and then it lights blue indicating copy successfully. Otherwise, if the LED flashes RED, it means that

- The monitor is not properly connected.
  - The monitor is not powered on.
  - EDID data of the monitor is not applicable.
- Try to repeat Step 3 to 4 again.

## EDID Factory Default Setting

To avoid confusion in which EDID information has been copied or for more purposes, this function enables to reset the state to factory default.

**Step 1.** Use CATx cable for connection between Tx & Rx on Aux RJ-45 Jack. Apply power to Receiver Unit.

**Step 2.** Press the button “EDID Copy” and release the button RIGHT AFTER the LED flashes red.

**Step 3.** The LED flashes green & red indicating default setting successfully.

## DDC Pass Mode

Press the button for more than 15 sec. and release right after the LED flashes green. The LED lights blue indicating setting successfully. To exit this mode, follow “EDID Factory Default Setting” steps.

# Specifications

<b>AV Input</b>	HDMI®
<b>AV Output</b>	HDMI®
<b>Cabling</b>	Cat 5e/6 UTP
<b>Audio</b>	Yes
<b>Local Unit Connectors</b>	1x HDMI® (19 pin) Female 2x RJ-45 Female
<b>Remote Unit Connectors</b>	1x HDMI® (19 pin) Female 2x RJ-45 Female
<b>Maximum Data Transfer Rate</b>	HDMI® - 1.656Gbps
<b>Max Distance</b>	50 m / 165 ft(1080i)
<b>Maximum Digital Resolutions</b>	1080p @ 60Hz, 24-bit
<b>Wide Screen Supported</b>	Yes
<b>Audio Specifications</b>	Supports Dolby® TrueHD, DTS-HD MA
<b>Input Voltage</b>	110 ~ 240V AC
<b>Input Current</b>	0.5 A
<b>Output Voltage</b>	12V DC
<b>Output Current</b>	1.5A

# Technical Support

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For the latest drivers/software, please visit [www.startech.com/downloads](http://www.startech.com/downloads)

## Warranty Information

This product is backed by a two year warranty.

In addition, StarTech.com warrants its products against defects in materials and workmanship for the periods noted, following the initial date of purchase. During this period, the products may be returned for repair, or replacement with equivalent products at our discretion. The warranty covers parts and labor costs only. StarTech.com does not warrant its products from defects or damages arising from misuse, abuse, alteration, or normal wear and tear.

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