StarTech.com ST12MHDLAN2K HDMI Over IP Extender Kit User Manual

Contents

StarTech.com ST12MHDLAN2K HDMI Over IP Extender Kit

Safety Statements

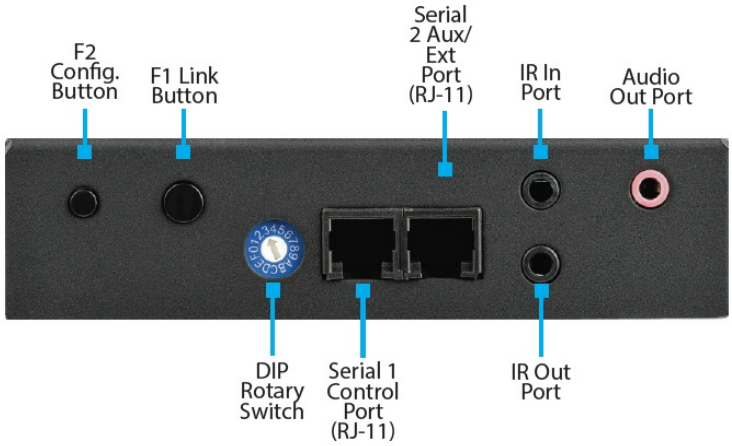
Safety Measures

- 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 electricity, tripping, or safety hazards.

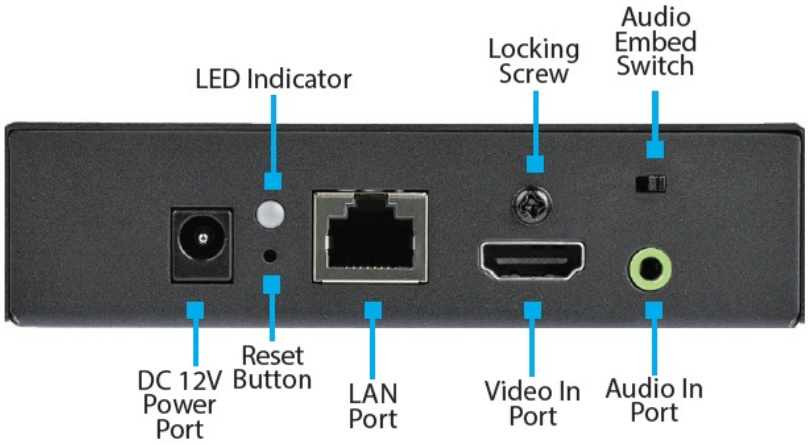
Product Diagram

Actual product may vary from photos

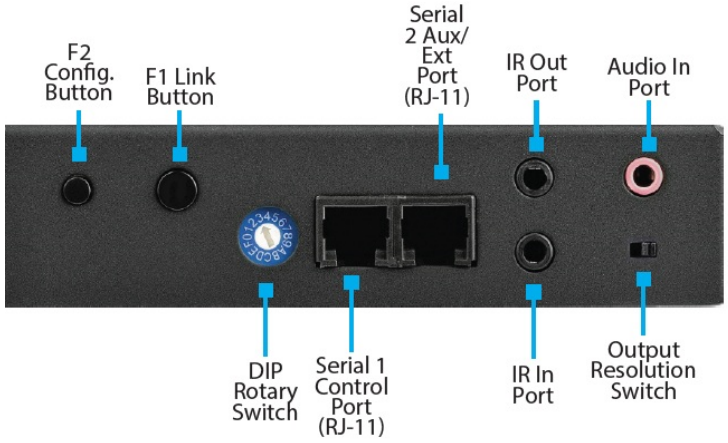
Transmitter Front



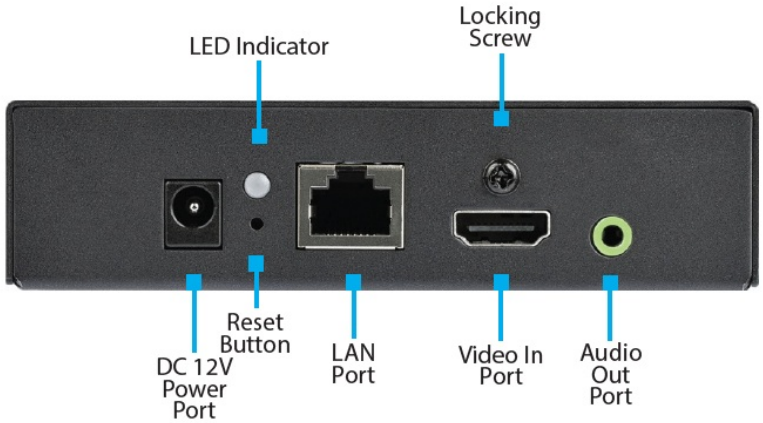
Transmitter Rear



Receiver Front



Receiver Rear



Product Information

Package Contents (ST12MHDLAN2K)

- HDMI Transmitter x 1
- HDMI Receiver x 1
- Universal Power Adapters (NA, EU, UK, ANZ) x 2
- Hardware Kit x 1
- Mounting Brackets x 2
- Mounting Screws x 8
- HDMI Locking Screws x 2

- Plastic Screwdriver x 1
- CAT5 Cable x 1
- RJ-11 to RS-232 Adapters x 2
- RJ-11 Cables x 2
- IR Blaster x 1
- IR Receiver x 1
- Foot Pads x 8
- User Manual x 1

Package Contents (ST12MHDLAN2R)

- HDMI Receiver x 1
- Universal Power Adapters (NA, EU, UK, ANZ) x 1
- Hardware Kit x 1
- Mounting Brackets x 2
- Mounting Screws x 8
- HDMI Locking Screws x 1
- Plastic Screwdriver x 1
- CAT5 Cable x 1
- RJ-11 to RS-232 Adapters x 1
- RJ-11 Cables x 1
- IR Blaster x 1
- IR Receiver x 1
- Foot Pads x 4
- User Manual x 1

Requirements

For the latest requirements, please visit **www.startech.com/ST12MHDLAN2K** or **www.startech.com/ST12MHDLAN2R**.

