

StarTech.com ST121HD20V

StarTech.com HDMI Over CAT6 Extender Kit - 4K 60Hz
(ST121HD20V) Instruction Manual

Model: ST121HD20V

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1. INTRODUCTION

The StarTech.com HDMI Over CAT6 Extender Kit (ST121HD20V) allows you to extend a 4K 60Hz HDMI signal up to 165 feet (50 meters) over a single CAT6 cable. This kit supports High Dynamic Range (HDR) and 4:4:4 chroma subsampling, ensuring crystal-clear picture quality. It is designed for reliable long-distance transmission and is compatible with HDCP 2.2 devices.

This manual provides detailed instructions for the proper installation, operation, and maintenance of your HDMI extender kit.

2. PACKAGE CONTENTS

Ensure all items are present in your package:

- 1 x HDMI over CAT6 Transmitter
- 1 x HDMI over CAT6 Receiver
- 1 x IR Blaster
- 1 x IR Receiver
- 1 x Quick-Start Guide
- 2 x Universal Power Adapters (NA/JP, EU, UK, ANZ)

3. PRODUCT OVERVIEW

The StarTech.com HDMI Over CAT6 Extender Kit consists of a Transmitter unit and a Receiver unit, designed to work together to extend your HDMI signal.

3.1. Transmitter Unit

The Transmitter unit connects to your HDMI source device (e.g., Blu-ray player, computer).



Image: Rear view of the HDMI over CAT6 Transmitter unit, showing a Micro-USB port, an IR Out port, and an RJ-45 port.

- **HDMI IN:** Connects to your HDMI source.
- **HDMI OUT (Local):** Provides a local HDMI output for a monitor near the source.
- **CAT6 OUT:** Connects to the Receiver unit via a CAT6 cable.
- **IR OUT:** Connects to the IR Blaster cable.
- **DC 12V:** Power input for the Transmitter unit.

3.2. Receiver Unit

The Receiver unit connects to your HDMI display device (e.g., TV, projector).



Image: Rear view of the HDMI over CAT6 Receiver unit, showing a Micro-USB port, an IR In port, and an RJ-45 port.

- **HDMI OUT:** Connects to your HDMI display.
- **CAT6 IN:** Connects to the Transmitter unit via a CAT6 cable.
- **IR IN:** Connects to the IR Receiver cable.
- **DC 12V:** Power input for the Receiver unit.



Image: Angled view of both the StarTech.com HDMI over CAT6 Extender Transmitter and Receiver units, showing their compact black design.

4. SETUP INSTRUCTIONS

Follow these steps to set up your HDMI over CAT6 Extender Kit:

1. **Power Off Devices:** Ensure all HDMI source devices and displays are powered off before making connections.

2. **Connect HDMI Source to Transmitter:** Connect an HDMI cable from your HDMI source (e.g., computer, Blu-ray player) to the **HDMI IN** port on the Transmitter unit.
3. **(Optional) Local HDMI Output:** If desired, connect an HDMI cable from the **HDMI OUT (Local)** port on the Transmitter unit to a local display.
4. **Connect CAT6 Cable:** Connect a single CAT6 Ethernet cable (up to 165 ft / 50 m) from the **CAT6 OUT** port on the Transmitter unit to the **CAT6 IN** port on the Receiver unit.
5. **Connect Receiver to Display:** Connect an HDMI cable from the **HDMI OUT** port on the Receiver unit to your remote HDMI display (e.g., TV, projector).
6. **(Optional) IR Control Setup:**
 - Connect the IR Blaster cable to the **IR OUT** port on the Transmitter unit. Position the IR Blaster emitter near the IR sensor of your source device.
 - Connect the IR Receiver cable to the **IR IN** port on the Receiver unit. Position the IR Receiver sensor in a location where it can receive signals from your remote control.
7. **Connect Power Adapters:** Connect one universal power adapter to the **DC 12V** port on the Transmitter unit and the other to the **DC 12V** port on the Receiver unit. Plug both power adapters into a power outlet.
8. **Power On Devices:** Power on your HDMI display(s) first, then power on your HDMI source device. The extender kit should automatically establish the connection.

Note: For optimal performance and to achieve 4K 60Hz resolution, use high-quality CAT6 cables and HDMI 2.0 compliant cables.

5. OPERATION

Once the setup is complete, the HDMI extender kit operates automatically. The Transmitter and Receiver units will establish a connection over the CAT6 cable, extending your HDMI signal to the remote display.

