

HDMI® Over IP Extender Kit - 4K

ST12MHDLAN4K



*actual product may vary from photos

FR: Guide de l'utilisateur - fr.startech.com
DE: Bedienungsanleitung - de.startech.com
ES: Guía del usuario - es.startech.com
NL: Gebruiksaanwijzing - nl.startech.com
PT: Guia do usuário - pt.startech.com
IT: Guida per l'uso - it.startech.com

For the latest information, technical specifications, and support for this product, please visit www.StarTech.com/ST12MHDLAN4K.

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 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.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by StarTech.com could void the user's authority to operate the equipment.

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).

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference, and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) L'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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Introduction

Packaging contents

- 1 x HDMI over IP transmitter
- 1 x HDMI over IP receiver
- 2 x universal power adapters (NA, EU, UK, ANZ)
- 2 x mounting brackets
- 2 x CAT5e cables
- 2 x RJ11 to RS232 adapters
- 2 x RJ11 cables
- 1 x plastic screwdriver
- 1 x quick-start guide

System requirements

- An HDMI video source with cabling such as a computer or Blu-ray™ player
- An HDMI display with cabling such as televisions or projectors (one for each receiver)
- A run of Network cabling for the transmitter and each receiver

Product diagram

Transmitter unit

Front view



Back view



- | | |
|--------------------------------------|--|
| 1. Function 1 button | 9. Network status LED |
| 2. Function 2 button | 10. Reset button |
| 3. Dip rotary switch | 11. LAN port (RJ-45) |
| 4. Serial control port (not active)* | 12. HDMI input port (audio/video) |
| 5. Serial extension (RS-232 signal) | 13. Analog audio source port (3.5 mm stereo) |
| 6. Infrared (in) and (out) ports** | 14. Audio source selection switch |
| 7. Audio out port *** | 15. Link and power LED |
| 8. DC 9-12V power jack | |

* Serial control port is not active. To control the ST12MHDLAN4K download our free mobile application. (see Page 6).

**IR port functionality is not supported by StarTech.com

***Audio out port is not functional in video wall or point to multi-point configurations.

Receiver unit

Front view

Additional receiver units sold separately:

StarTech.com SKU: **ST12MHDLAN4R**



Back view



1. Function 1 button
2. Function 2 button
3. Dip rotary switch
4. Serial control (not active)*
5. Serial extension (for extending RS-232 signal)
6. Infrared (in) and (out) ports**
7. Audio in port***
8. Video resolution selection switch
9. DC 9-12V power jack
10. Network status LED
11. Reset button
12. LAN port (RJ-45)
13. HDMI output port (audio/video)
14. Analog audio output (3.5 mm stereo)
15. Link and power LED

* Serial control port is not active. To control the ST12MHDLAN4K download our free mobile application. (see Page 6).

** IR port functionality is not supported by StarTech.com

*** Audio in port is not functional in Video Wall or Point to Multi-Point configurations.

Installation

Preparing your site

Note: The HDMI extender kit lets you extend your 4K30 video signals over a Gigabit LAN network, beyond the typical cable length restriction of 330 ft. (100m) of Gigabit network portals.

Refer to the manufacturer of the network equipment to determine the length restriction and to ensure the transmitter unit and receiver unit(s) are all within the restricted range of the nearest network portal.

Note: Ensure the transmitter unit, and receiver unit(s) are all situated near AC electrical outlets.

1. Determine where the local video source will be located and set up the transmitter near that location.
2. Determine where the remote display will be located and set up the receiver near that location.
3. (Optional) If you're using additional displays, determine where they will be located and set the additional receiver unit(s) near that location.

Hardware installation

Video wall or point to multi-point installation with a Gigabit LAN network.