Installation:

- Phillips Head Screwdriver
- Writing Utensil
- Level

Display:

- HDMI Displays x 1 (per HDMI Receiver)

Devices:

- HDMI Video Source x 1 (per HDMI Transmitter)

Installation

1. Set up an HDMI Video Source Device (e.g. computer) and an HDMI Display Device in the desired location.
2. Position the HDMI Transmitter near the HDMI Video Source Device you set up in Step 1.
3. Connect an HDMI Cable from the HDMI Video Source Device to the Video In 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 Video Port. Connect an HDMI Cable to the Video In Port on the back of the HDMI Transmitter, and re-insert the Locking Screw into the Locking Screw Hole. 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.
   Notes: To connect additional HDMI Receivers (sold separately), repeat step 5.
6. Connect a CAT5e/CAT6 Cable to the LAN Port on the back of the HDMI Transmitter.
7. Connect the other end of the CAT5e/CAT6 Cable to the LAN Port on the back of the HDMI Receiver.
   Note: The cabling should not go through any networking equipment (e.g. router, switch, etc.).
8. Connect the Universal Power Adapter to the DC 12V Power Port on both the HDMI Transmitter and HDMI Receiver and to an AC Electrical Outlet.

Optional Installation

Using a Separate 3.5 mm Audio Source

Audio In Port (Transmitter)/Audio Out Port (Receiver):

If you intend to add a separate 3.5 mm audio source (Microphone) that can be embedded into the HDMI signal and selected as the audio source:

1. Connect a 3.5 mm Audio Cable to the Audio In Port on the HDMI Transmitter and the other end to the Audio Source Device.
2. Connect a 3.5 mm Audio Cable to the Audio Out Port on the HDMI Receiver and the other end to an Output Device.

Audio Out Port (Transmitter)/Audio In Port (Receiver):

If you intend to transmit an audio signal from the HDMI Receiver to the HDMI Transmitter.

1. Connect a 3.5 mm Audio Cable to the Audio In Port on the HDMI Receiver and connect the other end of the cable to the Audio Device.
2. Connect a 3.5 mm Audio Cable to the Audio Out Port on the HDMI Transmitter and connect the other end of the cable to the Output Device.

Connect the Devices to a Gigabit LAN Network

The HDMI Transmitter and HDMI Receiver can be used in a video wall or point-to-multi-point or point-to-point configuration over a Gigabit LAN.

1. Connect a CAT5e/CAT6 Cable to the LAN Port on the HDMI Transmitter.
2. Connect the other end of the CAT5e/CAT6 Cable to a Gigabit LAN hub, router, or switch.
3. Connect a CAT5e/CAT6 Cable to the LAN Port on the HDMI Receiver.
4. Connect the other end of the CAT5e/CAT6 Cable to a Gigabit LAN hub, router, or switch.
   Note: Your router must support IGMP snooping. Please refer to your network switch or router documentation to ensure IGMP snooping is supported and enabled.
5. Verify that the image from your Video Source appears on the Display Devices attached to the HDMI Receiver(s).

Using the RJ-11 to RS-232 Adapters

The RJ-11 to RS-232 Adapter can be used to connect a Serial Device to either the HDMI Transmitter or HDMI Receiver.

1. Connect an RJ-11 Cable to the Serial 2 Aux/Ext Port (RJ-11) on either the HDMI Transmitter or HDMI Receiver.
2. Connect the other end of the RJ-11 Cable to the RJ-11 Port on an Adapter.
3. Plug the RS-232 Connector on the Adapter into an RS-232 Port on the Serial Device.

Note: When connecting the RS-232 connector on the Adapt-er to the Serial Device you may need to use an additional serial cable or adapter.

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 front 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 front 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.

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 Mounting 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 Screw Holes on the side of the HDMI Transmitter and/or HDMI Receiver.
3. Using a Phillips Head Screwdriver tighten the four Mounting 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 HDMI Transmitter and HDMI Receiver. It is recommended that you mount the HDMI Transmitter and/or HDMI Receiver onto a wall stud to provide the correct support.
5. Measure the distance between the Mounting Screw Holes on the Mounting Brackets.
6. Using a Level and a Writing Utensil, mark the distance measured between the two Mounting Screw Holes on the mounting surface.
7. Using a Phillips Head Screwdriver, screw the two Mounting Screws into the surface, using the Mounting Screw 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 Brackets in place.

Installing the Feet

1. Remove the adhesive backing from the foot pads.
2. Align each of the foot pads with the four impressions on the bottom of the HDMI Transmitter and HDMI Receiver.
3. While applying pressure, affix the feet to the bottom of the HDMI Transmitter and HDMI Receiver.

Configuration

Rotary DIP Switch

The Rotary DIP Switch on the HDMI Transmitter and connected HDMI Receiver(s) must be set to the same position/channel for the devices to communicate.

- Use the flat end of the Plastic Screwdriver (included) to adjust the Rotary DIP Switch's position.

Serial 1 Control Port

The Serial 1 Control Port is currently not supported by StarTech. com. It is recommended that the StarTech.com Wall Control app is used to configure the HDMI Transmitter and HDMI Receiver(s).

Output Resolution Switch

The Output Resolution Switch is located on the HDMI Receiver and has two settings:

- **Native:**
  Sets the video output to a max of 1080p @ 60Hz.
- **Scaling:**
  Set the video output to 720p @ 60Hz

Audio Embed Switch

The Audio Embed Switch is located on the HDMI Transmitter and has two settings:

- **Embedded:**
  Embeds external audio from the Audio In Port into the HDMI signal.
- **HDMI:**
  Uses the audio from the HDMI signal.

Function Buttons

The F1 (Link) and F2 (Config.) function buttons allow you to perform the following functions:

HDMI Transmitter/HDMI Receiver F1 Button Link/Unlink Video:

- Press the F1 Button once.

Factory Reset:

1. Power off the HDMI Transmitter or HDMI Receiver (unplug the Universal Power Adapter from the HDMI Transmitter or HDMI Receiver).
2. Press and hold the F1 Button.
3. Power on the HDMI Transmitter or HDMI Receiver (plug the Universal Power Adapter back into the HDMI Transmitter or HDMI Receiver).
4. Release the F1 Button after 17 seconds (the Power/Link LED will flash green and blue).
5. For a second time power cycle the HDMI Transmitter or HDMI Receiver.

