

User Manual

Version A3

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this product near water.

6. Clean only with a dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. Batteries that may be included with this product and/or accessories should never be exposed to open flame or excessive heat. Always dispose of used batteries according to the instructions.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Connect section of the Gefen website at http://www.gefen.com/connect/warranty-and-return-policy

Technical Support

1-707-283-5900 1-800-472-5555
8:00 AM to 5:00 PM Monday - Friday, Pacific Time

Email

support@gefen.com

Web

http://www.gefen.com

Mailing Address

Gefen
Nortek Security & Control, LLC
c/o Customer Service
1800 S McDowell Blvd
Petaluma, CA 94954 USA

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Important

- When connecting through a Local Area Network, a managed gigabit switch is required. Jumbo Frame Support (8k or greater) and IGMP Snooping must be enabled.
- A dedicated LAN is not required but highly recommended.
- Only the HDMI and DisplayPort™ Inputs and Outputs will pass content from HDCP-encoded sources such as Blu-ray players and PlayStation® console systems. Other formats do not support HDCP content. If HDCP encrypted content is being passed, the output will not be active.
- We recommend that Sender and Receiver are first connected directly and functionality/performance is fully verified before integrating them into a Local Area Network.
- Always make sure that all units within a system are running the latest
- This product has been specifically designed for use with the Gefen Syner-G™ Software Suite, available for download at www.gefen.com. The Gefen Syner-G™ Discovery and Show-Me features simplify initial IP configuration.
- Gefen highly recommends the Gefen EXT-CU-LAN Matrix Controller for setting up and controlling the operation of an AV-over-IP network using these products. Alternatively, the Syner-G™ software can be used for IP configuration and firmware updates.
- Shielded CAT-5e (or better) cables used between the Sender and the Receiver unit or between each unit and the IP switch, should not exceed 330 feet (100 meters).
- By default, all Sender and Receiver units are set to channel 0.
- The HDMI inputs and outputs on these products also support Single-Link DVI and its standard VESA resolutions. Dual-Link DVI is not supported.
- By default, each device is setup in unicast mode and the source device will use the EDID from the display (or other sink device) which is connected to the Receiver unit.
- If terminating network cables in the field, please adhere to the TIA/EIA568B specification. See the Network Cable Diagram (page 175) for details.

c UL us This product uses UL-Listed power supplies

Supported USB Devices

- HID-class devices: keyboard, mouse, joystick, and touch panels.
- Bulk-only storage devices: USB flash drive, most storage devices, DVD-ROM, card readers, and printers.

· Known supported devices

- USB to RS-232 adapter.
- Mobile devices: Android, iOS mobile devices.
- Connectivity devices: infrared remote controller, Bluetooth dongle.
- Security devices: Key dongle, security card reader.
- Full-speed USB audio devices.

· Known Limits:

- High-speed isochronous devices, such as webcams are NOT supported.

Licensing

This product uses software that is subject to open source licenses, including one or more of the General Public License Version 2 and Version 2.1, Lesser General Public License Version 2.1 and Version 3, BSD, and BSD-style licenses. Distribution and use of this product is subject to the license terms and limitations of liability provided in those licenses. Specific license terms and Copyright Notifications are provided in the source code.
For three years from date of activation of this product, any party may request, and we will supply, for software covered by an applicable license (e.g. GPL or LGPL), a complete machine-readable copy of the corresponding open source code on a medium customarily used for software interchange. The following software and libraries are included with this product and subject to their respective open source licenses:

· jQuery
· Linux

Features

- Extends video, USB, RS-232, 2-way analog audio, and IR, using a Gigabit Local Area Network
- Independent video, USB, RS-232, IR, and audio routing**
- Backward-compatible with first generation Gefen AV over IP products
- HDMI and DisplayPort™ products support input resolutions up to 4K 60Hz 4:2:0 and output resolutions up to 4K 30Hz 4:4:4
- DVI and VGA products support input and output resolutions up to 1080p Full HD and 1920x1200 (WUXGA)
- Video output on Sender unit for local monitoring of the source (except DisplayPort™)
- KM Emulation feature facilitates real-time, simultaneous Keyboard and Mouse control of each source from all connected workstations
- Integrated scaler ensures maximum compatibility and best possible viewing experience with different contents and displays
- Built-in video wall controller accommodates any number of rows and columns up to 16x16
- Built-in Audio De-Embedder on HDMI and DisplayPort™ Receivers breaks out 2 channel analog, 2 channel PCM, and up to 5.1 channels of Bitstream audio from the HDMI signal, allowing the audio content to be sent to external amplifiers and music distribution systems for added impact
- MFU (Mass-Firmware-Update), quick and automated configuration, and enhanced control capabilities and system security when used with the Gefen EXT-CU-LAN Matrix Controller
- Enhanced API for added functionality with third-party control systems
- Built-in web interface, Telnet, and UDP
- Compatible with the Gefen Keyboard Switching Controller software, available for download at www.gefen.com
- Supports 39,900 Senders and a combination of over 65,000 Sender and Receiver units, depending on the network bandwidth and number of ports on your network switch
- Two USB 2.0 ports with data rates up to 480 Mbps and backward-compatibility with USB 1.1
- Two USB 1.1 ports with KM Emulation, for use with Human Interface Devices (H.I.D.)
- 802.3af standard Power-over-Ethernet allows the new Sender and Receiver units to be powered through a standard PoE-enabled IP network switch, without the need for external power supplies
- Two-port Gigabit Ethernet switch built into the Receiver unit

* Features and specifications are subject to change without notice.
** Pending features to be activated via an upcoming firmware update.

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- Mode switch on Sender for sharpness or motion-optimization of image
- Field-updatable firmware via EXT-CU-LAN controller or the built-in web server interface
- Locking power supply connectors
- Half-rack width Sender and Receiver enclosures are rack-mountable using EXT-RACK-1U-GRY
- Sender and Receiver can also be surface-mounted using the included L-brackets
- Low profile Receiver enclosure features an IR Extender port and can be hidden away behind the display

* Features and specifications are subject to change without notice.
** Pending features to be activated via an upcoming firmware update.

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Packing List - Sender Unit

The following items are included in the Sender Unit package. If any of these items are not present in the box when you first open it, please contact Gefen Technical Support as soon as possible.

(1) Sender unit
(1) 5V 2.6A Power Supply
(4) Self-Adhesive Rubber-Feet
(2) L-Shaped Mounting Brackets
(4) Machine screws for L-Shaped Mounting Brackets
(2) Machine screws for EXT-RACK-1U-GRY (sold separately)
(1) Quick-Start Guide

Packing List - Receiver Unit

The following items are included in the Receiver Unit. If any of these items are not present in the box when you first open it, please contact Gefen Technical Support as soon as possible.

(1) Receiver unit
(1) 5V 4A Power Supply
(1) AC Power Cord
(4) Self-Adhesive Rubber-Feet
(2) L-Shaped Mounting Brackets
(4) Machine screws for L-Shaped Mounting Brackets
(2) Machine screws for EXT-RACK-1U-GRY (sold separately)
(1) Quick-Start Guide

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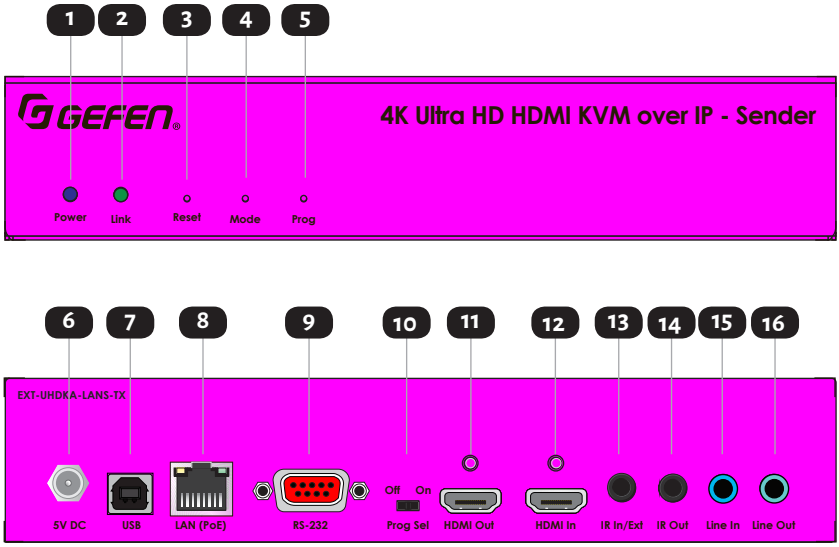
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Sender Unit

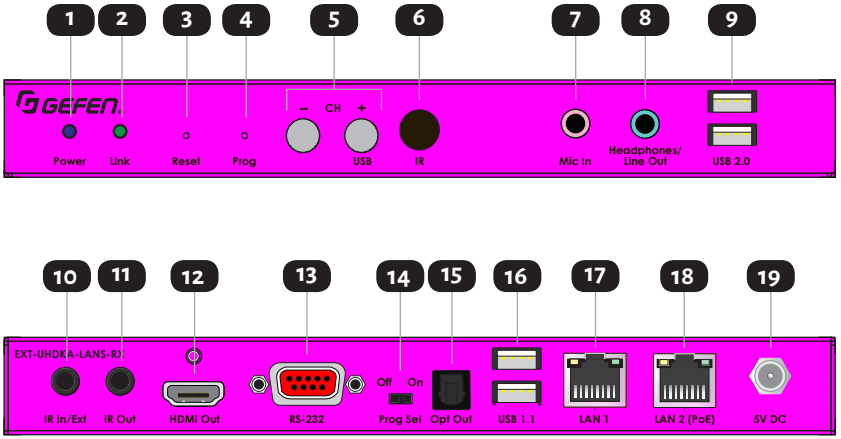


ID	Name	Description
1	Power	This LED indicator glows solid blue when the unit is powered.
2	Link	This LED glows solid green when a link is established between the Sender and Receiver.
3	Reset	Press this button, using the end of a paper clip or other pointed object, to perform a soft reset.
4	Mode	Press this button, using the end of a paper clip or other pointed object, to toggle between Graphic and Video modes.
5	Prog	This button is used for device recovery operations, in the event of a firmware update or other failure.

ID	Name	Description
6	5V DC	This power receptacle is used to connect the included 5V DC power supply. An external power supply is not required when connecting to a PoE-enabled switch using the LAN (PoE) port.
7	USB	Connect a USB cable from the computer to this USB port.
8	LAN (PoE)	Connect a CAT-5e or better cable up to 330 feet/100 meters, from this port to a PoE-capable network switch. If a PoE switch is not available or the Sender and Receiver are connected directly, then the included 5V DC power supply must be connected to the Sender unit.
9	RS-232	Connect an DB-9 cable from this port to a RS-232 automation control unit. See RS-232 Control (page 43) for more information.
10	Prog Sel	For normal operation, this switch should be in the **Off** position. Setting this switch to the **On** position, places the unit in the ready-state for firmware recovery or debug operations.
11	Video Out (except DisplayPort™)	Use a high quality video interconnect cable to the connect an AV source to the video **Out** port on the rear panel of the Sender unit. When using HDMI Senders, we recommend Gefen cables.
12	Video In	Use a high quality video interconnect cable to the connect an AV source to the video **In** port on the rear panel of the Sender unit. When using HDMI and DisplayPort™ Senders, we recommend Gefen cables.

ID	Name	Description
13	IR In/Ext	Connect an IR Extender (Gefen part no. EXT-RMT-EXTIRN) to this port. Alternatively, connect a 3.5mm mini-stereo connector from this port to the electrical IR output of an automation control system.
14	IR Out	Connect an IR Emitter (Gefen part no. EXT-IREMIT) from this port to the IR sensor of the device to be controlled.
15	Line In	Connect a 3.5mm mini-stereo cable from this port to the analog audio source.
16	Line Out	Connect a 3.5mm mini-stereo cable from this port to an amplifier or other audio output device.

Receiver Unit



ID	Name	Description
1	Power	This LED indicator glows solid blue when the unit is powered.
2	Link	This LED glows solid green when a link is established between the Sender and Receiver.
3	Reset	Press this button, using the end of a paper clip or other pointed object, to perform a soft reset.
4	Prog	This button is used for device recovery operations, in the event of a firmware update or other failure.
5	CH -/+	These buttons serve two purposes. 1) Press the - / + buttons button to decrement / increment, respectively, the current channel number. See Setting the Video Channel (page 27) for more information. 2) Press and hold the + ("USB") button to gain access to the USB port of a source. See USB Control (page 46) for more information.

ID	Name	Description
6	IR	This IR sensor receives and passes signals from an IR remote control to the selected Sender unit.
7	Mic In	Connect a microphone to this port..
8	Headphones / Line Out	Connect a pair of headphones or powerted speakers to this port.
9	USB 2.0	Connect up to two USB 2.0 devices to these USB ports. For USB 1.1 devices, use the **USB 1.1** ports. Please note that *KM Emulation feature is only available on the USB 1.1 ports on the back panel. It is not available with these two USB2.0 ports.*
10	IR In/Ext	Connect an IR Extender (Gefen part no. EXT-RMT-EXTIRN) to this port. Alternatively, connect a 3.5mm mini-stereo connector from this port to the electrical IR output of an automation control system.
11	IR Out	Connect an IR Emitter (Gefen part no. EXT-IREMIT) from this port to the IR sensor of the device to be controlled.
12	Video Out	Use a high quality video interconnect cable to the connect a display to the video **Out** port on the rear panel of the Receiver unit. When using HDMI and DisplayPort™ Receivers, we recommend Gefen cables.