1. Install the transmitter unit.
 - a) Connect your video source to the transmitter's video input port.
 - b) Connect the transmitter's DC 9-12V power jack to an AC electrical outlet, using one of the included power adapters.
 - c) (Optional) If you intend to add a separate 3.5 mm audio source that can be embedded into the HDMI signal and selected as the audio source, connect a 3.5 mm audio cable to your audio source device and to the transmitter's analog audio source port.
2. Install the receiver unit(s).
 - a) Connect a display to the receiver unit's video output port using an HDMI cable.
 - b) Connect the receiver unit's power jack to an AC electrical outlet, using one of the included power adapters.
 - c) (Optional) If you are using additional ST12MHDLAN4R receivers (sold separately), repeat steps [a] through b)] for each additional receiver.

Note: The rotary dip switches on the transmitter and each receiver connected to the network must be set in the same position for the devices to communicate.

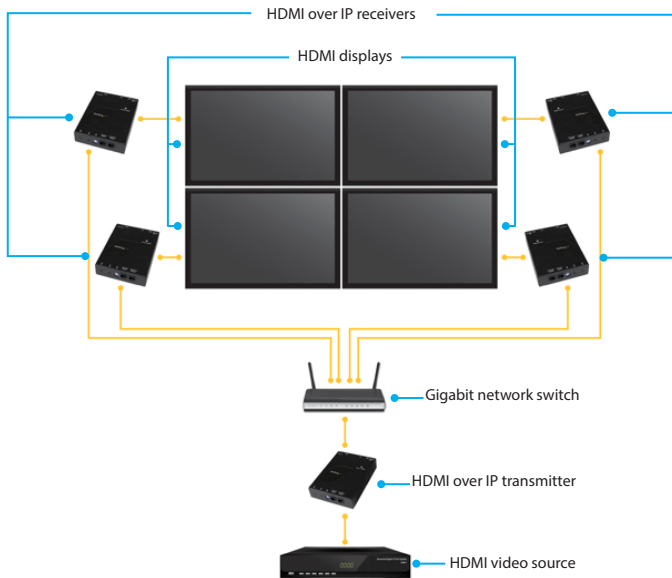
3. Connect the devices to a Gigabit LAN network

- a) Connect an RJ-45 terminated Cat5e or Cat6 Ethernet cable to the LAN port on the transmitter unit, and to each of the receiver units.
- b) Connect the other end of the Cat5e or Cat6 cable to a Gigabit LAN hub, router or switch.

Note: Your router must support IGMP snooping and Jumbo frames. Please refer to your network switch or router documentation to ensure IGMP snooping is supported and enabled.

- b) Connect the other end of the Cat5e or Cat6 cable to a Gigabit LAN hub, router or switch.

4. Verify that the image from your video source appears on video display(s) attached to the receiver unit(s).



(Additional receiver units sold separately, StarTech.com SKU: ST12MHDLAN4R)

5. (Optional) Connect external 3.5 mm speakers to your remote receiver(s) Analog audio output port.
 6. Select your audio source.
 - a) If you'd like the remote device(s) (external speakers and HDMI displays) to output the native HDMI audio that's on your HDMI source, set the transmitter's audio selection switch to Video.
 - b) If you'd like to use the 3.5mm audio source that you connected to the Analog audio source port, set the transmitter's audio selection switch to Audio In.
- Note:** Both the HDMI output port and the Analog audio output will output whatever audio source is selected.

Hardware Reset Procedure

Note: If a video signal does not appear on the display, a hardware reset can be performed on the Transmitter Unit or individual Receiver Units.

1. Press the reset button for more than 3 seconds on the device using a pin point tool, such as a ballpoint pen or a bent paper clip.
2. After 3 seconds, disconnect the power adapter while holding the reset button.
3. Release the reset button, and reconnect the power adapter.

LED Status

Unit	LED Colour/ Behaviour	Status
Transmitter	Green	Only power is connected, Network connection cannot be established
Receiver	Red	Only power is connected, Network connection cannot be established
Transmitter	Flashing Green/Blue	Power and network cables are connected
Receiver	Flashing Red/Blue	Power and network cables are connected

Note: With a display connected, a working receiver unit will show the StarTech.com splash screen when booting, followed by a black screen with some text in the lower left and right corners. The transmitter will not show any video output with a display connected.