HDMI Transmitter/HDMI Receiver F2 Button Graphic/Video Mode:

- Press and hold the F2 Button for 1 second. Anti-Dither Adjustment Mode:

- Press and hold the F2 Button for 3 seconds. EDID Copy (HDMI Receiver only):

1. Power off the HDMI Transmitter or HDMI Receiver (unplug the Universal Power Adapter from the HDMI Transmitter or HDMI Receiver).
2. Press and hold the F2 Button.
3. Power on the HDMI Transmitter or HDMI Receiver (plug the Universal Power Adapter back into the HDMI Transmitter or HDMI Receiver).
4. Release the F2 Button after 12 seconds (the Network Status LED will flash yellow).

Rebooting the System

1. With the HDMI Transmitter or HDMI Receiver powered on, Insert a pointed-tip object (e.g. pin) into the recessed Reset Button.
2. Hold the recessed Reset Button until the HDMI Transmitter or HDMI Receiver reboots.

StarTech.com Wall Control App

General Navigation and Operation

You can access the StarTech.com Wall Control app software menu from any screen by clicking the Menu icon in the top right-hand corner of the screen. From the menu, you can access each of the options below.

- **Help:** Lists information and walkthroughs regarding the operation of the application.
- **Device Search Mode:** This enables you to define your preferred method of identifying the Transmitter and Receiver on the network. You can choose between two methods of identification, Multicast DNS or Target IP.
- **Multicast DNS:** this is the default setting and will search automatically for devices over the network.
- **Target IP:** is an advanced setting that enables you to specify an IP address that the remote devices are set to, in order for the software to identify them. This is a good option if you'd like multiple setups with different displays and transmitters on different subnets and IP address ranges.
- **Clear All Settings:** Restores your software to default settings.
- **Demo Mode:** Creates a virtual environment with multiple Transmitters and Receivers that enables you to configure a virtual setup without physically connecting the Transmitters or Receivers, to test the functionality.

Software Installation

The HDMI distribution kit features video control software that helps you manage your IP video distribution and video wall configuration. The software is available for iOS and/or Android™ devices.

1. Using a browser, navigate to **www.StarTech.com/ST12MHDLAN2K**.
2. Scroll down on the Overview tab and select the link for the store that corresponds with your device.
3. Download the StarTech.com Wall Control app.

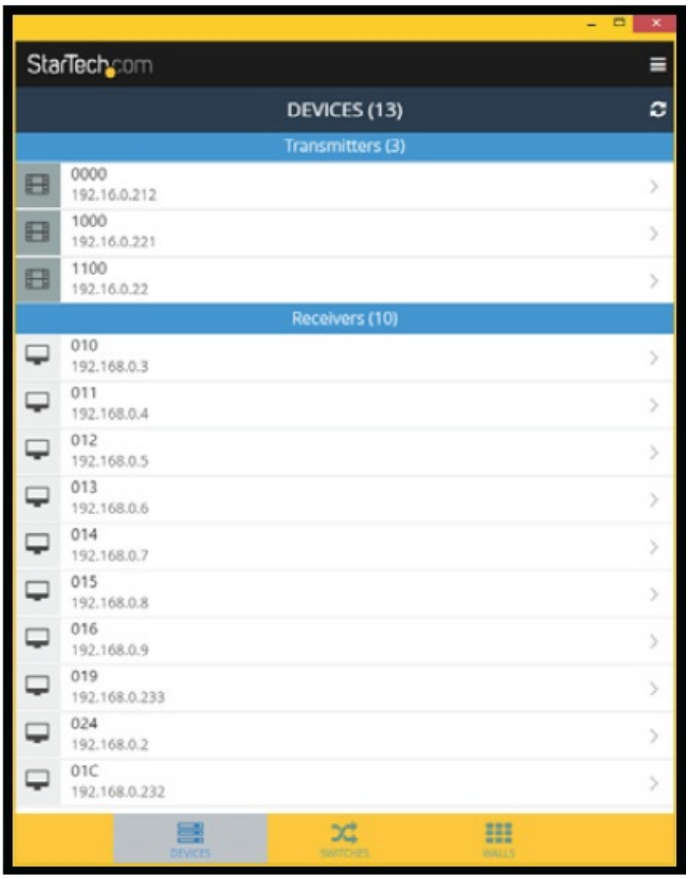
Connecting Transmitters and Receivers to the Software

Note: To ensure the application functions properly, your router must support IGMP snooping. Please refer to your

network switch or router documentation to ensure IGMP snooping is supported and enabled.

1. Connect the device you installed the StarTech.com Wall Control app on to the same network as your transmitter(s) and receiver(s).
2. Select the StarTech.com Wall Control icon.
3. The app will open to the DEVICES screen and automatically populate the DEVICES screen with all Transmitters and Receivers connected to the network.