ID	Name	Description
13	RS-232	Connect a DB-9 cable from the Receiver unit to the display or another device to be controlled. See RS-232 Control (page 43) for more information.
14	Prog Sel	For normal operation, this switch should be in the **Off** position. Setting this switch to the **On** position, places the unit in the ready-state for firmware recovery or debug operations.
15	Opt Out (except VGA)	Connect a digital audio cable with a TOSLINK® connectors from this port to the digital audio input of an AV receiver or amplifier.
16	USB 1.1	Connect up to two USB 1.1 or HID devices (such as keyboard, mouse, or touchscreen) to these USB ports. For USB 2.0 devices, use the **USB 2.0** ports. *Please note that the KM Emulation feature only works with these two USB 1.1 ports. It is not available with the USB2.0 ports.*
17	LAN 1	Use this port to connect IP-enabled devices, or to daisy-chain additional Receiver units (only when a single source is used, otherwise bandwidth may be compromised). CAT-5e or better cables up to 330 feet/100 meters. This port is NOT PoE -capable.
18	LAN 2 (PoE)	Connect a CAT-5e or better cable up to 330 feet/100 meters, from this port to a PoE-capable network switch. If a PoE switch is not available or the Sender and Receiver are connected directly, then the included 5V DC power supply must be connected to the Receiver unit.
19	5V DC	This power receptacle can be used to connect the included 5V DC power supply. An external power supply is not required when connecting to a PoE-enabled switch using the LAN 2 (PoE) port.

The Gen 2.0 AV and KVM over IP Sender and Receiver units can be connected directly or through a Local Area Network (LAN). Both installations will be covered.

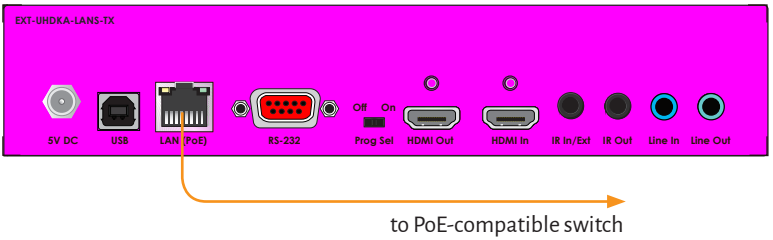
Local Area Network (LAN) Connection

When connecting the Sender and Receiver units to a Local Area Network (LAN), DHCP, static, or APIPA (Automatic Private IP Addressing) IP modes can be used. *DHCP* mode will use the DHCP server to automatically assign an IP address for each Sender and Receiver unit that is connected to the network. *Static* IP mode will allow the IP address for each Sender and Receiver unit to be configured manually. Contact your network administrator if necessary. APIAP mode assigns a class-B IP address, in the `169.254.x.x` range, to the Sender and Receiver units, if a DHCP server is not available.

1. Connect a CAT-5e (or better) cable between the **LAN (PoE)** port on the Sender unit and a Gigabit PoE-enabled IP switch.

2. Connect **LAN 2 (PoE)** on the Receiver unit to the same network switch. Each cable run can be up to 330 feet (100 meters).

Sender unit



3. If **NOT USING** A PoE-compliant switch, then connect the included 5V DC power supplies to the Sender and Receiver units.

Important

If the IP switch is PoE-compliant and the Sender and Receiver are connected through their PoE ports, external power supplies will not be required. However, additional Receivers or other devices connected to the LAN 1 port of a Receiver will require an external power supply.



Receiver unit

Connect to LAN

4. Launch the Gefen Syner-G™ app to discover the IP address of the Sender/Receiver unit. See the Gefen Syner-G™ User Manual for more information.

5. Click the desired unit from the list. The currently selected unit will be highlighted in red.

6. Use the fields in the Device Settings section to change the IP settings, as necessary.



Device Settings

Selected Unit

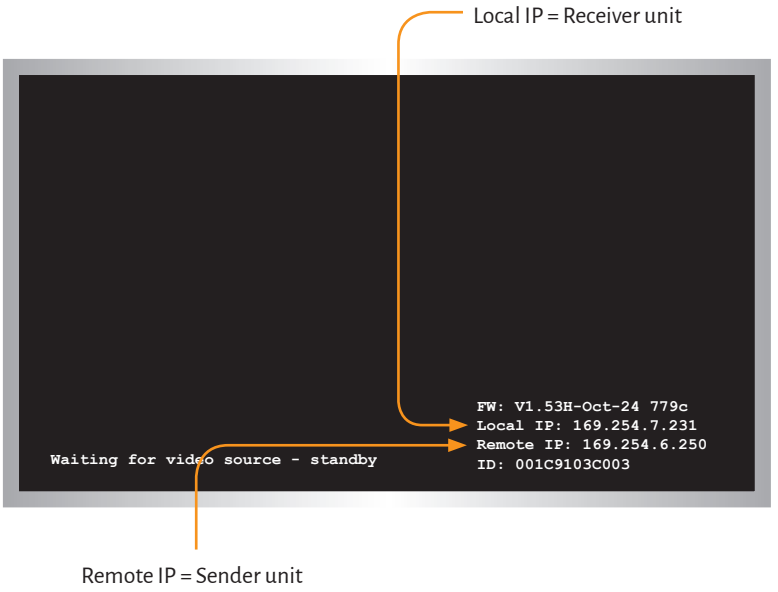
7. Once all IP settings have been adjusted, click the **Apply** button.

8. Click the Reboot button to apply changes.

9. Repeat steps 4 - 7 for each Sender and Receiver unit as necessary.

Note

The IP address of both the Sender and Receiver unit can be viewed by disconnecting the source device. Remove the HDMI cable between the Sender unit and the source device. The IP address of the Sender and Receiver will be displayed as shown:



10. Open your Web browser and enter the IP address of the desired Sender or Receiver unit in the address bar.

11. The **Login** screen will be displayed.

12. In order to change network settings, you must login as "Administrator". Select the "Administrator" username from the drop-down list.



13. Type the password in the **Password** field. The default password for "Administrator" is admin. The password is case-sensitive and will be masked as it is entered.

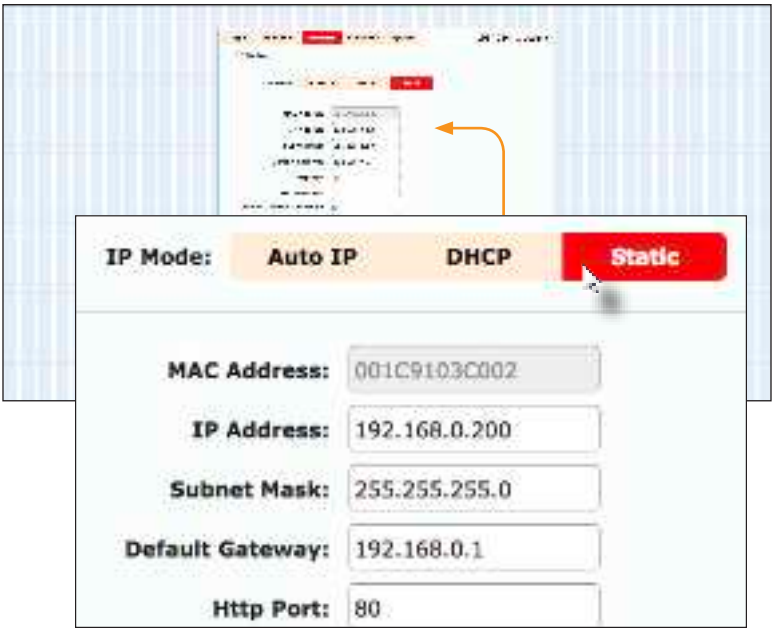
Note

Passwords and operating features can be changed when logged in as Administrator. The User option has limited access. To change password credentials, see Changing the Password (page 60) for more information.



14. Click the **Login** button.

15. The **Network** will automatically be selected. The current IP Mode will be highlighted within the IP Setup window group.



16. Click the desired **IP Mode** button.

- If **Static** mode is selected, then enter the IP Address, Subnet Mask, and Default Gateway. Contact your system administrator if necessary.
- If **DHCP** mode is selected, then the IP address, subnet mask, and default gateway will be specified by the DHCP server.

17. Click the **Apply** button to save the changes. This operation will require a reboot.
18. Click the **Reboot** button near the bottom of the page.
19. Repeat steps 12 - 21 for each Sender and Receiver to be configured.
20. After the desired IP settings have been applied, set the video channel for each Sender unit. See Setting the Video Channel (page 27) for more information.

Important

The use of a Managed Gigabit switch with "Jumbo Frame" and "IGMP Snooping" capability is required when connecting the Gefen AV over IP products to a network. The switch should be set to greater than 8K and IGMP Snooping must be enabled.

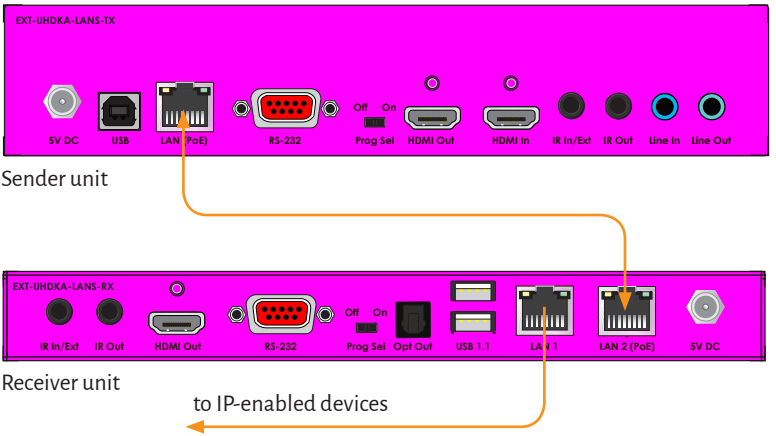
Using a Direct Connection

By default, all Senders and Receivers are shipped in APIPA (Auto) mode. This network mode is used for directly connecting Sender and Receiver units to one another. In APIPA mode, each Sender and Receiver unit assigns itself a unique IP address within the range of `169.254.x.x`. Using a direct connection each unit can remain in Auto mode of can be assigned a static of DHCP IP address using the Gefen Syner-G sofrware or manually through the built-in web interface.

1. Connect an HDMI cable to connect the source to the **HDMI In** port on the Sender unit.

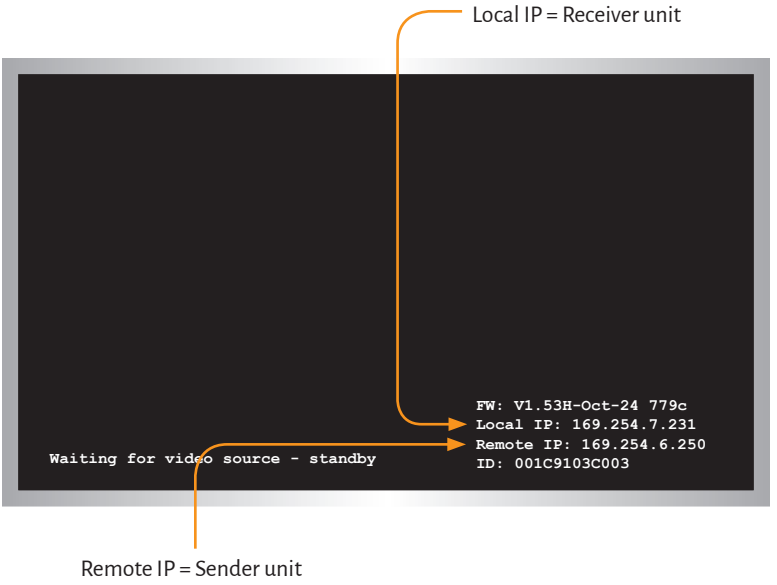
2. Connect an HDMI cable from the display to the **HDMI Out** port on the Receiver unit.

3. Connect a CAT-5e (or better) cable from the LAN (PoE) port on the Sender unit to the LAN 1 or LAN 2 (PoE) port on the Receiver unit. The other LAN port can then be used for connecting (daisy-chaining) an additional Receiver unit. Each cable run can be up to 330 feet (100 meters). Please note that PoE is not active in direct connection. The Sender and all connected Receivers will need to be powered using their external power supplies.



4. Connect the included 5V DC locking power supplies to both the Sender unit and Receiver unit. Do not overtighten the locking connectors. Plug the power supplies to available electrical outlets.

5. Obtain the IP address of both the Sender and Receiver unit by disconnecting the video cable from the Sender unit (or from the source device). Information, similar to the illustration on the next page, will be displayed.



6. Make note of both IP addresses. These IP addresses can be entered in a Web browser to access the built-in Web interface.

7. See Local Area Network (LAN) Connection (page 17) and follow steps 4 - 20, in order to access the built-in Web interface.

8. Set the video channel. By default, both the Sender and Receiver unit are set to channel 0. See Setting the Video Channel (page 27) for more information.

9. Once both Sender and Receiver units are configured using the built-in Web interface, the shielded CAT-5e cable, between the PC and the Receiver unit, can be disconnected.

10. See Supplementary Connections (page 24) for instructions on connecting USB, IR, RS-232, and audio cables.

Supplementary Connections

► USB

See USB Control (page 46) for more information on using USB devices.

1. Connect a USB cable from the computer to the **USB** port on the Sender unit.
2. Connect a maximum of two USB 2.0 devices to the **USB 2.0** ports, on the front panel of the Receiver unit. For USB 1.1 devices, connect the devices to the **USB 1.1** ports.

► IR

3. Connect an IR Emitter (Gefen part no. EXT-IREMIT) to the Sender unit and attach it to the IR sensor on the device to be controlled.
4. Connect an IR Extender (Gefen part no. EXT-RMT-EXTIRN) to the Receiver unit if the IR sensor will not be within line-of-site for proper IR control.

► Audio

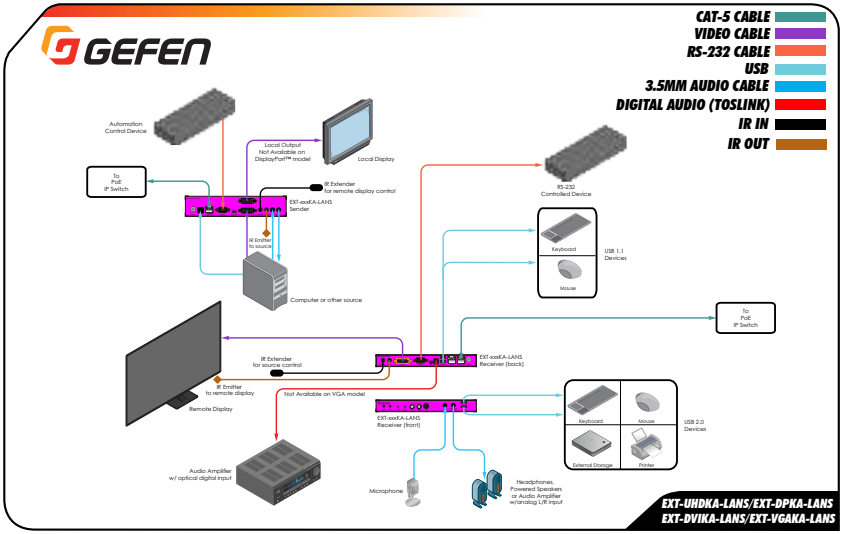
See Audio Connections (page 53) for more information on using audio devices.

