

## Dual HDMI over CAT5e/CAT6 Extender - 1080p



*Actual product may vary from photos*

### User Manual

SKU#: ST222HDBT

# Compliance Statements

## 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

## Industry Canada Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

CAN ICES-3 (B)/NMB-3(B)

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# Safety Statements

## Safety Measures

- Wiring terminations should not be made with the product and/or electric lines under power.
- Product installation and/or mounting should be completed by a certified professional as per the local safety and building code guidelines.
- Cables (including power and charging cables) should be placed and routed to avoid creating electric, tripping or safety hazards.

## Mesures de sécurité

- Les terminaisons de câblage ne doivent pas être effectuées lorsque le produit et/ou les câbles électriques sont sous tension.
- L'installation et/ou le montage du produit doit être réalisé par un professionnel certifié et dans le respect des normes locales et du code de construction local.
- Les câbles (y compris les câbles d'alimentation et de chargement) doivent être placés et acheminés de façon à éviter tout risque électrique, de chute ou de sécurité

## 安全対策

- 電源が入っている状態の製品または電線の終端処理を行わないでください。
- 製品の設置やマウントは、使用地域の安全ガイドラインおよび建築基準に従い、有資格の専門業者が行うようにしてください。
- ケーブル（電源ケーブルと充電ケーブルを含む）は、適切な配置と引き回しを行い、電気障害やつまずきの危険性など、安全上のリスクを回避するようにしてください。

## Misure di sicurezza

- I terminali dei fili elettrici non devono essere realizzate con il prodotto e/o le linee elettriche sotto tensione.
- L'installazione e/o il montaggio dei prodotti devono essere eseguiti da un tecnico professionale certificato che conosca le linee guida locali sulle norme edilizie e sulla sicurezza.
- I cavi (inclusi i cavi di alimentazione e di ricarica) devono essere posizionati e stesi in modo da evitare pericoli di inciampo, rischi di scosse elettriche o pericoli per la sicurezza.

## Säkerhetsåtgärder

- Montering av kabelavslutningar får inte göras när produkten och/eller elledningarna är strömförda.
- Installation och/eller montering får endast göras av behöriga yrkespersoner och enligt gällande lokala förordningar för säkerhet och byggnormer.
- Kablar (inklusive elkablar och laddningskablar) ska dras och placeras på så sätt att risk för snubblingsolyckor och andra olyckor kan undvikas.

## Warning Statements

Make sure to assemble this product according to the instructions. Failure to do so might result in personal injury or property damage.

Never use this product if parts are missing or damaged.

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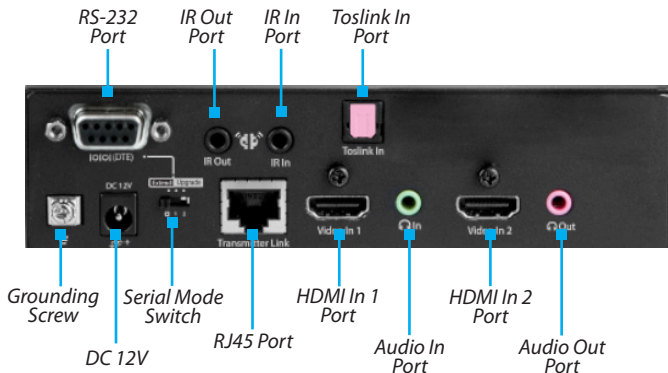
## Product Diagram

Actual product may vary from photos

### Transmitter Front



### Transmitter Back



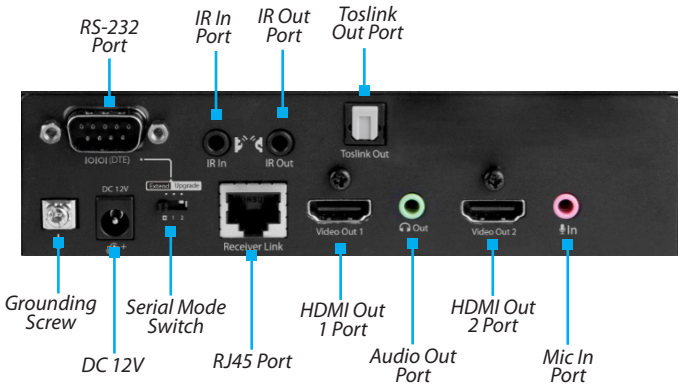
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## Receiver Front



## Receiver Back



## Product Information

### Package Contents

- HDMI Transmitter x 1
- HDMI Receiver x 1
- Universal Power Adapters (NA/JP, EU, UK, ANZ) x 2
- Set of Mounting Brackets x 2
- IR Blaster x 1
- IR Receiver x 1
- CAT5 Cable x 1
- Rubber Feet x 8
- User Manual x 1

### Requirements

For the latest requirements, please visit [www.startech.com/ST222HDBT](http://www.startech.com/ST222HDBT)

#### Installation:

- Phillips Head Screwdriver x 1
- Grounding Wire x 1
- Level x 1
- Writing Utensil x 1

#### Display:

- HDMI Display (e.g. television, projector, etc.) x 2

#### Devices:

Device requirements are optional and will depend on the setup.