DEVICES screen

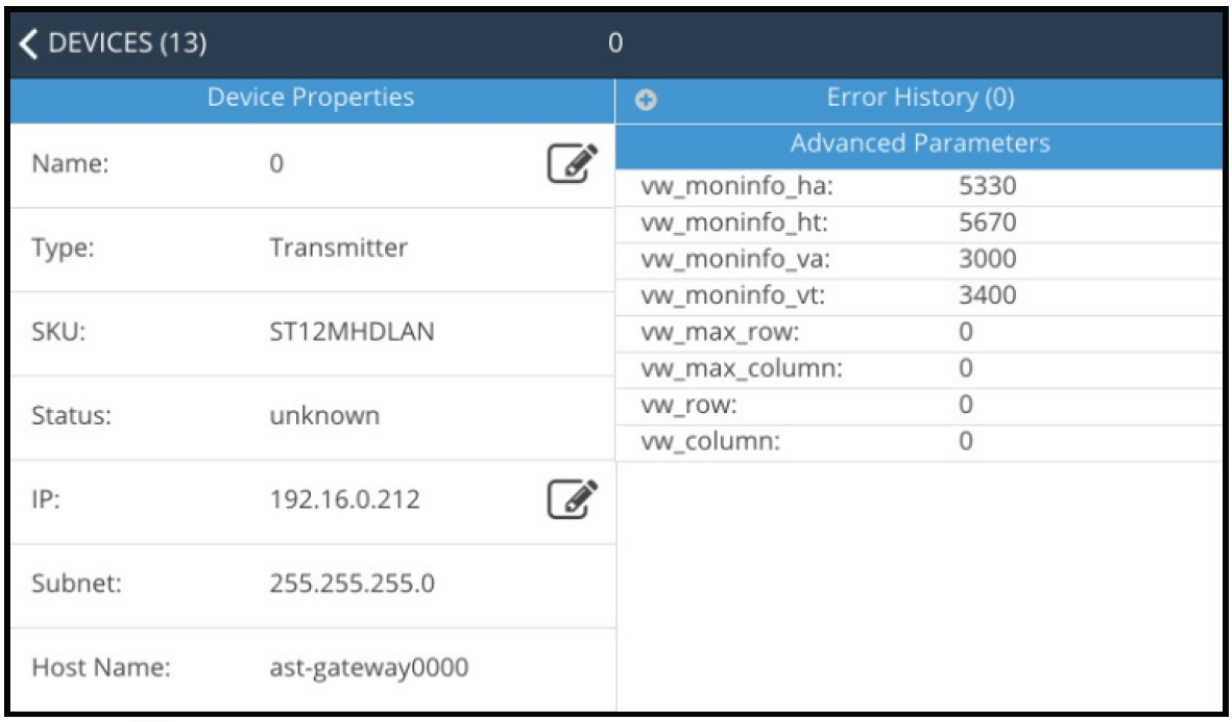


Note: You can re-initiate the device search, by selecting the Refresh button in the top right-hand corner of the DEVICES screen.

Adjusting the IP Address and Subnet Masks

1. On the DEVICES screen, click on a Transmitter or Receiver.
2. The Device Properties screen will appear.

   Device Properties screen

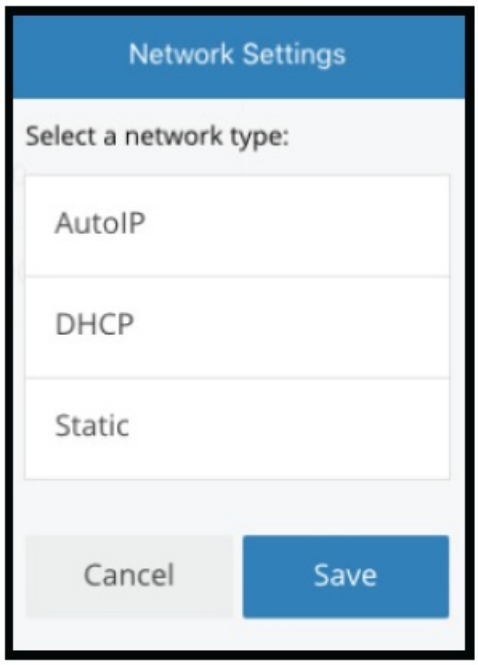


3. Click the Edit  The icon next to the IP address you wish to configure.
4. The Network Settings screen will appear.

   Network Settings screen

5. Select the Static button, and an IP Address and Subnet Mask field will appear.

   Static Button



6. Using the on-screen keyboard, enter an IP address and subnet mask for the device. – or – Select DHCP and your network will automatically assign an IP address and subnet mask to the device in the range of the rest of your network devices.
   Note: DHCP must be enabled on your network to automati-cally assign an IP address and subnet mask.
7. Click the Save button to apply the new IP address and subnet mask to the selected device. – or – Click the Cancel button to discard any changes made and return to the Device Properties screen.

Switching Your Remote Displays Between Video Sources

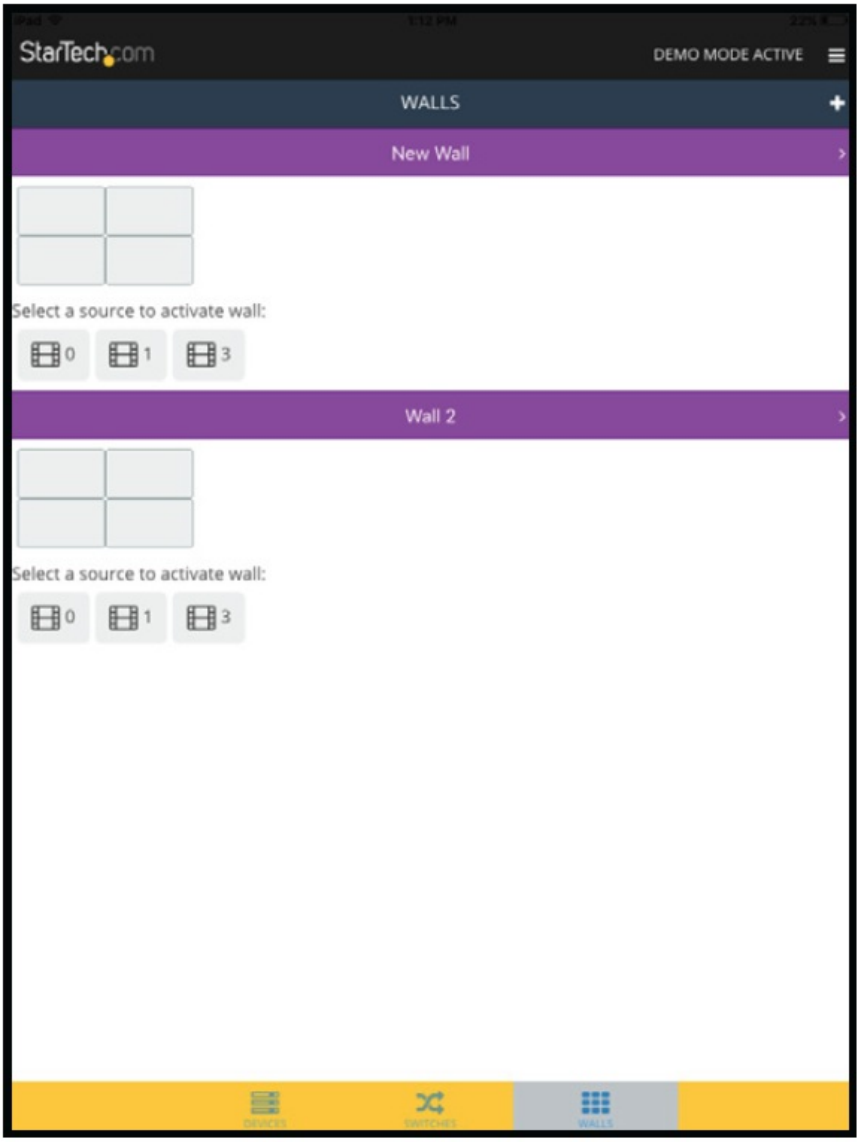
1. On the DEVICES screen, select the SWITCHES 

button on the toolbar at the bottom of the screen.
2. The SWITCHES screen will appear.
   SWITCHES screen

3. A list of connected receivers and transmitters will be displayed. The transmitter that is currently selected for each receiver will be highlighted in yellow.
   Note: If the receiver is part of a video wall it will be indicated with a button that lists the wall configuration and the location of the receiver.
4. To assign a Video Source, or change the Video Source, select the transmitter listed next to the receiver that you would like to display.
5. The transmitter will turn yellow and the Video Source will switch on the remote display.
   Note: If a receiver that was part of a video wall configuration is altered, that display will no longer be part of the video wall configuration.