5. Connect a 3.5mm mini-stereo cable from the **Line In** port on the Sender unit to an audio source.
6. Connect a pair of powered speakers (or another audio output device) to the **Line Out** port on the Receiver unit.
7. Connect a USB microphone / headset to one of the **USB 2.0** ports on the Receiver unit
8. Connect a pair of powered speakers (or another audio output device) to the **Line Out** port on the Sender unit.

► RS-232

9. Connect an RS-232 cable from the PC or automation system to the **RS-232** port on the Sender unit.
10. Connect an RS-232 cable from the Receiver unit to the RS-232 device to be controlled.

Sample Wiring Diagram



Note

The wiring diagrams above show IR Emitters (Gefen part no. EXT-IREMIT), IR Extender Modules (Gefen part no. EXT-RMT-EXTIRN), and various interconnect cables that are not included with the products. These Emitters, Extender Modules, and select cables are available for purchase from your Gefen dealer or distributor.

The **Power** and **Link** LED indicators on the Sender and Receiver unit provide basic information on their current status.

The information, in the tables below, applies to both the Sender and Receiver unit.

Link

Status	Description
Off	· Connection is not established. · Check the cable between the Sender and Receiver unit.
On	· Connection is established and video is streaming.
Blinking	· System is in a state of transition. Connection is established but streaming has not started. · No video source detected. · Check that the Receiver unit is connected to the host.

Power

Status	Description
Off	· No power.
On	· Power is on and the system is ready.
Blinking	· System is booting (not ready).

In order for a Sender and Receiver unit to communicate with one another, they must both be set to the same video channel. This is similar to changing the channel on a set-top box in order to view a different program. Pressing and releasing either the **CH +** or **CH -** buttons on the front of the Receiver unit can also be used to change the video channel.
Both methods will be covered in this section. By default, all Sender and Receiver units are set to channel 0 (zero).

Setting the Channel using the Web Interface

1. Access the Web interface by entering the IP address of the desired Sender or Receiver unit.
2. Login as "Administrator" or "User".
3. Click the **Functions** tab. The current channel is displayed within the **Channel Setup** window group.
4. Type the desired channel number. Channel numbers can range from 0 to 39900.
5. Click the **Apply** button on the right-hand side of **Channel Setup** window group.



6. The following message will be displayed, at the top of the page, indicating that the selected channel has been applied.



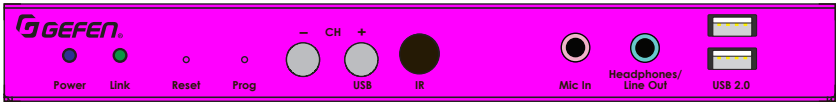
If the entered value is invalid, then the following message will be displayed:



7. Access the Web interface of the next unit (Sender or Receiver) by entering its IP address.
8. Repeat steps 1 - 5 for each Sender and Receiver to be changed.

Setting the Channel using the Front Panel

1. Press the **-** or **+/USB** button to display the current channel number. Channel numbers range from 0 to 39900.



Receiver unit

2. The current video channel of the Receiver unit will be shown on the connected display.



3. While the current video channel is being displayed, press and release the **Switch** button on the Receiver unit. The Receiver unit will change to the next available video channel that is being used by a Sender unit.

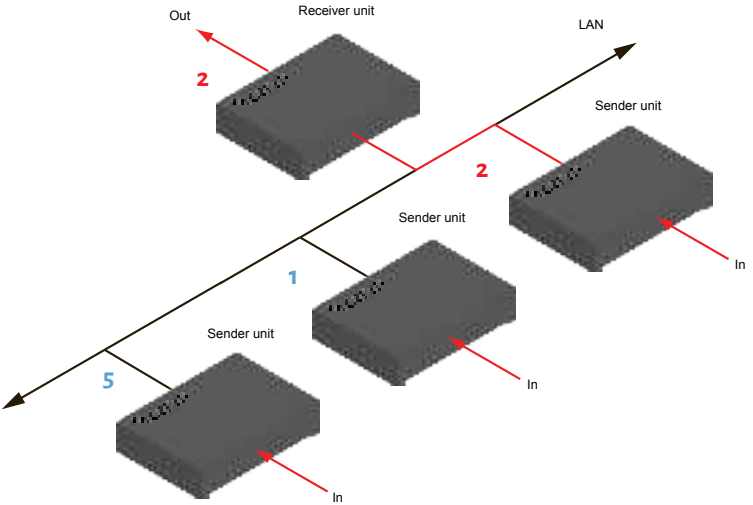
3. Once the current channel is displayed, do one of the following:

   · Press the **-** button to decrement the current channel number.

   · Press the **+/USB** button to increment the current channel number.

4. To set the video channel on a Sender unit, use the Web interface. See Setting the Channel using the Web Interface (page 27) for more information.

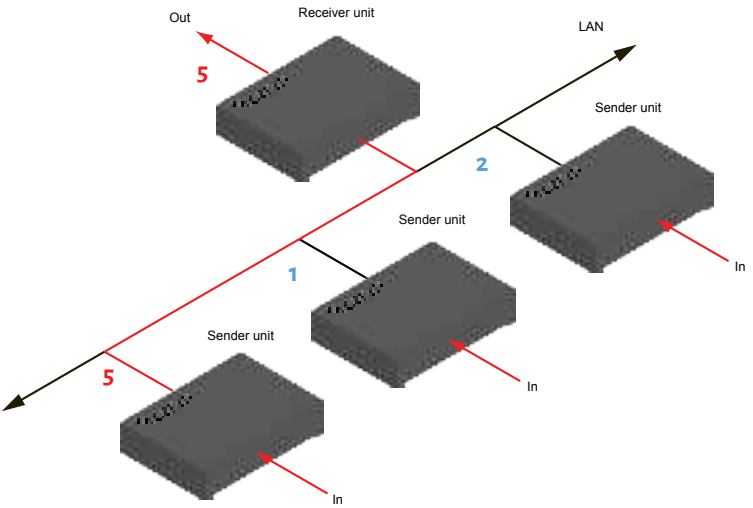
   The illustration below shows one Receiver unit and three Sender units. The numbers indicate the video channel for each unit. Here, the Receiver unit is currently set to channel 2 and is receiving the signal from the Sender unit, set to channel 2.



   To switch the channel, and view the source that is connected to the Sender on channel 5, press and release the **+/USB** button to increment the video channel until the display shows the number 5.



5. The Receiver unit, on channel 5, is now receiving the signal from the Sender unit on channel 5.



Use the **Block Video** option on a Sender unit to prevent video from being transmitted to each of the connected Receiver units (*multicast mode* only). Use the **Mask Video** option to selectively block video on the desired Receiver units.

► Mask Video

1. Access the Web interface of a Receiver unit by entering the IP address in the address bar of the browser.
2. Login as "Administrator".
3. Click the **Functions** tab.
4. Under the **Video over IP** window group, check the **Mask Enable** box to mask the video. Deselect this check box to unmask (enable) video.



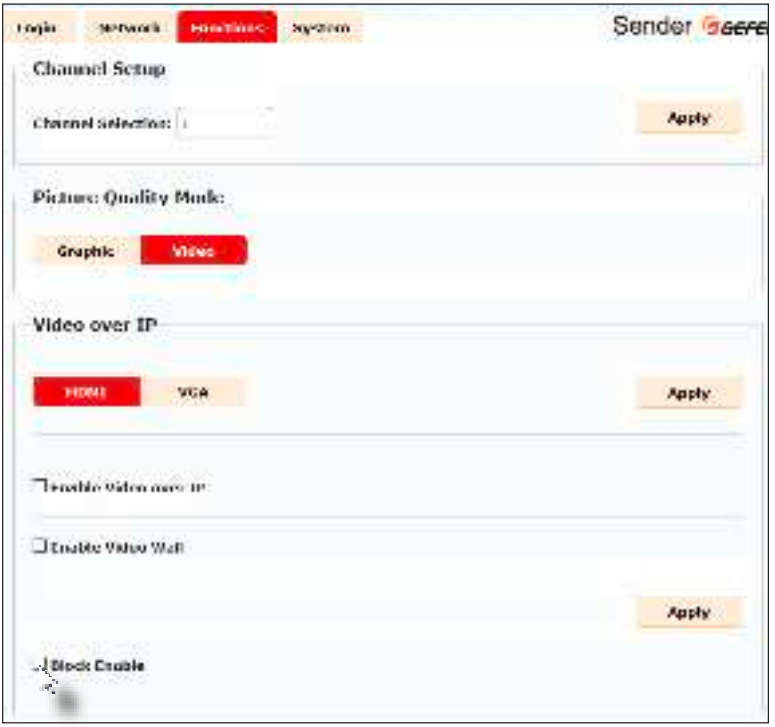
5. Click the **Apply** button within the **Video over IP** group.
6. Repeat steps 1 through 5 for each Receiver unit in the system.

▶ Block Video

Note

The **Block Enable** option is only applicable in *multicast mode*.

1. Access the Web interface of a Sender unit by entering the IP address in the address bar of the browser.
2. Login as "Administrator".
3. Click the **Functions** tab.
4. Under the **Video over IP** window group, check the **Block Enable** box to block the video. Deselect this check box to unblock (enable) video.



5. Click the **Apply** button within the **Video over IP** group.
6. Repeat steps 1 through 5 for each Sender unit in the system.

Configuring Unicast Mode

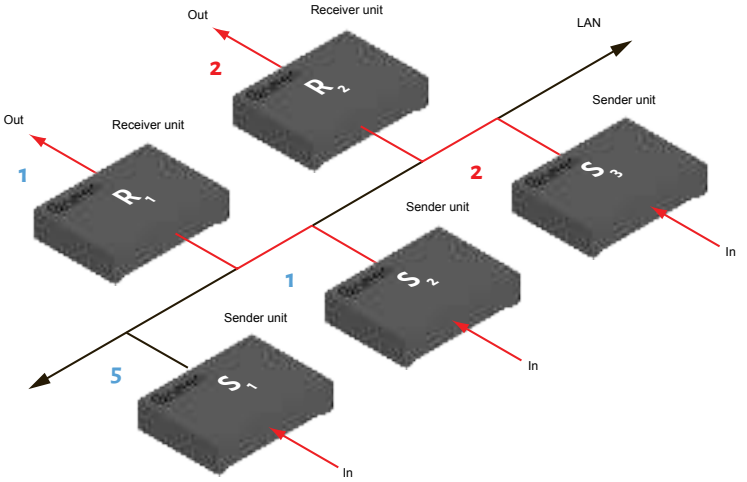
The term *unicast* is used to describe a configuration where information is sent from one point to another point. It is possible to have multiple Sender and Receiver units connected in a system. However, in *unicast* mode a Sender unit can communicate with only one Receiver unit at a time. In *unicast* mode, the Gefen AV over IP products function similar to a KVM switcher.

Note

The Gefen AV over IP Sender and Receiver units are shipped from the factory in *unicast mode*.

The illustration, below, shows 3 Sender units (S1, S2, and S3) and 2 Receiver units (R1 and R2) on a network, operating in *unicast* mode. The video channels are notated in blue.

Figure 2.1 - Unicast mode: A Sender unit can communicate with only one Receiver unit at a time.



1. Access the Web interface for each Sender and Receiver unit that will be using *unicast mode*. In this example, we will start with Receiver unit R1.

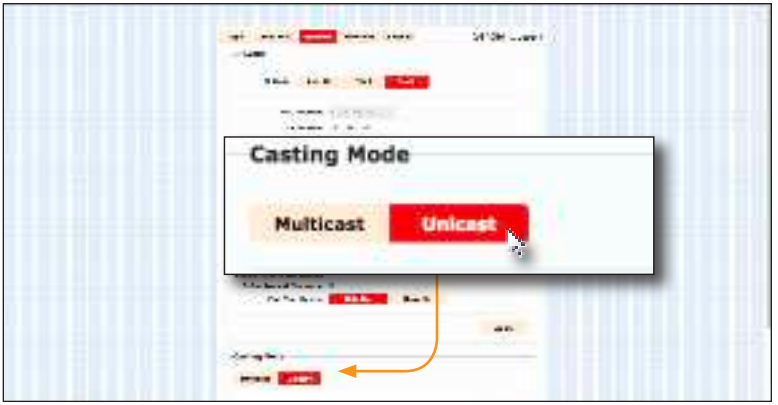
2. Login as "Administrator".

Tip

In unicast mode, the Gefen AV over IP Senders and Receivers function as a KVM switcher.

3. Click the **Network** tab.

4. Click the **Unicast** button under the **Network Mode** window group. When selected, the **Unicast** button will be highlighted in red.



5. Click the **Apply** button in the lower-right corner of the **Network Mode** group.

6. The following message will be displayed, at the top of the page, indicating that the casting mode has been applied to the Sender or Receiver unit.



7. Click the **Reboot** button at the bottom of the page. If the **Reboot** button is not clicked, the following message will be displayed, indicating that the unit must be rebooted.



8. Repeat steps 1 - 7 in order to configure the Sender unit for *unicast* mode.

Important

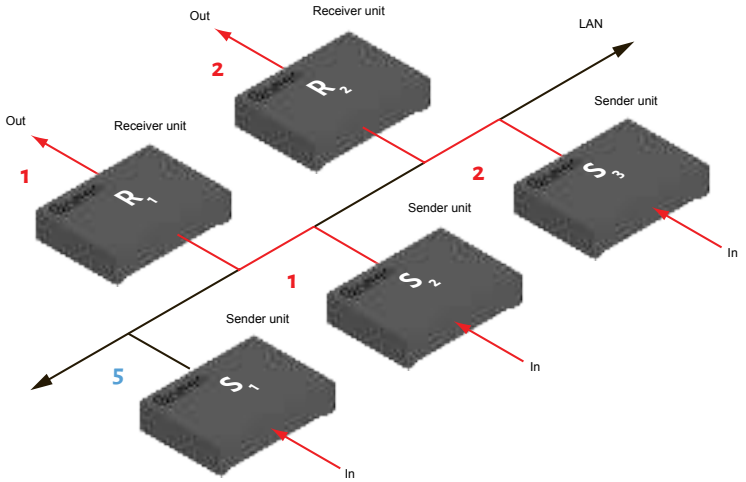
When switching between *unicast* and *multicast* modes, both Sender and Receiver units must be set to the same mode.