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 on iOS for your iPhone or iPad, Android™ for your smartphone or tablet, and for the Google Chrome™ browser.

To install the software:

1. Visit <http://www.StarTech.com/ST12MHDLAN4K>, using the device you intend to install software on.
2. Under the overview tab, select the link for the store that corresponds with your device.



Select the option to download and install the software from the store page.

3. Open the software, to verify that it has installed correctly.

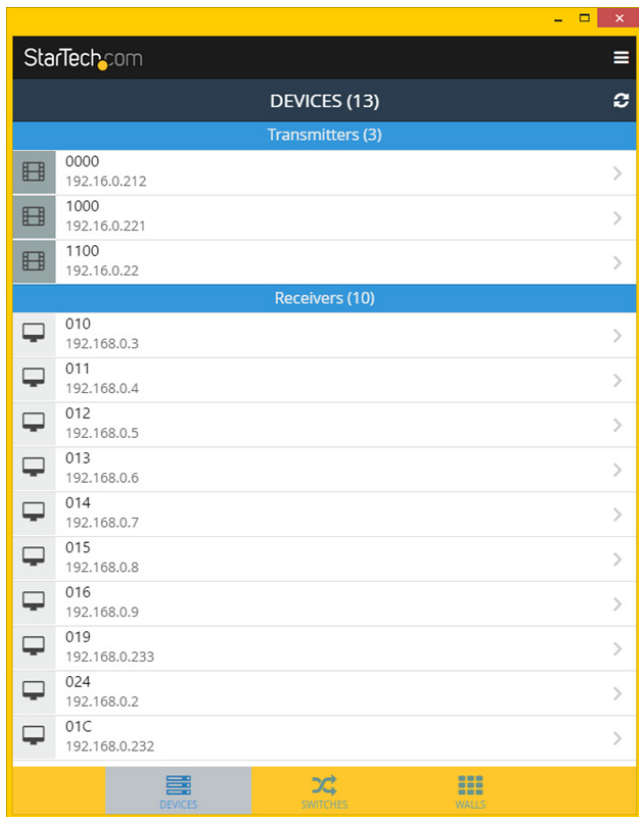
Software operation

Connecting your 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. Ensure your computer, smartphone or tablet that the software has been installed on is connected to the same network as your transmitter(s) and receiver(s), and launch the application.

- Once launched, the application will open on the Devices tab, and will automatically search for transmitters and receivers on your network and list them within the Devices tab.



Note: you can re-initiate the device search, by selecting the refresh button in the top right-hand corner of the Devices tab.



3. By default, each video device will have an IP address in the range of 169.254.x.x with a subnet mask of 255.255.0.0.

Each transmitter and receiver must have an IP address in the same range, and have an identical subnet mask as each other, and the tablet, smartphone or computer you have the software installed on.

For example: If your transmitter has an IP address of **169.254.10.10** with a subnet mask of 255.255.0.0.

You must ensure the tablet, smartphone or computer you have the software installed on and each receiver has an IP address that starts with **169.254.x.x** (with a varying last two digits represented here by xx) and a subnet mask of **255.255.0.0**.

To adjust the IP address and subnet mask of your transmitter(s) and

DEVICES (13)	
Transmitters (3)	
 0000	192.16.0.212
 1000	192.16.0.221

receiver(s):

IP: 192.16.0.212



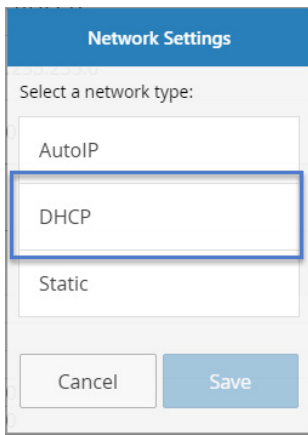
- a. Select the transmitter or receiver you'd like to adjust from the Devices tab.