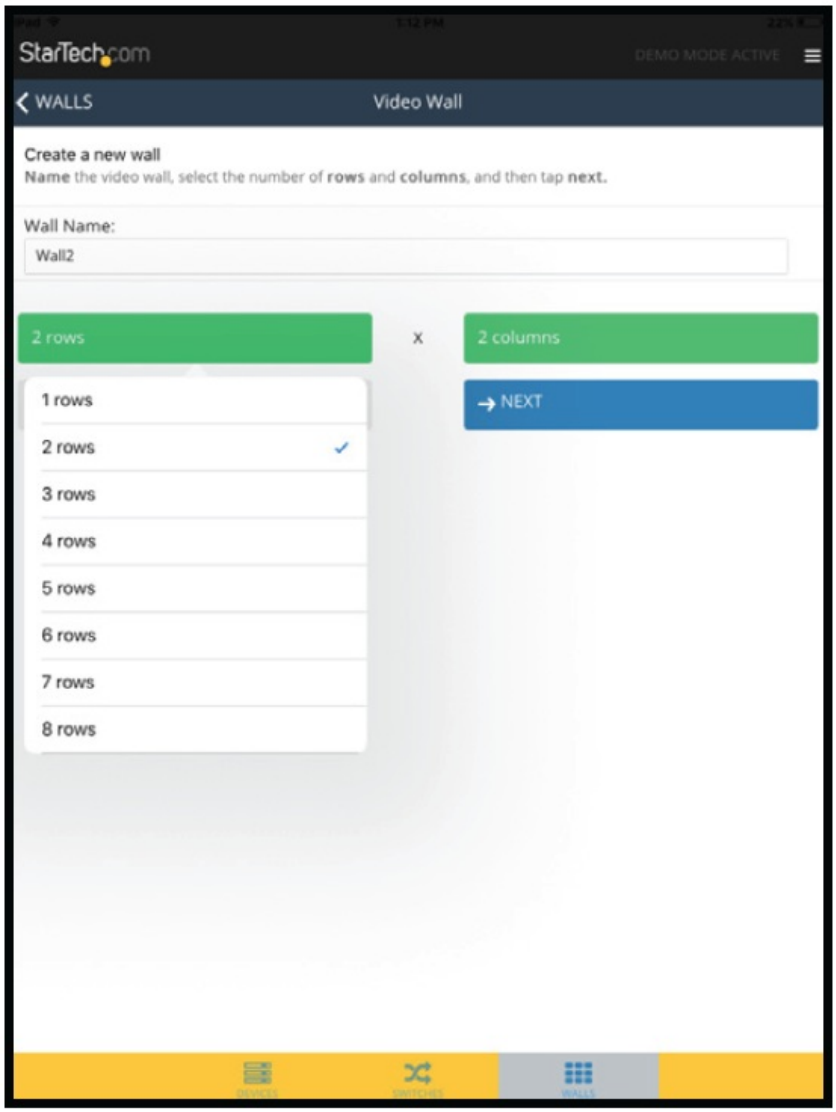
Configuring Your Remote Displays for a Video Wall Application

1. On the DEVICES screen, select the WALLS button on the toolbar at the bottom of the screen.
2. The WALLS screen will appear.
   WALLS screen



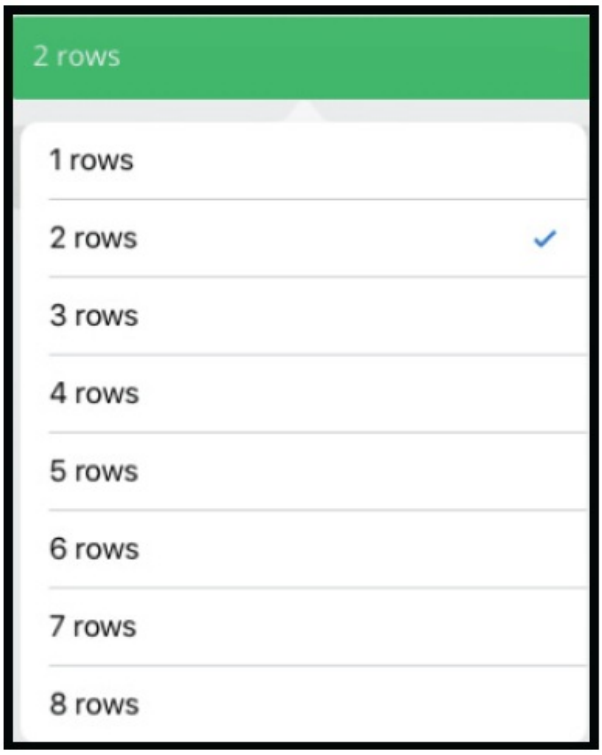
3. Select the + icon, the Video Wall screen will appear.

   Video Wall screen



4. Select the Wall Name field. Using the on-screen keyboard enter a name for the new video wall configuration.
5. Select the Rows field. From the drop-down list select the number of rows in the video wall configuration.