Switching between Sender units in Unicast mode

When multiple Sender and Receiver unit are used in *unicast* mode, the Gefen AV over IP Sender and Receivers behave as a switcher. In *unicast* mode, a Sender unit can communicate with only one Receiver unit at a time.

In the example below, Receiver unit R1 will be switched to receive the source connected to Sender unit S1. To do this, simply change the video channel.

Figure 2.2 - Unicast mode: Receiver unit R1 is connected to Sender unit S2.

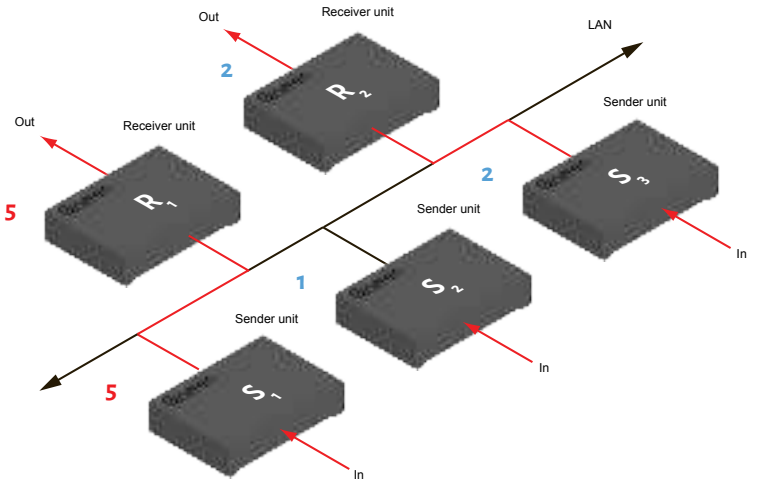


1. Access the Web interface for Receiver unit R1.
2. Login as “Administrator”.
3. Click the **Network** tab and change the video channel. Refer to Setting the Video Channel (page 27) if necessary.
4. Click the **Apply** button.
5. The following message will be displayed, at the top of the page, indicating that the new channel has been applied to the Sender or Receiver unit.



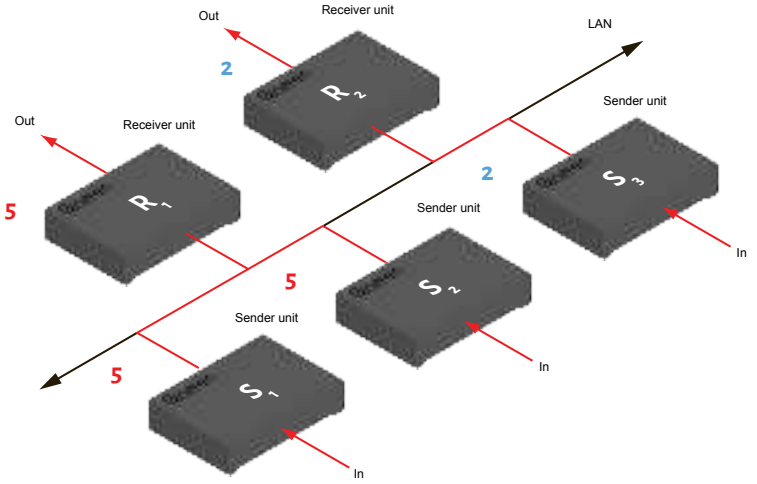
6. Receiver unit R1 is now receiving the UHD/HD source connected to Sender unit S1, as shown on the next page.

Figure 2.3 - Unicast mode: Receiver unit R1 is now connected to Sender unit S1.



Now, observe the result when both Sender S1 and S2 are set to channel 5:

Figure 2.4 - Unicast mode violation*: Two Sender units (S1 and S2) using the same video channel.*



In this example, Receiver R1 will continue to receive audio/video data from Sender S1, even though Sender S2 is set to the same channel. The reason for this is because Receiver R1 and Sender S1 were already set to the same channel and communicating (as depicted in Figure 2.3). However, this scenario violates the *unicast* mode rule: A Sender unit can communicate with only one Receiver unit at a time.

When using unicast mode, each of the Sender units must be assigned a unique channel and should never be changed. Use the Receiver unit to switch (channels) between Sender units.

Note

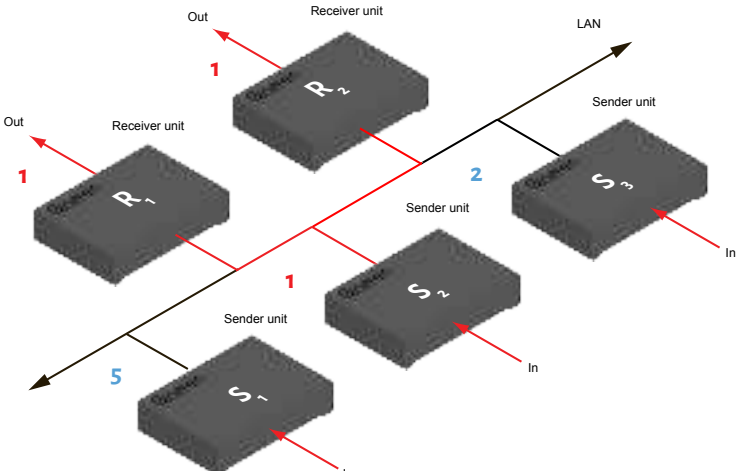
In *unicast* mode, if an additional Sender unit is introduced into a system with the same channel as another Sender unit, then the Receiver unit will continue to receive audio/video data from the Sender unit which was connected first.

Configuring Multicast Mode

The term multicast is used to describe a configuration where information is sent from one or more points to a set of other points. For example, a single Sender unit can transmit data to multiple Receiver units. In addition, if multiple Sender units are used, each Sender unit can transmit data to any Receiver that is not already receiving data from another Sender unit. In *multicast* mode, the Senders and Receivers function similar to a KVM matrix.

The illustration, below, shows 3 Sender units (S1, S2, and S3) and 2 Receiver units (R1 and R2) on a network, operating in *multicast* mode. The video channels are shown in blue.

Figure 2.5 - Multicast mode: A Sender unit can communicate with multiple Receiver units.



1. Access the Web interface for each Sender and Receiver unit that will be using *multicast mode*. In this example, we will start with Receiver S2.

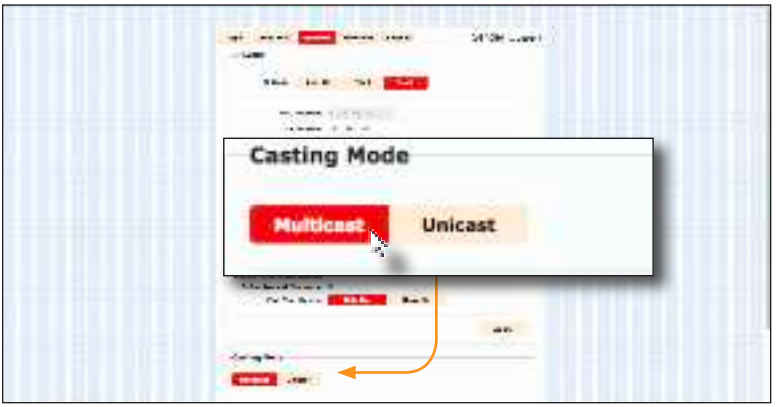
2. Login as "Administrator".

Note

In *multicast mode*, the Gefen AV over IP Senders and Receivers function as a KVM matrix.

3. Click the **Network** tab.

4. Click the **Multicast** button under the **Network Mode** window group. When selected, the **Multicast** button will be highlighted in red.



5. Click the **Apply** button in the lower-right corner of the **Network Mode** group.

   The following message will be displayed, at the top of the page, indicating that the casting mode has been applied to the Sender or Receiver unit.



   If a display is connected to the Receiver unit, then the message "Starting USB" will be displayed. For more information on using USB under multicast mode, see USB under Multicast Mode (page 48).

6. Click the **Reboot** button at the bottom of the page. If the **Reboot** button is not clicked, the following message will be displayed, indicating that the unit must be rebooted.



7. Repeat the steps above in order to configure the Sender unit to *multicast* mode.

Important

When switching between *unicast* and *multicast* modes, both Sender and Receiver units must be set to the same mode.

Gefen Syner-G Discovery

Enabling the Gefen Syner-G Discovery feature allows the Gefen Syner-G Software Suite or Gefen Discovery Tool App to locate a Sender and/or Receiver on a network. Once the software is able to locate the unit, IP settings can be changed as desired.

1. Access the Web interface by entering the IP address of a Receiver or Sender unit.
2. Login as "Administrator".
3. Click the **Network** tab.
4. Under the **IP Setup** window group, check the **Gefen Syner-G Discovery** box to allow the Gefen Syner-G software to locate the unit. If you do not want the unit to be discoverable, then un-check this box.
5. Click the **Apply** button.
6. Click the **Reboot** button at the bottom of the page to restart the unit and apply the change.



Finding Your Device

If several Sender and Receiver unit pairs are connected on a network, you may need to physically identify a particular Sender and/or Receiver unit. In such a case, use the **Find Your Device** feature.

1. Access the Web interface by entering the IP address of a Receiver or Sender unit.
2. Login as "Administrator".
3. Click the **Network** tab.
4. Under the **IP Setup** window group, click the **Show Me** button. By default, the **Hide Me** button will be selected.

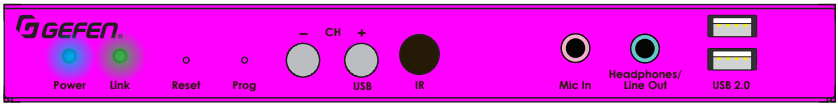
   Although shown, below, it is not necessary to have the **Gefen Syner-G Discovery** option *enabled* in order to use the **Find Your Device** feature.



5. The following message will be displayed, at the top of the page, indicating that the LED indicators on the unit are blinking.



6. The **Power** and **Link** LED indicators will continue to blink until the **Hide Me** button is clicked.



Receiver unit (shown)

7. Click the **Hide Me** button to stop both LED indicators from blinking.



8. The **Power** and **Link** LED indicators will stop blinking and the following message will be displayed at the top of the page.



The Gefen AV over IP Sender and Receivers support RS-232 pass-through, allowing the control of remote RS-232 devices. The Sender and Receiver unit which are being used to pass-through the RS-232 data must be set to the same baud rate as the RS-232 host and client.

In the example below, an RS-232 device has been connected to Receiver R1. We want to control this product from Sender unit S3, using an automation control device. The channel numbers are listed in blue.

Figure 2.6 - Basic RS-232 connection

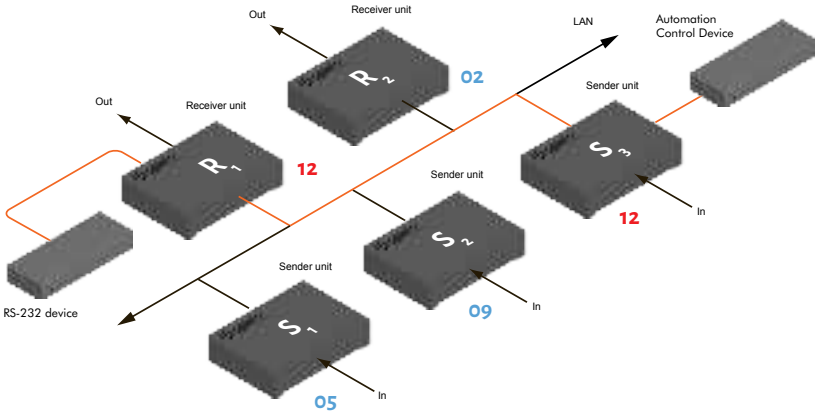


Table 2.1 - RS-232 settings for an arbitrary RS-232 device.

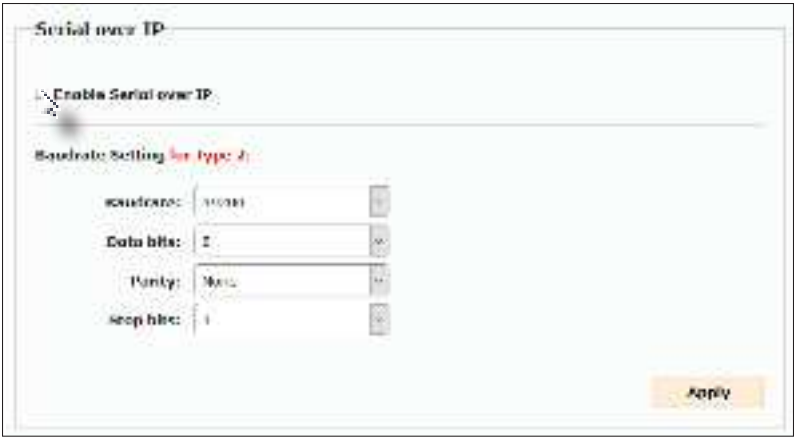
Description	Setting
Baud rate	19200
Data bits	8
Parity	None
Stop bits	1
Hardware flow control	None

Confirm that the same RS-232 settings are assigned to both the Sender and Receiver units. To do this, access the Web interface on both the required Sender unit and Receiver unit to set the proper RS-232 settings. Follow the instructions on the next page.

1. Access the Web interface for the Sender unit and login as "Administrator".

2. Click the **Functions** tab.

3. Locate the **Serial over IP** group and change the RS-232 settings to match the settings of the RS-232 device that is being used. In this case, we need to use the settings from Table 2.1 (see previous page).



4. Make sure that the **Enable Serial over IP** box is checked.

5. Click the **Apply** button in the lower-right corner of the **Serial over IP** group.

Important

If **Enable Serial over IP** is not checked, then RS-232 pass-through will be disabled.