- **Signal Transmission:** The kit transmits video resolutions up to 3840x2160 (4K) at 60Hz, supporting HDR and 4:4:4 chroma subsampling.
- **Audio Support:** The extender supports 7.1 Surround Sound audio.
- **IR Control:** If the IR Blaster and Receiver are connected, you can use your source device's remote control from the remote display location to control the source device.
- **HDCP Compliance:** The kit is HDCP 2.2 compliant, ensuring compatibility with protected content from Blu-ray players and streaming devices.

6. MAINTENANCE

The StarTech.com HDMI Over CAT6 Extender Kit requires minimal maintenance. Follow these guidelines to ensure longevity and optimal performance:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the units. Do not use liquid cleaners or aerosol sprays.
- **Ventilation:** Ensure the units have adequate ventilation to prevent overheating. Do not block the ventilation slots.
- **Environment:** Operate the device within the specified environmental conditions (Operating Temperature: 0°C to 40°C; Humidity: 0% - 80% RH non-condensing).
- **Cable Management:** Ensure all cables are securely connected and not under excessive strain. Avoid sharp bends in cables.

7. TROUBLESHOOTING

If you experience issues with your HDMI extender kit, refer to the following troubleshooting steps:

7.1. No Video or Poor Picture Quality

- **Check Connections:** Ensure all HDMI and CAT6 cables are securely connected to both the Transmitter and Receiver units, and to the source and display devices.
- **Power Cycle:** Disconnect power from both the Transmitter and Receiver units, then reconnect after a few seconds. Also, power cycle your source and display devices.
- **Cable Quality:** Verify that you are using a high-quality CAT6 cable. Lower quality or damaged cables can cause signal degradation or loss.
- **Cable Length:** Ensure the CAT6 cable length does not exceed the maximum recommended distance of 165 ft (50 m).
- **HDMI Cable Version:** For 4K 60Hz and HDR, ensure your HDMI cables are HDMI 2.0 compliant.
- **Resolution Compatibility:** Confirm that your display supports the output resolution of your source device. Try lowering the source resolution to see if a picture appears.
- **HDCP Issues:** If you are playing protected content and experience issues, ensure both your source and display are HDCP 2.2 compliant.

7.2. No Audio

- **Check Audio Settings:** Verify the audio output settings on your source device and the audio input settings on your display or audio receiver.
- **HDMI Cable:** Ensure the HDMI cables are functioning correctly and support audio transmission.

7.3. IR Control Not Working

- **IR Cable Connections:** Ensure the IR Blaster is connected to the Transmitter's**IR OUT** port and the IR Receiver to the Receiver's **IR IN** port.
- **Sensor Placement:** Verify that the IR Blaster emitter is directly over or very close to the IR sensor of the source device. Ensure the IR Receiver sensor has a clear line of sight to your remote control.
- **Remote Control:** Test your remote control directly with the source device to ensure it is functioning correctly.

8. SPECIFICATIONS

Category	Specification
Model Number	ST121HD20V
Brand	StarTech.com
AV Input	HDMI
AV Output	HDMI
Cabling	Cat 6 UTP
Maximum Cable Length	165.0 ft (50.3 m)
Maximum Digital Resolutions	3840 x 2160 (4K) @ 60 Hz

Category	Specification
Supported Resolutions	3840x2160 (4K) 60Hz, 2560x1600 60Hz, 1920x1200 60Hz, 1920x1080 (1080p) 60Hz, 1280x720 (720p) 60Hz
Wide Screen Supported	Yes
Audio Specifications	7.1 Surround Sound
HDCP Compliance	HDCP 2.2 (backward compatible)
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-20°C to 60°C (4°F to 140°F)
Humidity	0% - 80% RH (non-condensing)
Product Dimensions (L x W x H)	3.8 in [97.0 mm] x 2.8 in [70.0 mm] x 0.5 in [1.3 cm]
Product Weight	5.5 oz [156.0 g]
Color	Black
Power Source	AC Adapter Included
Input Voltage	110V-240V AC
Output Voltage	12V DC
Output Current	1A
Center Tip Polarity	Positive
Certifications	CE, FCC, REACH

9. WARRANTY INFORMATION

This StarTech.com product is backed by a **2-year warranty**. For detailed warranty terms and conditions, please refer to the official StarTech.com website or the warranty card included with your product.

10. TECHNICAL SUPPORT

StarTech.com offers free lifetime technical support for this product. If you encounter any issues or require assistance, please visit the StarTech.com support website or contact their technical support team directly.

Website: www.startech.com/support

For the most up-to-date information, drivers, and manuals, please visit the product page on the StarTech.com website.

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