   Rows drop-down list

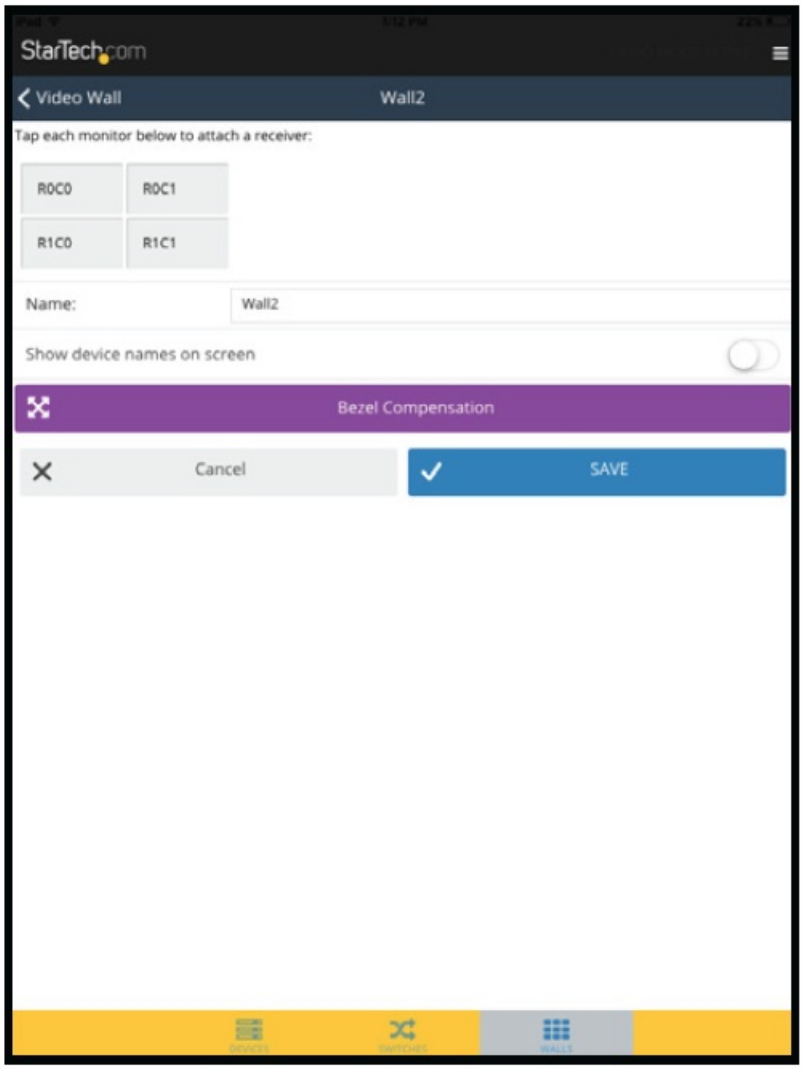


6. Select the Columns field. From the drop-down list, select the number of rows in the video wall configuration.

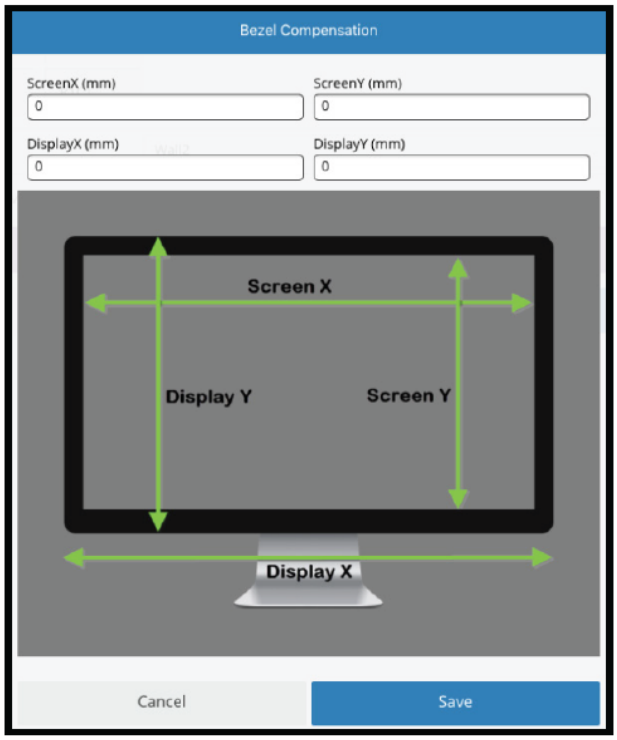
Note: The Cancel button will take you back to the WALLS screen without adding a video wall configuration.

7. Select the Next button. A video wall display will appear based on the number of rows and columns selected on the previous screen. The video wall display allows you to associate a connected receiver with each of the receiver locations in the video wall display.