- HDMI Video Source (e.g. host computer, Blu-ray player, etc.) x 2
- Serial Communication Device x 1
- Audio Device x 1
- Microphone x 1

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## Cables:

Cable requirements are optional and will depend on the setup.

- HDMI Cables x 4
- CAT5/CAT6 Cable x 1
- Fiber Optic Cable x 2
- Serial Cable x 1

# Installation

## Installing the HDMI Transmitter/Receiver

1. Set up the Video Source (e.g. computer) and the Remote Displays (place/mount the display appropriately).
2. Position the HDMI Transmitter near the Video Sources set up in step 1.
3. Connect an HDMI cable from the HDMI Video Source Device to the Video Input Port on the back of the HDMI Transmitter.

**Note:** *If you are using a locking HDMI cable, use a Phillips Head Screwdriver to remove the screw above the HDMI In 1 Port. Insert and tighten the Locking Screw in the Locking Screw hole above the corresponding HDMI Port. Connect an HDMI cable to the HDMI In 1 Port on the back of the HDMI Transmitter. Insert a Locking Screw in the Lock Bolt hole above the HDMI Port on the HDMI Transmitter. Using the Phillips Head Screwdriver, tighten the Locking Screw. Be careful not to over-tighten.*

4. Position the HDMI Receiver near the HDMI Video Display Device you set up in step 1.
5. Connect an HDMI cable from the Video Out Port on the back of the HDMI Receiver to the HDMI Video Display Device.
6. On the HDMI Transmitter, connect a CAT5e/CAT6 Cable (sold separately) to the RJ45 Port.
7. Connect the other end of the CAT5e/CAT6 Cable to the RJ45 Port on the back of the HDMI Receiver.

**Notes:** Properly grounding the HDMI Transmitter and HDMI Receiver can prevent damage and improve audio/video signal quality.

The cabling should not go through any networking equipment (e.g. router, switch, etc.).

For best results use a CAT6 STP Cable.

8. On the back of the HDMI Receiver, connect an HDMI cable from the HDMI Display Device into the HDMI Out 1 Port. Refer to Steps 3 - 5, if you are using a locking HDMI cable.

**Notes:** Follow steps 1 - 9 to connect a second HDMI Video Source and HDMI Display Device. Make sure that you use the HDMI In 2 and HDMI Out 2 Ports instead of using the HDMI In 1 and HDMI Out 1 Ports as outlined in the Installation steps.

Video source and destination have a one to one relationship, video cannot be switched or split.

9. Connect the Universal Power Adapter to the DC 12V Power Port on both the HDMI Transmitter and HDMI Receiver and the other end to an AC Electrical Outlet.

## Optional Installation

### Installing the Ground Wire

Grounding is recommended in environments with high levels of electromagnetic interference (EMI), or frequent electrical surges.

#### HDMI Transmitter or HDMI Receiver (Back)

1. Using a Phillips Head Screwdriver (not included) remove the Grounding Screw.
2. Attach the Grounding Wire (not included) to the shaft of the Grounding Screw.
3. Insert the Grounding Screw back into the Ground.
4. Tighten the Grounding Screw, making sure not to over-tighten.

5. Attach the other end of the Grounding Wire (not connected to the HDMI Transmitter/HDMI Receiver) to a proper earth ground connection.

## Connecting a Serial Device

You can connect a serial device using the RS-232 Port on either the HDMI Transmitter or HDMI Receiver.

1. On the HDMI Transmitter, connect the Serial Cable to the RS-232 Port, and tighten the two screws on either side of the Serial connector.
2. Connect the other end of the Serial Cable to a Serial Port on a Serial Communication Device, and tighten the two screws on either side of the Serial connector.

### Serial Mode Switch:

Set the Serial Mode Switch (on the back on the HDMI Transmitter or HDMI Receiver) to Extend, to extend the serial communication signal.

**Note:** StarTech.com does not currently support the Upgrade 1 and 2 settings on the Serial Mode Switch.

## Using Digital Audio

The Toslink Port supports an independent S/PDIF (Sony Phillips Digital Interconnect Format) digital audio link.

1. Connect a Fiber Optic Cable (sold separately) to the Toslink In Port on the HDMI Transmitter.
2. Connect the other end of the Fiber Optic Cable to the Audio Out Port on the Audio Source.
3. Connect a second Fiber Optic Cable to the Toslink Out Port on the HDMI Receiver.
4. Connect the other end of the Fiber Optic Cable to a Toslink In Port on an Audio Device.

## Using 3.5 mm Audio

The Audio Out Port is used to connect an audio device (e.g. speakers) to the HDMI Transmitter and HDMI Receiver.

1. Connect a 3.5 mm Audio Cable to the Audio In Port on the HDMI Transmitter.
2. Connect the other end of the 3.5 mm Audio Cable to the Audio Out Port on the Audio Source Device.
3. Connect a 3.5 mm Audio Cable to the Audio Out Port on the HDMI Receiver.
4. Connect the other end of the 3.5 mm Audio Cable to the Audio In Port on the Audio Source Device.