6. The following message will be displayed, at the top of the page, indicating that the new Serial over IP options have been applied.



7. Click the **Reboot** button at the bottom of the page. If the **Reboot** button is not clicked, the following message will be displayed, indicating that the unit must be rebooted.

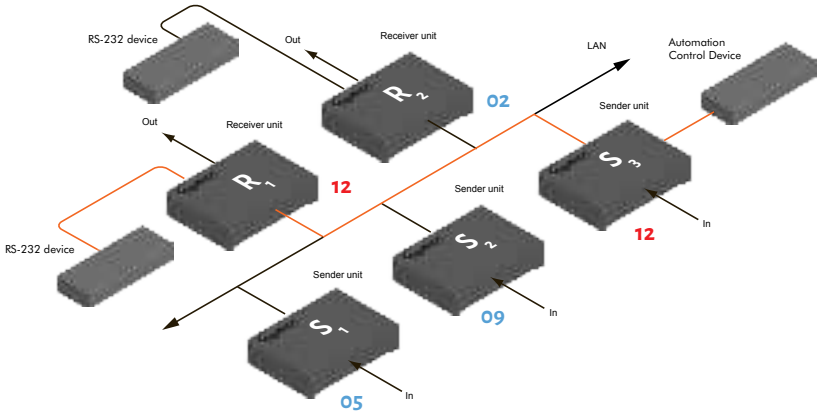


8. Repeat steps 1 - 7 for the Receiver unit.

RS-232 under Unicast Mode

In *unicast mode*, a Sender unit will be able to communicate with only one Receiver unit at a time.

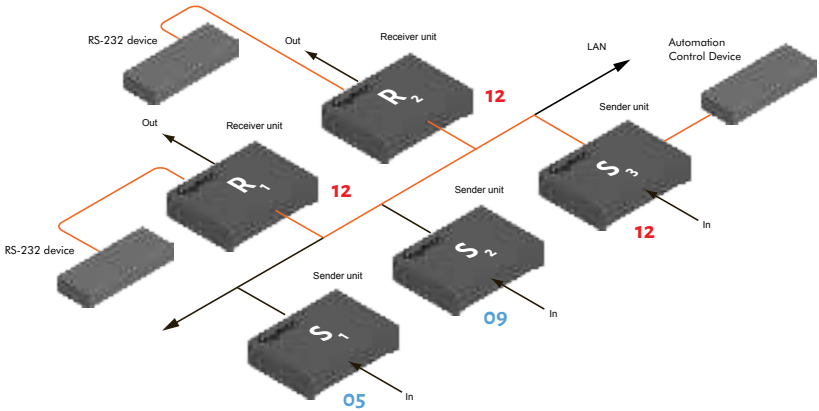
Figure 2.7 - In unicast mode, the host can talk to only one RS-232 device at a time.



RS-232 under Multicast Mode

In multicast mode, a Sender unit can communicate with multiple Receiver units simultaneously.

Figure 2.8 - In multicast mode, the host can talk to multiple RS-232 devices.



USB under Unicast Mode

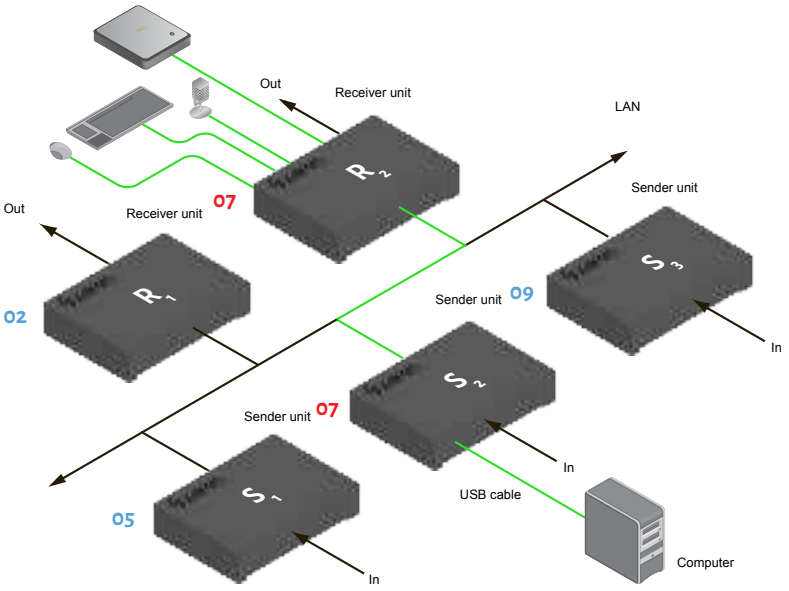
When connecting USB devices to the Gefen AV over IP Senders and Receivers, the functionality is similar to that of video and RS-232. See RS-232 under Unicast Mode (page 45) for more information.

Note

The Sender and Receiver units shipped from the factory in *unicast mode*.

As an example, we will start with our original diagram and connect a computer to Sender unit S2 and a keyboard, mouse, USB drive, and USB mic/headset to Receiver unit R2.

Figure 2.9 - Using USB devices under unicast mode.



1. Make sure the desired Sender and Receiver units are set to *unicast* mode. Refer to Configuring Unicast Mode if necessary.
2. Access the Web interface for the Sender unit.
3. Login as “Administrator”.
4. Click the **Functions** tab.

5. Locate the **USB over IP** group and make sure the **Enable USB over IP** box is checked. This is the default setting. Note that in *unicast* mode, the **Operation Mode** is automatically set to **Active on link** and cannot be changed.



6. Make sure that the **USB Mouse Mode** is set to **High Resolution**. This is the default setting. Use **Compatibility** mode *only* if using additional KVM switchers or other devices within the system that causes the mouse to behave erratically.

7. Click the **Apply** button within the **USB over IP** group, then click the **Reboot** button at the bottom of the page.

8. Connect the USB host (e.g. computer) to the **USB** port on the Sender unit.

9. Connect a USB device (keyboard and/or mouse) to a USB port on the Receiver unit. Up to four USB devices (two USB 1.1 and two USB 2.0) can be connected per network in *unicast* mode.

10. The keyboard and mouse (or other USB device) can now be used from the Receiver unit.

Important

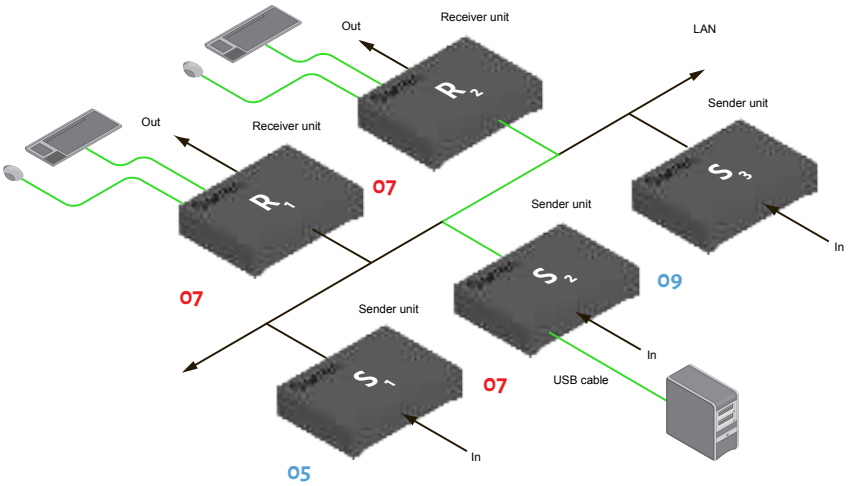
When enabling or disabling USB over IP, the **Apply** and **Reboot** buttons must be clicked to apply changes.

USB under Multicast Mode

When connecting USB devices to the Gefen AV over IP Senders and Receivers, the functionality is similar to that of video and RS-232. There are two USB modes available in multicast mode: *Active per request* mode and *Active on link* mode.

Using the last example, another keyboard and mouse device has been connected to Receiver R1. This will allow us to control the computer from two separate locations. For purposes of clarity, the USB drive and mic/headset have been removed.

Figure 2.9 - Using USB devices under multicast mode.



1. Make sure the desired Sender and Receiver units are set to *multicast* mode. Refer to Configuring Multicast Mode if necessary.

2. Access the Web interface for the Sender unit.

3. Click the **Functions** tab.

4. Locate the **USB over IP** group and make sure the **Enable USB over IP** box is checked. This is the default setting. See the illustration on the following page.



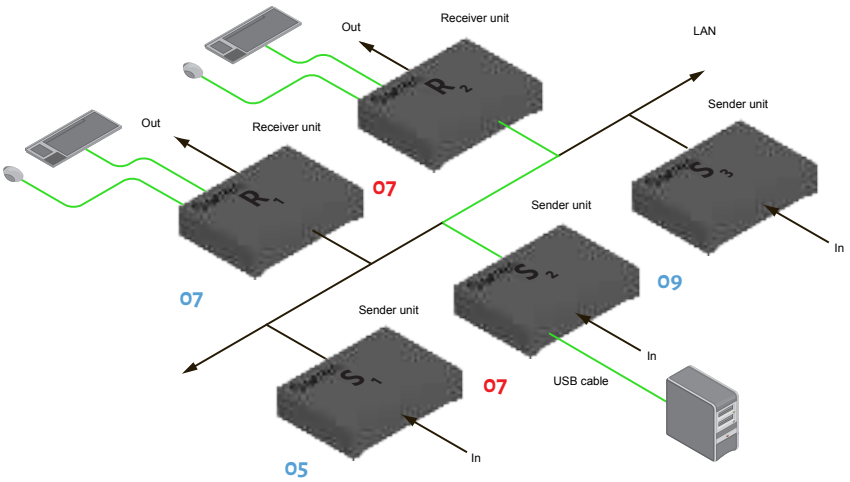
Note that in *multicast* mode, the **Operation Mode** for both Sender and Receiver units are automatically set to **Active per request** mode.

Under *Active per request* mode, multiple USB devices may be present on one or more Receiver units. However, only one Receiver unit can have USB control at a time.

By default, the first Receiver unit connected to the system will have USB control.
In the example, below, Receiver unit R2 currently has control (we arbitrarily connected Receiver unit R2 before Receiver unit R1).

See the diagram on the next page.

Figure 2.10 - Receiver unit R2 currently has USB control.



Important

If switching between *Active per request* mode and *Active on link* mode, the **Apply** and **Reboot** buttons must be clicked to apply changes.

The next example will consist of switching USB control between two Receiver units. Using the diagram, above, Receiver unit R1 will have USB control.

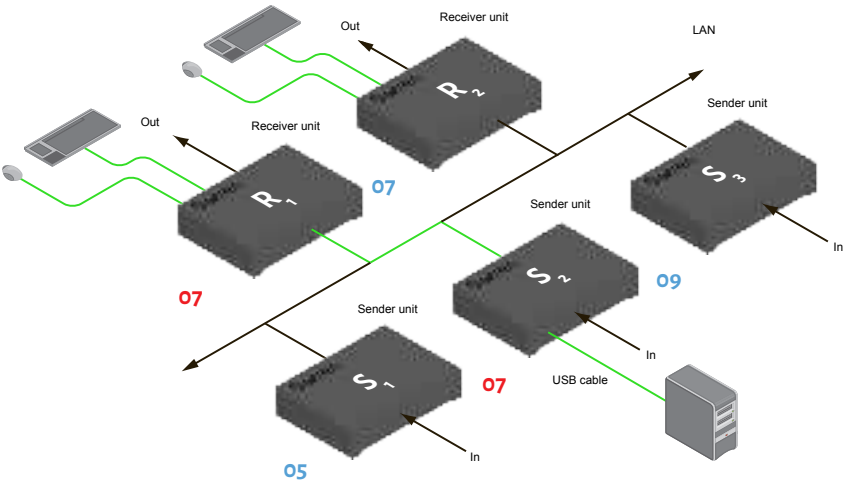
To assign USB control to another Receiver unit, follow the steps on the next page.

Active per request mode

1. Press and hold the **CH +** USB button on the desired Receiver unit, for at least two seconds.

2. The message “Starting USB” will appear on the connected display.

Figure 2.11 - Receiver unit R1 has USB control.



Important

If switching between *Active per request* mode and *Active on link* mode, the **Apply** and **Reboot** buttons must be clicked to apply changes.

3. In order to assign USB control to a different Receiver unit, repeat steps 1 - 2.

Active on link mode

Under *Active on link* mode, a maximum of four USB devices can be used within a system. In the diagram, on the previous page, the system is already using the maximum number of USB devices (2 USB devices per Receiver). If we had two more Receiver units (making a total of four Receiver units), we would only be able to connect one USB device to each Receiver unit. To switch to *Active on link* mode, follow the instruction below.

1. Access the Web interface for the Sender unit.
2. Login as "Administrator".
3. Click the **Functions** tab.
4. Locate the **USB over IP** group and make sure the **Enable USB over IP** box is checked. This is the default setting.



5. Click the **Active on link** radio button within the **USB over IP** group.
6. Click the **Apply** button within the **USB over IP** group.
7. The following message will be displayed, at the top of the page, indicating that the new Serial over IP options have been applied.



8. Click the **Reboot** button at the bottom of the page. If the **Reboot** button is not clicked, the following message will be displayed, indicating that the unit must be rebooted.



9. Repeat steps 2 - 8 for the Receiver unit.

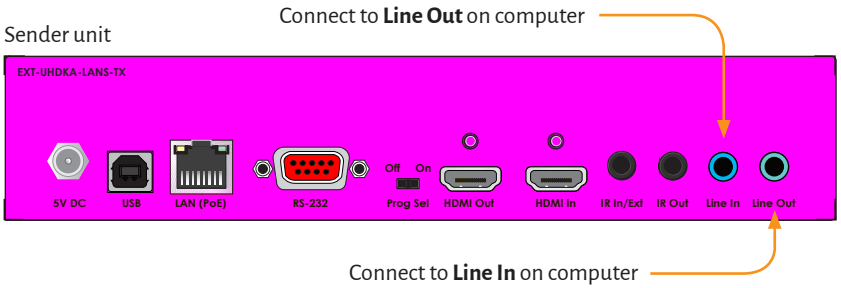
Audio works in both unicast and multicast modes. The only difference between the two modes is that the **Line In** port is automatically disabled, on all Receiver units, in *multicast* mode. To illustrate how audio works with the Gefen AV over IP Senders and Receivers, we will set up a microphone and some speakers.