   WALLS Screen

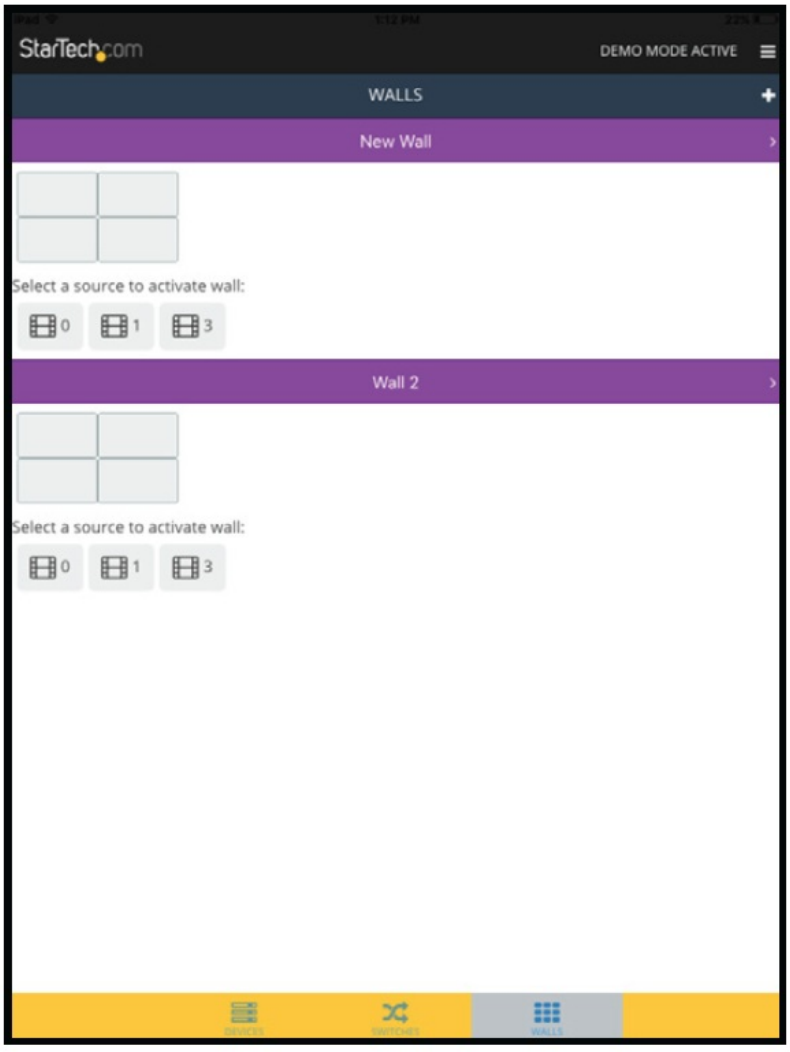


8. Select a receiver location on the video wall display. The Pick a Receiver for the screen will appear.
9. Pick a receiver from the list of connected receivers. – or – Click the Cancel button to return to the previous screen.
10. Once a receiver is selected it will appear in yellow on the video wall display.
11. The Name field will list the Wall Name entered on the Video Wall screen by default. By selecting the Name field, the Wall Name can be overwritten.
12. To see the Receiver name on each screen, select the Show device names on the screen switch.
13. (Optional) Select the Bezel Compensation button to scale the image on the displays to create a more natural, seamless look by specifying the bezel compensation.
14. The Bezel Compensation screen will appear:
    - **ScreenX:** Allows you to adjust the display's width in millimeters (mm).
    - **ScreenY:** Allows you to adjust the display's height in millimeters (mm).
    - **DisplayX: Allows** you to adjust the total width of the display in millimeters (mm).
    - **DisplayY:** Allows you to adjust the total height of the display in millimeters (mm).



15. Click the Save button to save the bezel compensation settings and return to the Video Wall screen. – or – Click the Cancel button to discard changes and return to the Video Wall screen.
16. On the Video Wall screen, click the Save button to save the video wall settings and return to the WALLS screen. – or – Click the Cancel button to discard changes and return to the WALLS screen.
17. The WALLS screen will appear.

WALLS screen



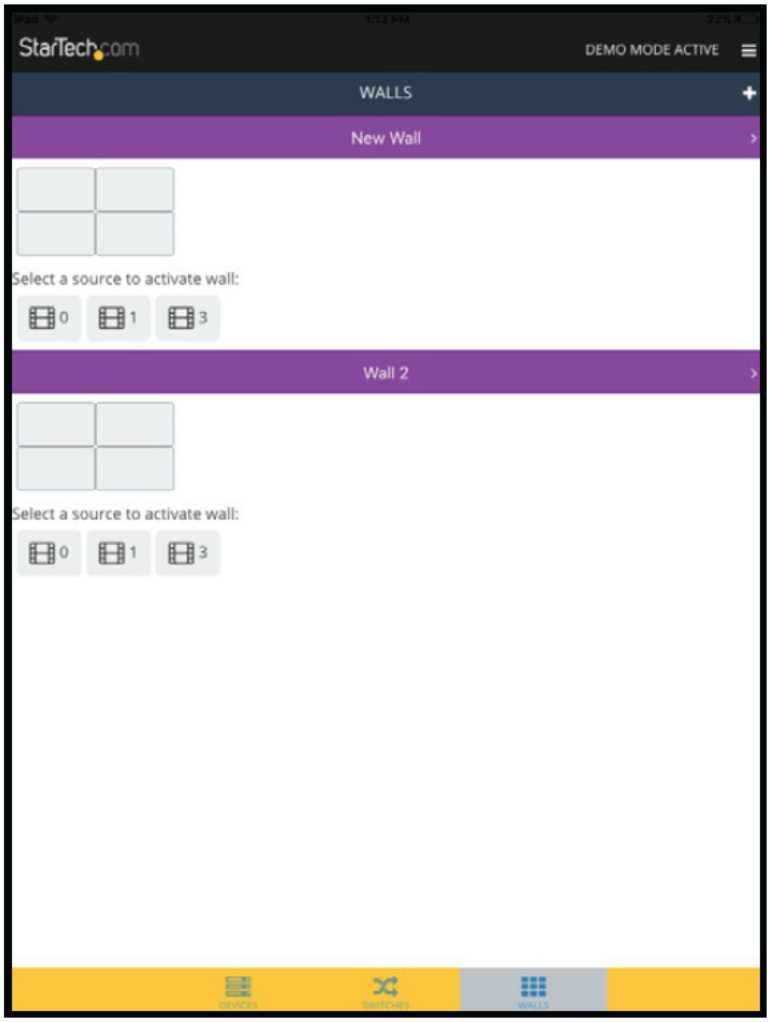
18. The new video wall configuration will appear on the WALLS screen.
19. Select a Source (transmitter) to activate the video wall.
20. The selected source and receivers in the configuration will be highlighted:
    - **Yellow:** Indicates which devices in the video wall configuration are active.
    - **Gray:** Indicates that the receiver is currently being used in another video wall configuration.

Note: You can adjust the settings defined for each video wall configuration or delete your video wall configuration by clicking the arrow next to each video wall.

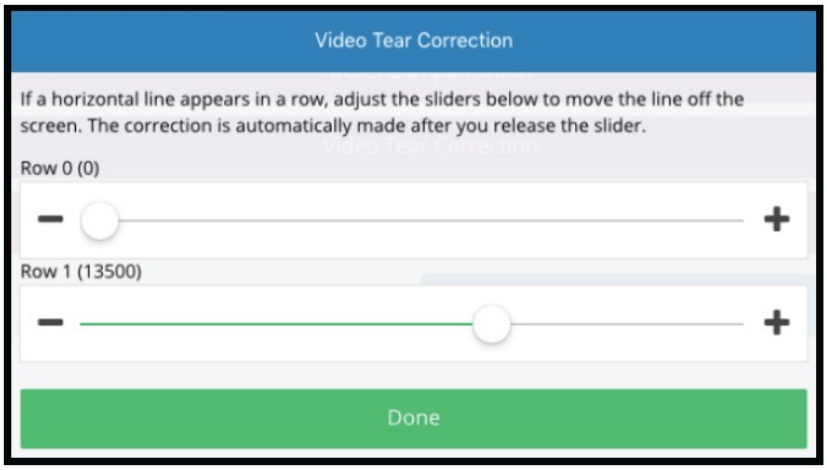
Adjusting Video Tear

1. On the DEVICES screen, select the WALLS button on the toolbar at the bottom of the screen.
2. The WALLS screen will appear.