The screenshot shows a 'Network Settings' dialog box. At the top, there is a blue header with the text 'Network Settings'. Below the header, the text 'Select a network type:' is displayed. There are three radio button options: 'AutoIP', 'DHCP', and 'Static'. The 'Static' option is selected, indicated by a checkmark in a box to its right. Below the 'Static' option, there are two text input fields. The first is labeled 'IP Address' and contains the text '192.16.0.212'. The second is labeled 'Subnet Mask' and contains the text '255.255.255.0'. At the bottom of the dialog box, there are two buttons: 'Cancel' and 'Save'.

- b. Click the edit icon listed in the IP address section.
- c. Select **Static IP** and type an IP address and mask for the device.

Or

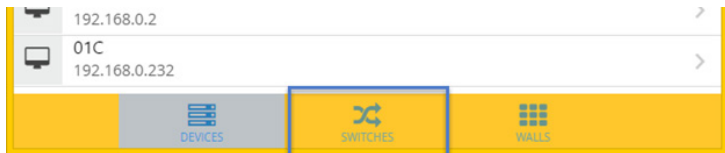
Select DHCP and your network automatically assign an IP address and mask to for the device in the range of the rest of your network devices.



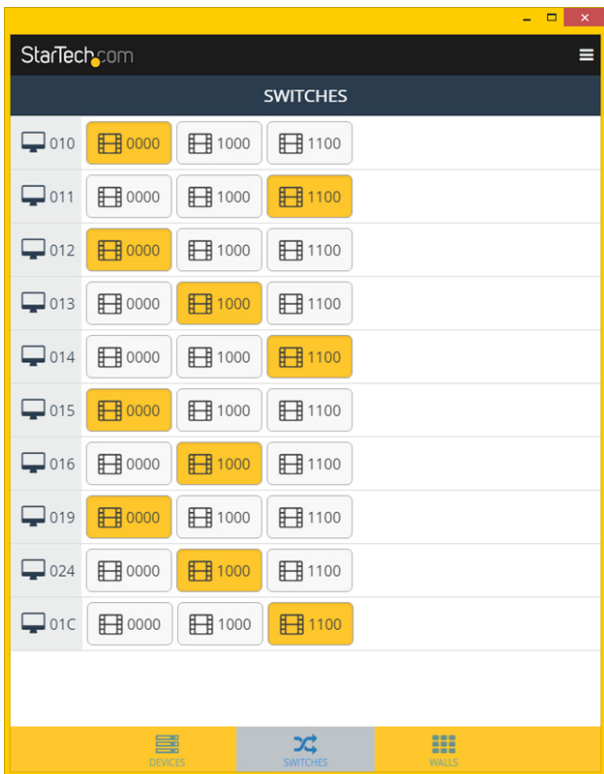
Note: DHCP must be enabled on your network to automatically assign an IP address and mask in that range.

Switching your remote displays between video sources

1. Once the application is launched, select the Switches tab.

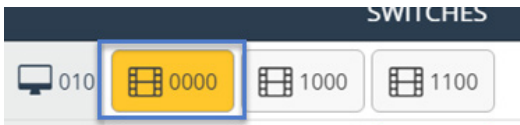


2. A list of each connected receiver will be displayed with all available transmitters displayed beside them. The transmitter that is currently selected for each receiver will be highlighted in yellow.



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.

3. To assign a video source, or change your video source, select the transmitter listed next to your receiver that you'd like to display.



4. The transmitter will turn yellow and your 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. Once the application is launched, select the Walls tab.



2. Select the + icon to launch a wizard that will walk you through your video wall creation.



No walls have been created on this device.

To create a wall, press the + icon above.

3. The first page in the wizard enables you to specify the walls name as well as the number of rows and columns you would like to use in your video wall. Each row and column will represent a display in your video wall. Type your preferred name and specify the number of rows and columns, then click next.

Create a new wall
Name the video wall, select the number of rows and columns, and then tap next.

Wall Name:

2 rows x 2 columns

Note: a Wall Name will be listed by default, once you type a new name the default name will be overwritten.

4. The next page in the wizard will create an example of the video wall with the number of rows and columns you specified.