1. Connect a 3.5mm mini-stereo cable from the **Line In** port on the Sender unit to the Line Out port on the computer.

Note

On HDMI and DisplayPort™ Senders, when a cable is connected to the **Line In** port on the Sender unit, it takes priority over and replaces the audio from the video input. The audio will be heard on the HDMI or DisplayPort™ Out, Line Out, and Opt Out ports on the Receiver unit.

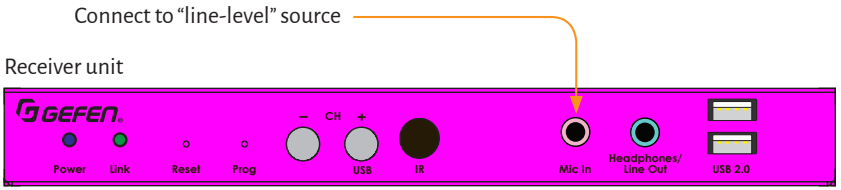
2. Connect another 3.5mm mini-stereo cable to from the **Line Out** port on the Sender unit to the Line In port on the computer.



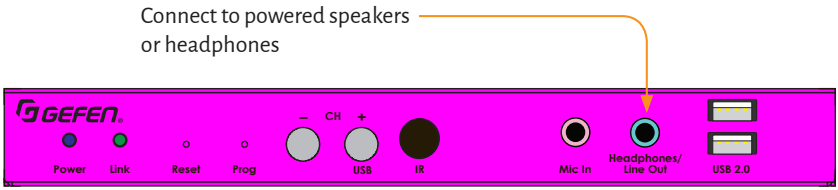
3. Connect a 3.5mm mini-stereo cable from the **Mic In** port on the Receiver to the output of a microphone pre-amp or other "Line Level" audio source.

Important

Some microphones may require a pre-amp connected inline to be compatible. Alternately, you can use a USB mic connected to one of the USB 2.0 ports on the Receiver.



4. Connect the **Line Out** port to powered speakers or a pair of headphones.
5. Connect a Gefen CAB-TLINK-6MM TOSLINK cable from the **Opt Out** port to the Optical Digital Input of an AV receiver or amplifier.



Receiver unit

In the diagram below, the mouse and keyboard USB devices have been removed from Sender unit S2 and Receiver unit R2, for purposes of clarity. Arrowheads indicate the audio signal path.

Figure 2.12 - Audio connections in unicast mode.

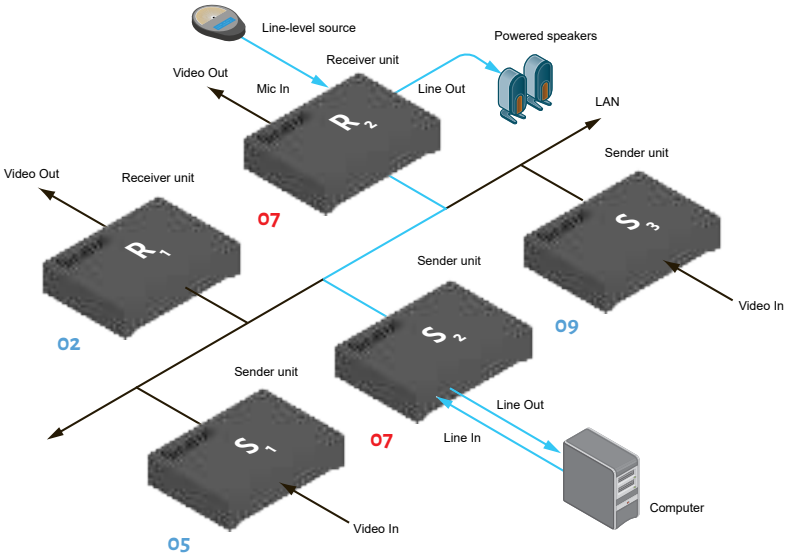
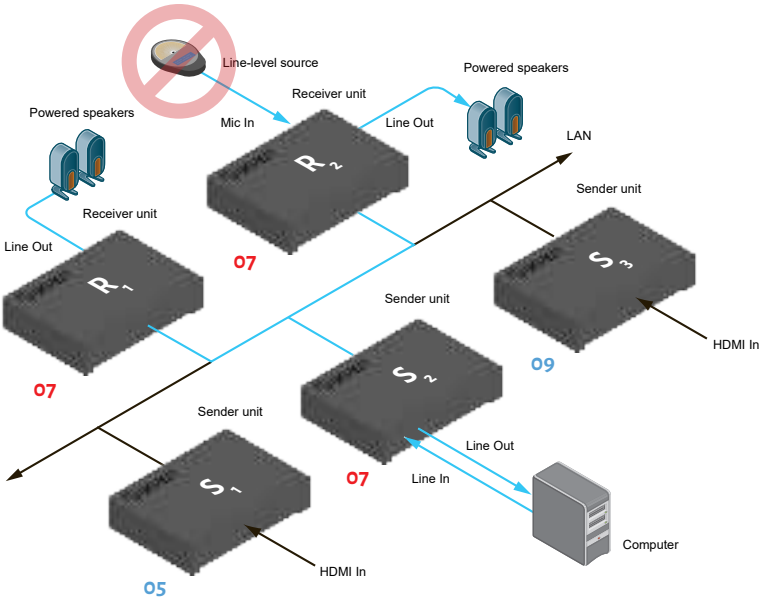


Figure 2.13 - The Line In port, on all Receiver units, is automatically disabled in multicast mode.



Audio Sources and De-Embedding

The following outlines the audio de-embedding functionality of this product.

- If a 3.5mm mini-stereo cable is connected to the **Line In** port on the HDMI or DisplayPort™ Sender unit, then the HDMI or DisplayPort™ audio will be disabled on the Receiver unit. The **Line Out** port, on the Receiver unit, will output audio from the source connected to the **Line In** port on the Sender unit.
- When a source is connected to the **Line In** port on the Sender unit, the audio will be heard on the **HDMI Out** or **DisplayPort™ Out**, **Line Out**, **Opt Out**, and **Coax Out** ports.
- The **Line In** port on the Receiver unit will only pass audio to the **Line Out** port on the Sender unit when in *unicast mode*.
- The **Opt Out** port will de-embed both 2-channel PCM and Bitstream (up to 5.1 channel) audio from the HDMI In or DisplayPort™ In port. High-resolution (lossless) audio will not be outputted.
- HDMI or DisplayPort™ source audio, from the Sender unit, will pass to the **HDMI Out** or **DisplayPort™ Out** and **Opt Out** ports on the Receiver unit. HDMI or DisplayPort™ audio will not be converted or down-mixed on the **Line Out** port on the Receiver unit.

The web interface facilitates the creation of video walls up to 16 horizontal and 16 vertical displays. Video walls may contain any number or rows and columns and any combination of these can be enabled, as necesary.

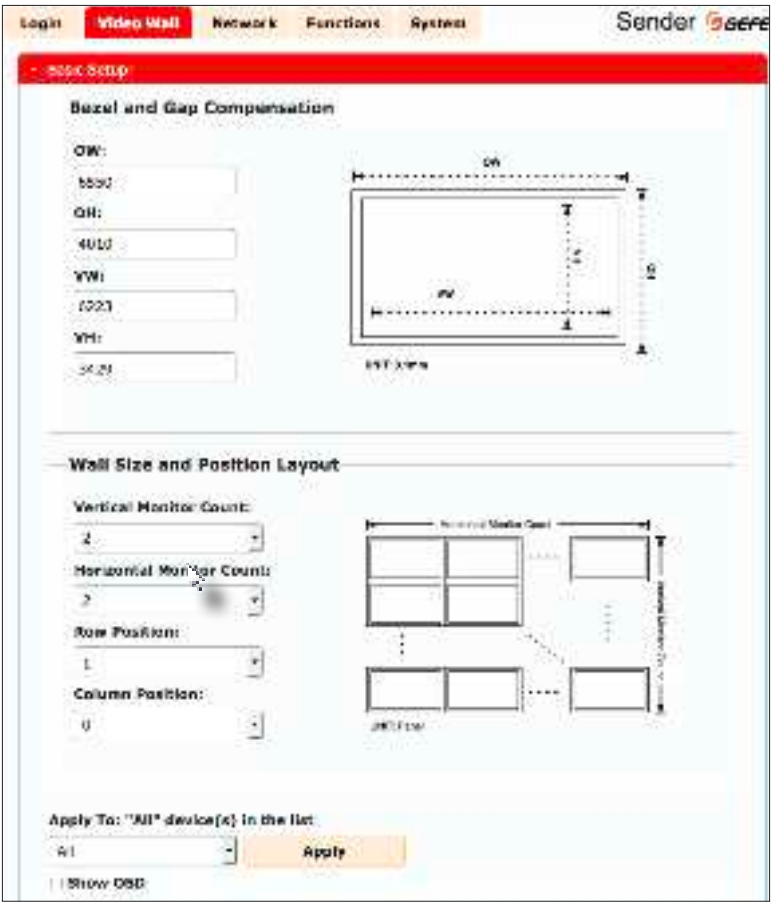
Wall Size and Layout

1. Access the Web interface for the Receiver unit.

2. Login as “Administrator” or “User”.

3. Make sure that the **Enable Video Wall** option is enabled under the **Functions** tab of the Sender unit, then click the **Video Wall** tab. Click the **Apply** button.

4. Under **Bezel and Gap Compensation**, specifiy the Outside Width (**OW**), Outside Height (**OH**), Video Width (**VW**), and Video Height (**VH**) fields.



5. Under the **Wall Size and Position Layout** window group, click the drop-down lists for the **Vertical Monitor Count** and **Horizontal Monitor Count** and select the number of rows and columns of displays, respectively.
6. Select the row and column positions using the **Row Position** and **Column Position** drop-down lists. Both row and column positions begin with a reference value of zero.
7. Click the drop-down list, next to the **Apply** button, to select the desired host or client to which these settings will be applied.

   If the **All** option is selected, then all parameters will be transferred to all Receiver units. For monitor count and bezel compensation in a video wall array of matching displays, this is fine, but the row and position will also be copied. There is an option for "This" unit that will apply to the current unit being interfaced with. The "This" option can be used to precisely set the proper position of each unit but would require the user to access the web interface of each unit to set. Alternatively, the drop-down will provide a list of all connected host (Sender units) and clients (Receiver units). This process allows the configuration of an entire video wall from a single unit.

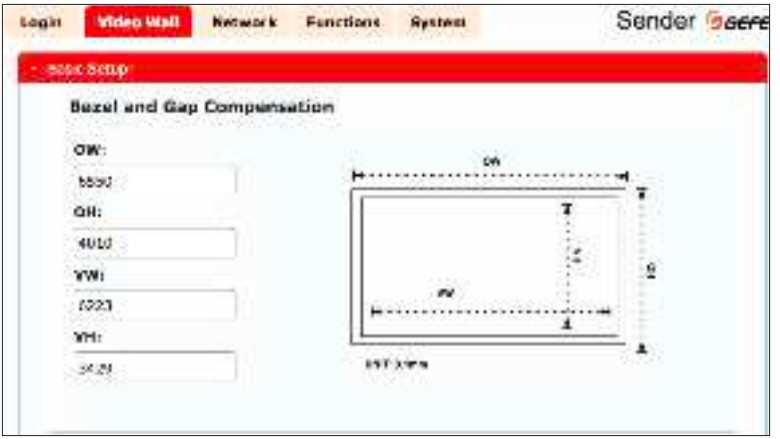
Bezel Compensation

Display devices have a region where video data is not displayed. This area is called the *bezel*. *Bezel compensation* takes this area into account when a single video source is mapped across multiple displays. It is recommended, when a video wall is set up for the first time, that bezel compensation values be set to zero. Bezel compensation can be adjusted at any time.

The illustration on the left shows a 2x2 video wall without bezel compensation. Note how the circle is stretched, slightly, horizontally. On the right, bezel compensation is used to correct the "distorted" image.



1. Access the Web interface for the Sender unit.
2. Login as "Administrator" or "User".
3. Click the **Video Wall** tab.
4. Adjust the values under the **Bezel and Gap Compensation** window group. Refer to the diagram, to the right of each field, to see the effect of each value. All entered values are applied to the physical displays in 0.1 millimeter increments.



The video mode can be changed using the **Mode** button or through the Web interface of the Sender unit. Consecutively pressing the **Mode** button on the Sender unit will switch between Graphic and Video mode.

Using the Web interface

1. Access the Web interface for the Sender unit.
2. Login as "Administrator" or "User".
3. Click the **Network** tab.
4. Click the desired mode within the **Picture Quality Mode** window group. The default setting is "Video".

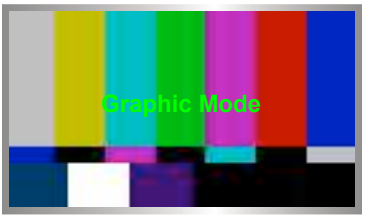


► **Video Mode**
If the video signal is motion video, then click the **Video** button. This mode will optimize the frame rate.

► **Graphic Mode**
If the video signal is a static image, then click the **Graphic** button.

5. The selected mode will be displayed on the screen, as shown below.





6. Rebooting the Sender unit is *not* required for the changes to take effect.

1. Access the Web interface for the Sender / Receiver unit.
2. Login as “Administrator”.
3. Click the **System** tab.
4. Under the **Password Change** window group, enter the new password for the desired username. Note that the new password will *not* be masked when it is entered.
5. Click the **Change** button.