   WALLS screen



3. Select the Arrow icon next to the video wall name.
4. The Video Wall screen will appear.
5. Select the Video Tear Correction button.
6. The Video Tear Correction screen will appear.



7. Adjust the Sliders until the video tear line moves off the display.
8. Click the Done button once you have adjusted the video tear.

Technical Support

StarTech.com's lifetime technical support is an integral part of our commitment to providing industry-leading solutions. If you ever need help with your product, visit **www.startech.com/support** and access our comprehensive selection of online tools, documentation, and downloads. For the latest drivers/software, please visit **www.startech.com/downloads**

Warranty Information

This product is backed by a two-year warranty. 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.

Limitation of Liability

In no event shall the liability of StarTech.com Ltd. and StarTech.com USA LLP (or their officers, directors, employees, or agents) for any damages (whether direct or indirect, special, punitive, incidental, consequential, or otherwise), loss of profits, loss of business, or any pecuniary loss, arising out of or related to the use of the product exceed the actual price paid for the product. Some states do not allow the exclusion or limitation of incidental or consequential damages. If such laws apply, the limitations or exclusions contained in this statement may not apply to you.

Hard-to-find made easy. At StarTech.com, that isn't a slogan. It's a promise.

StarTech.com is your one-stop source for every connectivity part you need. From the latest technology to legacy products — and all the parts that bridge the old and new — we can help you find the parts that connect your solutions.
We make it easy to locate the parts, and we quickly deliver them wherever they need to go. Just talk to one of our tech advisors or visit our website. You'll be connected to the products you need in no time. Visit **www.startech.com** for complete information on all StarTech.com products and to access exclusive resources and time-saving tools. StarTech.com is an ISO 9001 Registered manufacturer of connectivity and technology parts. StarTech.com was founded in 1985 and has operations in the United States, Canada, the United Kingdom, and Taiwan servicing a worldwide market. Reviews Share your experiences using StarTech.com products, including product applications and setup, what you love about the products and areas for improvement.

StarTech.com Ltd.

45 Artisans Cres. London, Ontario N5V 5E9 Canada
FR: fr.startech.com
DE: de.startech.com

StarTech.com LLP

2500 Creekside Pkwy. Lockbourne, Ohio 43137 U.S.A.
ES: es.startech.com
NL: nl.startech.com

StarTech.com Ltd.

Unit B, Pinnacle 15 Gowerton Rd., Brackmills Northampton NN4 7BW United Kingdom
IT: it.startech.com
JP: jp.startech.com

To view manuals, videos, drivers, downloads, technical drawings, and more visit **www.startech.com/support**

Compliance Statements

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class A 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 the receiver
- Connect the equipment to 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 A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe [A] est conforme à la norme NMB-003 du Canada. CAN ICES-3 (A)/NMB-3(A)

Use of Trademarks, Registered Trademarks, and Other Protected Names and Symbols This manual may make reference to trademarks, registered trademarks, and other protected names and/or symbols of third-party companies not related in any way to StarTech.com. Where they occur these references are for illustrative purposes only and do not represent an endorsement of a product or service by StarTech.com, or an endorsement of the product(s) to which this manual applies by the third-party company in question. Regardless of any direct acknowledgment elsewhere in the body of this document, StarTech.com hereby acknowledges that all trademarks, registered trademarks, service marks, and other protected names and/or symbols contained in this manual and related documents are the property of their respective holders.

For the State of California

WARNING: Cancer and Reproductive Harm **www.P65Warnings.ca.gov**

FREQUENTLY ASKED QUESTIONS

What is the maximum resolution supported by the StarTech.com ST12MHDLAN2K HDMI Over IP Extender Kit?

The ST12MHDLAN2K supports a maximum resolution of 1080p (Full HD).

How does the ST12MHDLAN2K HDMI Over IP Extender Kit work?

The kit uses IP (Internet Protocol) technology to extend HDMI signals over a local area network (LAN) infrastructure.

What is the maximum distance supported by the ST12MHDLAN2K HDMI Over IP Extender Kit?

The kit supports a maximum distance of 330 feet (100 meters) over a Cat5e or Cat6 Ethernet cable.

Can the ST12MHDLAN2K HDMI Over IP Extender Kit transmit audio along with video?

Yes, the kit can transmit both audio and video signals over the IP network.

Does the ST12MHDLAN2K HDMI Over IP Extender Kit support multicast or unicast transmission?

The kit supports both multicast and unicast transmission modes for flexible deployment.

How many transmitters and receivers are included in the ST12MHDLAN2K HDMI Over IP Extender Kit?

The kit includes one transmitter unit and one receiver unit.

Can the ST12MHDLAN2K HDMI Over IP Extender Kit be used with a standard Ethernet switch?

Yes, the kit is compatible with standard Ethernet switches, making it easy to integrate into existing network infrastructures.

Does the ST12MHDLAN2K HDMI Over IP Extender Kit require any additional power source?

Yes, both the transmitter and receiver units require power, and power adapters are included in the kit.

Is the ST12MHDLAN2K HDMI Over IP Extender Kit compatible with HDCP (High-bandwidth Digital Content Protection)?

Yes, the kit is HDCP compliant, ensuring compatibility with protected content.

Does the ST12MHDLAN2K HDMI Over IP Extender Kit support IR (infrared) remote control pass-through?

Yes, the kit supports IR pass-through, allowing you to control the video source remotely.

Can the ST12MHDLAN2K HDMI Over IP Extender Kit be used in point-to-point or multi-point setups?

The kit supports both point-to-point and multi-point configurations, allowing you to extend HDMI signals to multiple displays.

Is the ST12MHDLAN2K HDMI Over IP Extender Kit compatible with other StarTech.com extender products?

Yes, the kit is part of the StarTech.com IP extender series and can be used in conjunction with other compatible extender products.

Does the ST12MHDLAN2K HDMI Over IP Extender Kit support EDID (Extended Display Identification Data) management?

Yes, the kit supports EDID management to ensure optimal compatibility and performance with different display devices.

Can the ST12MHDLAN2K HDMI Over IP Extender Kit be used in commercial installations, such as digital signage?

Yes, the kit is suitable for commercial applications, including digital signage, where HDMI signals need to be extended over a network.

Does the ST12MHDLAN2K HDMI Over IP Extender Kit introduce any noticeable latency?

The kit is designed for low-latency transmission, minimizing any noticeable delay between the source and the display.