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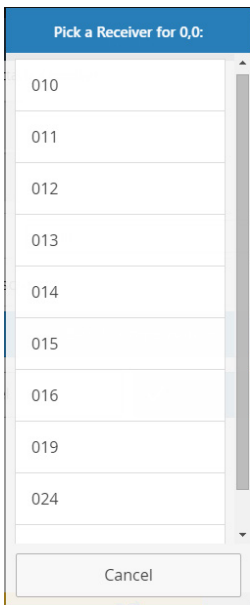
← Video Wall Wall0

Tap each monitor below to attach a receiver:

R0C0	R0C1
R1C0	R1C1

Name:

You will need to use this example to specify which receivers are represented within your video wall configuration. Select the receiver from the video wall example to display a list of all connected receivers, then choose the receiver that corresponds with the proper location within your video wall configuration.

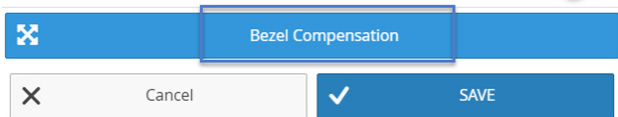


Note: If you would like to see the receiver device name on each screen, so you can easily identify which display is connected to each receiver, please select the show device names on screen switch. This can be deactivated once you have identified your displays.

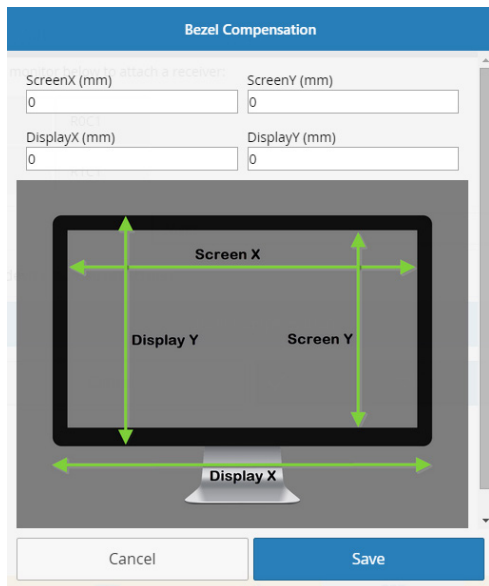
Show device names on screen



5. (Optional) If the displays in your video wall configuration have large bezels or empty space between them, you can scale the image on the displays to create a more natural, seamless look by specifying the bezel compensation. Click the Bezel Compensation button to open the window.



On the bezel compensation window, enter the following measurements in millimeters (mm): screen width of each display (ScreenX), screen height of each display (ScreenY), total width of each display (DisplayX) and total height of each display (DisplayY). Then click the Save button.



- The wizard is now complete and your created video wall configuration will appear on the Walls tab.

You can select or switch your video source for each created video wall configuration clicking transmitters listed below each created video wall configuration.



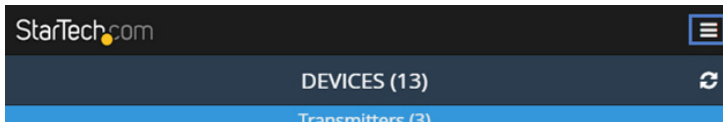
Notes:

- The display indicators will show the status of the current wall. Blue indicates that the display is active, Grey indicates it is being used for another wall or switch.
- 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.



Advanced operation and help

You can access the software menu from any screen by clicking the menu icon in the top right-hand corner of the application.



From the menu you can access each of the options below.

? Help

🔍 Device Search Mode: Multicast DNS

🗑️ Clear All Settings

▶ Demo Mode

Help:

Lists information and walk-throughs regarding operation of the application.

Device Search Mode:

Enables you to define your preferred method of transmitter and receiver identification over your network that the software uses. You can choose between two methods of identification: Multicast DNS or Target IP for your transmitters and receivers.

Multicast DNS: 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 set ups 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 connected transmitters and receivers to test the functionality of the software.

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For the latest drivers/software, please visit www.startech.com/downloads

Warranty information

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