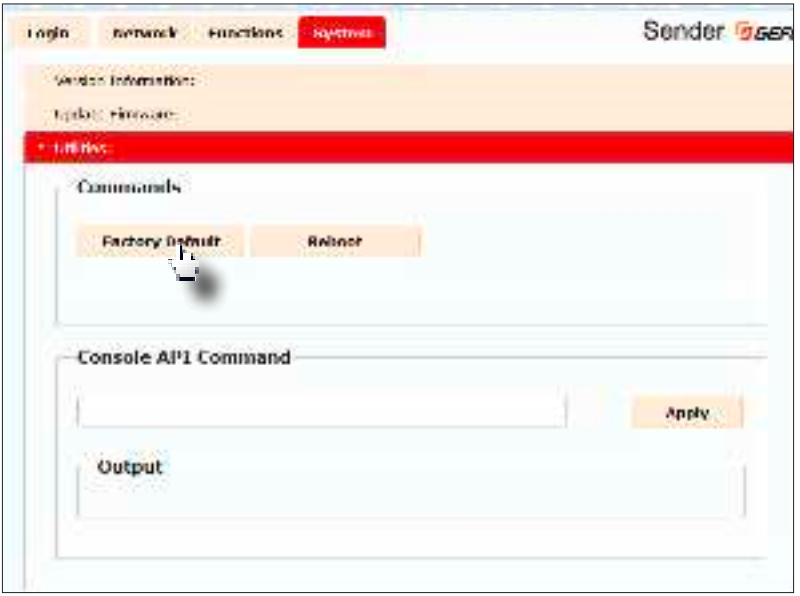
Reset using the Web Interface

All Senders and Receivers can be reset using the web interface or using the buttons on the front panel. When using the Web interface, the Sender / Receiver units will automatically be reset to *Auto IP* mode. When using the front-panel buttons, the Sender / Receiver can be reset to either *Auto IP* or *Static IP* mode.

Note

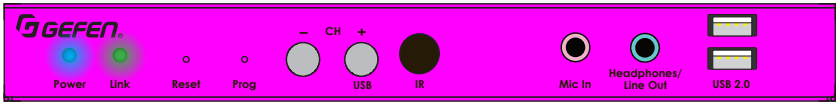
Once a unit has been reset to Auto IP mode, the connection to the Web interface will be terminated. To reestablish a connection to the Web interface, from your computer, see Installation (page 17).

1. Access the Web interface for the desired Sender / Receiver unit. It does not matter which unit is reset first.
2. Login as "Administrator".
3. Click the **System** tab.
4. Click the **Utilities** rollout.
5. Click the **Factory Default** button.



5. Both the **Power** and **Link** LED indicators will begin to flash.

Receiver unit (shown)



6. After both LED indicators stop flashing, the unit will be reset.

7. Repeat the process for each unit.

Reboot using the Web Interface

The Sender and Receiver units can be rebooted in three different ways: Using the Web interface, the Reset button on the front panel, or simply disconnecting and reconnecting the power.

1. Access the Web interface for the Sender / Receiver unit.
2. Login as "Administrator".
3. Click the **System** tab.
4. Click the **Utilities** rollout.
5. Click the **Reboot** button.

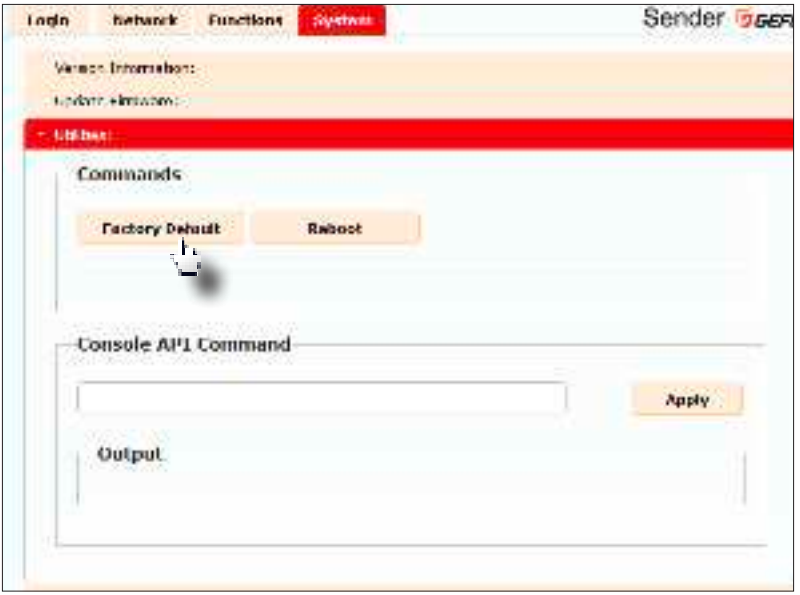


6. After a few moments, the **Power** LED indicator will flash.
7. Several seconds later, the **Power** LED indicator will glow solid blue and the **Link** LED indicator will begin to flash.
8. After both LED indicators stop flashing, the reboot process will be complete.

Reboot using the Web Interface

The Sender and Receiver units can be rebooted in three different ways: Using the Web interface, the Reset button on the front panel, or simply disconnecting and reconnecting the power.

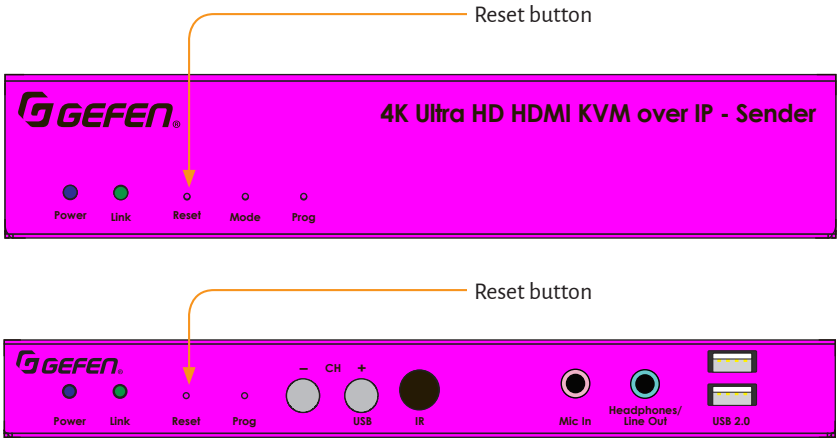
1. Access the Web interface for the Sender / Receiver unit.
2. Login as "Administrator".
3. Click the **System** tab.
4. Click the **Utilities** rollout.
5. Click the **Reboot** button.



6. After a few moments, the **Power** LED indicator will flash.
7. Several seconds later, the **Power** LED indicator will glow solid blue and the **Link** LED indicator will begin to flash.
8. After both LED indicators stop flashing, the reboot process will be complete.

Reboot using the Front Panel

1. Press the **Reset** button, on the desired Sender or Receiver unit, using the end of a paper clip or other sharp pointed object.
2. After a few moments, the **Power** LED indicator will flash.
3. Several seconds later, the **Power** LED indicator will glow solid blue and the **Link** LED indicator will begin to flash.
4. After both LED indicators stop flashing, the reboot process will be complete.



Note

By default, the Telnet login credentials are disabled. This setting is required when using the Matrix controller (Gefen part no. EXT-CU-LAN) but can be enabled for security purposes. Use the `#use_telnet_login` command to enable or disable this feature.

1. Launch the desired terminal application (e.g. Windows Hyperterminal, etc).
2. Within the terminal program, enter the IP address of the Sender or Receiver unit that you wish to control.
3. Enter the TCP listening port. The default listening port is 23.
4. After the correct settings have been used in the terminal program, information similar to the following will be displayed.

   In the example, below, we are connected to the client (Receiver unit) and Telnet login has been *enabled*:

   ```
   ------------- Welcome to the Gefen Telnet Server -----------

   ast2-client001C9103C8B3 login:
   ```

5. Login as "Administrator". The default password is "admin". To change the Telnet password, see the `#set_telnet_pass` command.
6. Type `#help` for a list of commands or refer to the tables on the following pages.

Important

Commands that are limited to a Sender or Receiver unit are marked as "Tx only" and "Rx only", respectively. Unless otherwise noted, commands can be used when connected to either a Sender or Receiver unit.

Discovery Service

Command	Description
#get_device_desc	Displays the device description
#get_discovery	Displays the current state of the discovery service
#get_discovery_mode	Displays the discovery read/write mode
#get_showme	Displays the status of the showme state
#set_device_desc	Sets the device description
#set_discovery	Enables or disables the discovery service
#set_discovery_mode	Sets the discovery mode
#set_showme	Enables or disables the "show me" feature

Help

Command	Description
#help	Displays a list of available commands

Network

Command	Description
#get_gateway	Displays the gateway IP address
#get_ip_address	Displays the IP address
#get_ip_mode	Displays the IP mode
#get_ipconfig	Displays the IP configuration information
#get_net_mode	Displays the network casting mode
#get_netmask	Displays the subnet mask address
#get_remote_udp_access	Displays the remote UDP access state
#get_remote_udp_ip	Displays the remote UDP IP address
#get_remote_udp_port	Displays the remote UDP listening port
#get_telnet_access	Displays the Telnet access state

Command	Description
#get_telnet_login	Displays the status of the Telnet login
#get_telnet_port	Displays the Telnet listening port
#get_telnet_welcome	Displays the Telnet welcome message
#get_udp_access	Displays the UDP access state
#get_udp_port	Displays the UDP listening port
#get_web_port	Displays the HTTP listening port
#set_gateway	Sets the gateway address
#set_ip_address	Sets the IP address
#set_ip_mode	Sets the IP mode
#set_net_mode	Sets the network casting mode
#set_netmask	Sets the subnet mask address
#set_remote_udp_access	Enables or disables remote UDP access
#set_remote_udp_ip	Sets the remote UDP IP address
#set_remote_udp_port	Sets the remote UDP listening port
#set_telnet_access	Enables or disables Telnet access
#set_telnet_login	Enables or disables the Telnet login
#set_telnet_pass	Sets the Telnet password
#set_telnet_port	Sets the Telnet listening port
#set_telnet_welcome	Sets the Telnet welcome message
#set_udp_access	Enables or disables UDP access
#set_udp_port	Sets the UDP listening port
#set_web_port	Sets the HTTP listening port

Routing

Command	Description
#get_rx_channel	Displays the channel of the Receiver unit (Rx only)
#get_v	Displays the current video input status
#request_usb	Requests USB control when active per request is enabled
r	Routes an input to a Receiver unit (Rx only)

RX Specific

Command	Description
#get_clk_lock	Displays the audio clock lock
#get_edid_copy	Displays the EDID copy state (Rx only)
#get_mask	Displays the current video mask state
#get_rx_id	Displays the ID of the Receiver unit
#get_vw	Displays the status of the video wall
#get_vw_bc	Displays the video wall bezel compensation
#get_vw_delay	Displays the video wall display delay
#get_vw_hscale	Displays the video wall horizontal up-scaling
#get_vw_layout	Displays the video wall horizontal and vertical maximum display count
#get_vw_osd	Displays the status of the video wall OSD
#get_vw_pos	Displays the video wall display position
#get_vw_shift	Displays the video wall display shift
#get_vw_vscale	Displays the video wall vertical up-scaling
#set_clk_lock	Sets the audio clock lock
#set_edid_copy	Enables or disables EDID copy
#set_mask	Enables or disables video masking
#set_rx_id	Sets the ID of the Receiver unit
#set_vw	Enable / disable video wall
#set_vw_bc	Sets the video wall bezel compensation
#set_vw_delay	Sets the video wall display delay
#set_vw_hscale	Displays the video wall horizontal up-scaling
#set_vw_layout	Sets the video wall horizontal and vertical maximum display count
#set_vw_osd	Enable / disable the video wall OSD
#set_vw_pos	Sets the video wall display position
#set_vw_shift	Sets the video wall display shift
#set_vw_vscale	Displays the video wall vertical up-scaling

Serial

Command	Description
#get_serial_allow	Displays the Serial-over-IP state
#get_serial_baud	Displays the serial baud rate setting
#get_serial_bits	Displays the serial data bits setting
#get_serial_parity	Displays the serial parity setting
#get_serial_stop	Displays the serial stop bits setting
#set_serial_allow	Enables or disables Serial-over-IP mode
#set_serial_baud	Sets the baud rate for the serial port
#set_serial_bits	Sets the data bits for the serial port
#set_serial_parity	Sets the parity setting for the serial port
#set_serial_stop	Sets the number of stop bits for the serial port

System

Command	Description
#get_firmware_version	Displays the firmware version
#factory_reset	Resets the unit to factory-default settings
#fw_upgrade	Upgrades firmware using external file
#reboot	Reboots the unit

TX Specific

Command	Description
#get_block	Displays the current video blocking state
#get_hdcp	Displays the HDCP state
#get_pq_mode	Displays the picture quality mode
#get_tx_channel	Displays the video channel
#set_block	Enables or disables video blocking
#set_hdcp_allow	Enables or disables HDCP-detection
#set_pq_mode	Sets the picture quality mode
#set_tx_channel	Sets the video channel

USB

Command	Description
#get_usb_allow	Displays the USB-over-IP state
#get_usb_mode	Displays the USB operating mode
#get_usb_mouse	Displays the mouse operating mode
#set_usb_allow	Enables / disables USB over IP
#set_usb_mode	Sets the USB operating mode
#set_usb_mouse	Sets the USB mouse mode

Video

Command	Description
#get_video_allow	Displays the Video-over-IP state
#set_video_allow	Sets the Video-over-IP state

Web Interface

Command	Description
#set_webui_ad_pass	Sets the administrator password for the web UI
#set_webui_user_pass	Sets the user password for the web UI

#help

Displays a list of available commands. The commands listed are specific to either the Sender or Receiver unit.

Syntax

```
#help
```

Parameters

```
None
```

Example

```
#help

#HELP
#FACTORY_RESET
#FW_UPGRADE
#GET_BLOCK
#GET_CLK_LOCK
#GET_DEVICE_DESC
#GET_DISCOVERY
#GET_DISCOVERY_MODE
#GET_EDID_COPY
#GET_FIRMWARE_VERSION
#GET_GATEWAY
#GET_HDCP
#GET_IP_ADDRESS
#GET_IP_MODE
#GET_IPCONFIG
#GET_MASK
#GET_NET_MODE
#GET_NETMASK
#GET_PQ_MODE
#GET_REMOTE_UDP_ACCESS
#GET_REMOTE_UDP_IP
#GET_REMOTE_UDP_PORT
#GET_RX_CHANNEL
...
...
```

#factory_reset

Resets the unit to factory-default settings. *param1* must be included and set to 1.

Syntax

```
#factory_reset param1
```

Parameters

param1	Integer	1

Example

```
#factory_reset 1
RESET TO FACTORY DEFAULTS
```

Related Commands

#reboot

#fw_upgrade

Upgrades the firmware from the command.