## Using a Microphone

The Mic In port is used to connect a Microphone to the HDMI Transmitter and/or HDMI Receiver.

1. Connect a 3.5 mm Audio Cable to the Audio Out Port on the HDMI Transmitter.
2. Connect the other end of the 3.5 mm Audio Cable in the Audio In Port on the Microphone.
3. Connect a 3.5 mm Audio Cable to the Mic in Port on the HDMI Receiver.
4. Connect the other end of the 3.5 mm Audio Cable to the connector (e.g. XLR connector) on the bottom of the Microphone.

## Installing the IR Receiver and IR Blaster

The IR Receiver and IR Blaster can be connected to either the HDMI Transmitter or HDMI Receiver.

### **HDMI Transmitter:**

If the device receiving the IR signal is at the HDMI Receiver side:

1. Connect the IR Receiver to the IR In Port on the back of the HDMI Transmitter.
2. Position the IR Receiver where you'll point your IR Remote Control.

If the device receiving the IR signal is at the HDMI Transmitter side:

1. Connect the IR Blaster to the IR Out port on the back of the HDMI Transmitter.
2. Position the IR Blaster directly in front of the HDMI Video Source's IR Sensor (if you're unsure, check the manual of your HDMI Video Source to determine the IR sensor location).

### **HDMI Receiver:**

If the device receiving the IR signal is at the HDMI Receiver side:

1. Connect the IR Blaster to the IR Out Port on the HDMI Receiver.
2. Position the IR Blaster directly in front of the device's IR Sensor (if you're unsure, check the manual of your video source to determine the IR sensor location).

If the device receiving the IR signal is at the HDMI Transmitter side:

1. Connect the IR Receiver to the IR In Port on the HDMI Receiver.
2. Position the IR Receiver where you'll point your IR Remote Control.

## Video Resolution Performance

The video resolution performance of this extender will vary depending on the length of your network cabling. For best results, StarTech.com recommends using a shielded CAT6 cable.

Distance	Maximum Resolution
90 m (295 ft.) or less	1080p at 60Hz

## Configuration

### EDID Copy

The Extended Display Identification Data (EDID) Copy Button allows you adjust the EDID settings, by either copying settings from the Video Displays connected to the HDMI Receiver to Video Sources connected to the HDMI Transmitter, or by calculating the optimal EDID settings based on the two connected Video Displays and applying those settings to the connect Video Sources. EDID Copy

- Hold down the EDID Copy Button on either the HDMI Transmitter or HDMI Receiver (depending on the EDID setting you wish to copy) for three seconds. The LED Status Indicator will flash Green to indicate that the settings were copied from the Video Display to the Video Source.

### Auto Learning

- Hold down the EDID Copy button on either the HDMI Transmitter or HDMI Receiver (depending on the EDID setting you wish to copy) for six seconds. The LED Status Indicator will flash blue to indicate that the optimal EDID settings based on the two connected displays were applied to the connected HDMI Video Sources.



## LED Indicators

There is one LED Status Indicator on the HDMI Transmitter and HDMI Receiver.

Function	Status
EDID Copy (hold the EDID button for three seconds)	Flashes Green
Auto Learning (hold the EDID button for six seconds)	Flashes Blue

## Mounting the Extender

**Notes:** StarTech.com is not responsible for any damages related to the installation of this product.

*Prior to mounting, please test the product's port compatibility with all devices intended for use with this product.*

1. Align the Mounting Bracket with the two screw holes on the side of the HDMI Transmitter and/or HDMI Receiver (two per side).

**Note:** Make sure that the large circular opening on the Mounting Holes is at the bottom when the Mounting Brackets are installed. This will ensure that you can properly mount the bracket on the wall.

2. Insert the Mounting Screws through the Mounting Bracket and into the Mounting Holes on the side of the HDMI Transmitter and/or HDMI Receiver.
3. Using a Phillips Head Screwdriver tighten the four screws, be careful not to over-tighten.

4. Before mounting the HDMI Transmitter and/or HDMI Receiver make sure that the surface you are mounting to is strong enough to support the weight of the Port Extender. It is recommended that you mount the HDMI Transmitter and/or HDMI Receiver on a wall stud to provide the correct support.
5. Measure the distance between the Mounting Holes on the Mounting Brackets.
6. Using a Level and a Writing Utensil, mark the distance measured between the two Mounting Holes on the mounting surface. Make sure to also mark the Mounting Hole locations on the mounting surface.
7. Using a Phillips Head Screwdriver, screw the two Mounting Screws into the surface, using the mounting hole locations marked in step 6 as a guide. Make sure that you leave space between the head of the Screw and the wall.
8. Align the large circular holes on the Mounting Bracket with the Mounting Screws.
9. Slide the HDMI Transmitter and/or HDMI Receiver down, to lock the Mounting Bracket in place.

## Technical Support

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

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This product is backed by a two-year warranty.

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