Syntax

```
#fw_upgrade filename
```

Parameters

filename	String

Example

```
#fw_upgrade firmware_file_v2.bin
```

#get_block

Displays the current video blocking state. This command is only available when connected to a Sender unit. To enable or disable the video blocking state, refer to the `#set_block` command.

Syntax

```
#get_block
```

Parameters

```
None
```

Example

```
#get_block
BLOCK DISABLED
```

Related Commands

```
#get_mask
#set_block
```

#get_clk_lock

Displays the audio clock lock.

Syntax

```
#get_clk_lock
```

Parameters

```
None
```

Example

```
#get_clk_lock
CLK_LOCK 0
```

Related Commands

```
#set_clk_lock
```

#get_device_desc

Displays the description of the Sender / Receiver unit.

Syntax

```
#get_device_desc
```

Parameters

```
None
```

Example

```
#get_device_desc
DEVICE DESCRIPTION IS Genius Sender 2
```

Related Commands

```
#set_device_desc
```

#get_discovery

Displays the current discovery mode setting.

Syntax

```
#get_discovery
```

Parameters

```
None
```

Example

```
#get_discovery
DISCOVERY SERVICE SET TO ENABLED
```

Related Commands

```
#set_discovery
#set_showme
```

#get_discovery_mode

Displays the current discovery mode setting.

Syntax

```
#get_discovery_mode
```

Parameters

```
None
```

Example

```
#get_discovery_mode
DISCOVERY MODE 1
```

Related Commands

```
#set_discovery
#set_discovery_mode
#set_showme
```

#get_edid_copy

Displays the EDID copy state. This command is only available when connected to a Receiver unit.

Syntax

```
#get_edid_copy
```

Parameters

```
None
```

Example

```
#get_edid_copy
COPY EDID OF CONNECTED DISPLAY IS ENABLED
```

Related Commands

```
#set_edid_copy
```

#get_firmware_version

Displays the firmware version.

Syntax

```
#get_firmware_version
```

Parameters

```
None
```

Example

```
#get_firmware_version
FIRMWARE VERSION IS 1.83hv
```

Related Commands

```
#fw_upgrade
```

#get_gateway

Displays the gateway address of the Sender/Receiver unit.

Syntax

```
#get_gateway
```

Parameters

```
None
```

Example

```
#get_gateway
GATEWAY: 192.168.0.1
```

Related Commands

```
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_netmask
#set_gateway
#set_ip_address
#set_ip_mode
#set_netmask
```

#get_hdcp

Displays the current HDCP state. This command is only available when connected to a Sender unit.

Syntax

```
#get_hdcp
```

Parameters

```
None
```

Example

```
#get_hdcp
HDCP ENCRYPTED SOURCE IS ENABLE
```

Related Commands

```
#set_hdcp_allow
```

#get_ip_address

Displays the current IP address of the Sender or Receiver unit.

Syntax

```
#get_ip_address
```

Parameters

```
None
```

Example

```
#get_ip_address
IP: 10.5.64.60
```

Related Commands

```
#get_gateway
#get_ip_mode
#get_ipconfig
#get_netmask
#get_web_port
#set_gateway
#set_ip_address
#set_ip_mode
#set_netmask
#set_web_port
```

#get_ip_mode

Displays the current IP mode.

Syntax

```
#get_ip_mode
```

Parameters

```
None
```

Example

```
#get_ip_mode
IP MODE IS SET TO DHCP
```

Related Commands

```
#get_gateway
#get_ip_address
#get_ipconfig
#get_netmask
#get_web_port
#set_gateway
#set_ip_address
#set_ip_mode
#set_netmask
#set_web_port
```

#get_ipconfig

Displays the current IP configuration. In addition to providing the MAC address and the broadcast IP address, this command also provides the same information as executing the `#get_ip_mode`, `#get_ip_address`, `#get_netmask`, and `#get_gateway` commands.

Syntax

```
#get_ipconfig
```

Parameters

None

Example

```
#get_ipconfig
IP CONFIGURATION IS :
IP MODE: DHCP
IP: 10.5.64.60
NETMASK: 255.255.255.0
GATEWAY: 10.5.64.1
MAC ADDRESS: 00-1C-91-03-C8-B3
```

Related Commands

```
#get_gateway
#get_ip_address
#get_netmask
#get_web_port
#set_gateway
#set_ip_address
#set_ip_mode
#set_netmask
#set_web_port
```

#get_mask

Displays the current video mask state. This command is only available when connected to a Receiver unit. To enable or disable video masking on a Receiver unit, refer to the #set_mask command.

Syntax

```
#get_mask
```

Parameters

None

Example

```
#get_mask
MASK DISABLED
```

Related Commands

#get_block
#set_mask

#get_net_mode

Displays the current network mode setting.

Syntax

```
#get_net_mode
```

Parameters

```
None
```

Example

```
#get_net_mode
NETWORK MODE SET TO MULTICAST
```

Related Commands

```
#set_net_mode
```

#get_netmask

Displays the current net mask setting.

Syntax

```
#get_netmask
```

Parameters

```
None
```

Example

```
#get_netmask
NETMASK: 255.255.255.0
```

Related Commands

```
#get_gateway
#get_ip_address
#get_ipconfig
#get_web_port
#set_gateway
#set_ip_address
#set_ip_mode
#set_netmask
#set_web_port
```

#get_pq_mode

Displays the picture quality mode. This command is only available when connected to a Sender unit.

Syntax

```
#get_pq_mode
```

Parameters

```
None
```

Example

```
#get_pq_mode
TRANSMITTER PICTURE QUALITY IS VIDEO
```

Related Commands

```
#set_pq_mode
```

#get_remote_udp_access

Displays the remote UDP access state.

Syntax

```
#get_remote_udp_access
```

Parameters

```
None
```

Example

```
#get_remote_udp_access
REMOTE UDP ACCESS IS ENABLED
```

Related Commands

```
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port
```

#get_remote_udp_ip

Displays the remote UDP IP address.

Syntax

```
#get_remote_udp_ip
```

Parameters

```
None
```

Example

```
#get_remote_udp_access
REMOTE UDP IP: 192.168.1.29
```

Related Commands

```
#get_remote_udp_access
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port
```

#get_remote_udp_port

Displays the remote UDP listening port.

Syntax

```
#get_remote_udp_port
```

Parameters

```
None
```

Example

```
#get_remote_udp_port
REMOTE UDP COMMUNICATIONS PORT: 50008
```

Related Commands

```
#get_remote_udp_access
#get_remote_udp_ip
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port
```

#get_rx_channel

Displays the current channel of the Receiver unit. To set the video channel of a Receiver unit, use the r command.

Syntax

```
#get_rx_channel
```

Parameters

```
None
```

Example

```
#get_rx_channel
RECEIVER CHANNEL: 1
```

Related Commands

```
#get_tx_channel
#set_tx_channel
r
```

#get_rx_id

Displays the ID of the Receiver unit. This command is only available when connected to a Receiver unit.

Syntax

```
#get_rx_id
```

Parameters

```
None
```

Example

```
#get_rx_id
RX ID: 8
```

Related Commands

```
#set_rx_id
```

#get_serial_allow

Displays the Serial-over-IP state. Use the `#set_serial_allow` command to enable or disable the Serial-over-IP feature.

Syntax

```
#get_serial_allow
```

Parameters

```
None
```

Example

```
#get_serial_allow
SERIAL OVER IP is ENABLE
```

Related Commands

```
#get_serial_baud
#get_serial_parity
#get_serial_stop
#set_serial_allow
#set_serial_baud
#set_serial_bits
#set_serial_parity
#set_serial_stop
```

#get_serial_baud

Displays the serial baud rate setting. Use the `#set_serial_baud` command to set the baud rate.

Syntax

```
#get_serial_baud
```

Parameters

```
None
```

Example

```
#get_serial_baud
SERIAL BAUD RATE IS 19200
```

Related Commands

```
#get_serial_allow
#get_serial_bits
#get_serial_parity
#get_serial_stop
#set_serial_allow
#set_serial_baud
#set_serial_bits
#set_serial_parity
#set_serial_stop
```

#get_serial_bits

Displays the serial data bits setting. Use the `#set_serial_bits` command to set the number of data bits.

Syntax

```
#get_serial_bits
```

Parameters

None

Example

```
#get_serial_bits
SERIAL DATA BITS IS 8
```

Related Commands

```
#get_serial_allow
#get_serial_baud
#get_serial_parity
#get_serial_stop
#set_serial_allow
#set_serial_baud
#set_serial_bits
#set_serial_parity
#set_serial_stop
```

#get_serial_parity

Displays the serial parity bit setting. Use the `#set_serial_parity` command to set the parity bit.

Syntax

```
#get_serial_parity
```

Parameters

```
None
```

Example

```
#get_serial_parity
SERIAL PARITY MODE SET TO NONE
```

Related Commands

```
#get_serial_allow
#get_serial_baud
#get_serial_bits
#get_serial_stop
#set_serial_allow
#set_serial_baud
#set_serial_bits
#set_serial_parity
#set_serial_stop
```

#get_serial_stop

Displays the serial stop bits setting. Use the `#set_serial_stop` command to set the number of stop bits.

Syntax

```
#get_serial_stop
```

Parameters

```
None
```

Example

```
#get_serial_stop
SERIAL STOP BITS IS 1
```

Related Commands

```
#get_serial_allow
#get_serial_baud
#get_serial_bits
#get_serial_parity
#set_serial_allow
#set_serial_baud
#set_serial_bits
#set_serial_parity
#set_serial_stop
```

#get_showme

Displays the showme state.

Syntax

```
#get_showme
```

Parameters

```
None
```

Example

```
#get_showme
SHOW ME DISABLED
```

Related Commands

```
#set_showme
```

#get_telnet_access

Displays the Telnet access state. Use the `#set_telnet_access` command to enable or disable Telnet access.

Syntax

```
#get_telnet_access
```

Parameters

```
None
```

Example

```
#get_telnet_access
TELNET ACCESS IS ENABLED
```

Related Commands

```
#get_telnet_login
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_pass
#set_telnet_login
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
```

#get_telnet_login

Displays the Telnet login status.

Syntax

```
#get_telnet_login
```

Parameters

```
None
```

Example

```
#get_telnet_login
TELNET LOGIN SET TO DISABLED
```

Related Commands

```
#get_telnet_access
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_pass
#set_telnet_login
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
```

#get_telnet_port

Displays the Telnet listening port.

Syntax

```
#get_telnet_port
```

Parameters

```
None
```

Example

```
#get_telnet_port
TELNET COMMUNICATION PORT: 23
```

Related Commands

```
#get_telnet_access
#get_telnet_login
#get_telnet_welcome
#set_telnet_access
#set_telnet_pass
#set_telnet_login
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
```

#get_telnet_welcome

Displays the Telnet welcome message. Use the `#set_telnet_welcome` to create a custom welcome message.

Syntax

```
#get_telnet_welcome
```

Parameters

```
None
```

Example

```
#get_telnet_welcome
TELNET WELCOME SCREEN IS DISABLED
```

Related Commands

```
#get_telnet_access
#get_telnet_login
#get_telnet_port
#set_telnet_access
#set_telnet_pass
#set_telnet_login
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
```

#get_tx_channel

Displays the video channel of the Sender unit. This command is only available when connected to a Sender unit.

Syntax

```
#get_tx_channel
```

Parameters

```
None
```

Example

```
#get_tx_channel
TRANSMITTER CHANNEL: 1
```

Related Commands

```
#get_rx_channel
#set_tx_channel
r
```

#get_udp_access

Displays the UDP access state. Use the `#set_udp_access` command to enable or disable UDP access.

Syntax

```
#get_udp_access
```

Parameters

```
None
```

Example

```
#get_udp_access
UDP ACCESS IS ENABLED
```

Related Commands

```
#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port
```

#get_udp_port

Displays the local UDP listening port.

Syntax

```
#get_udp_port
```

Parameters

```
None
```

Example

```
#get_udp_port
UDP PORT SET TO 50007
```

Related Commands

```
#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port
```

#get_usb_allow

Displays the USB-over-IP state.

Syntax

```
#get_usb_allow
```

Parameters

```
None
```

Example

```
#get_usb_allow
USB OVER IP is ENABLE
```

Related Commands

```
#get_usb_mode
#get_usb_mouse
#set_usb_allow
#set_usb_mode
#set_usb_mouse
```

#get_usb_mode

Displays the USB operating mode.

Syntax

```
#get_usb_mode
```

Parameters

```
None
```

Example

```
#get_usb_mode
USB OPERATION MODE IS ACTIVE PER REQUEST
```

Related Commands

```
#get_usb_allow
#get_usb_mouse
#set_usb_allow
#set_usb_mode
#set_usb_mouse
```

#get_usb_mouse

Displays the mouse operating mode.

Syntax

```
#get_usb_mouse
```

Parameters

```
None
```

Example

```
#get_usb_mouse
USB MOUSE MODE IS HIGH RESOLUTION
```

Related Commands

```
#get_usb_allow
#get_usb_mode
#set_usb_allow
#set_usb_mode
#set_usb_mouse
```

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#get_video_allow

Displays the Video-over-IP status. Use the `#set_video_allow` command to enable or disable video over IP.

Syntax

```
#get_video_allow
```

Parameters

```
None
```

Example

```
#get_video_allow
VIDEO OVER IP is ENABLE
```

Related Commands

```
#set_video_allow
```

#get_vw

Displays the video wall enable/disable setting.

Syntax

```
#get_vw
```

Parameters

```
None
```

Example

```
#get_vw
VW 0
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#get_vw_bc

Displays the video wall bezel compensation setting.

Syntax

```
#get_vw_bc
```

Parameters

```
None
```

Example

```
#get_vw_bc
VW_BC 6223 6550 3429 4010
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#get_vw_delay

Displays the video wall delay setting.

Syntax

```
#get_vw_delay
```

Parameters

```
None
```

Example

```
#get_vw_delay
VW_DELAY 0
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#get_vw_hscale

Displays the video wall horizontal upscaling value.

Syntax

```
#get_vw_bc
```

Parameters

```
None
```

Example

```
#get_vw_bc
VW_HSCALE 0
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#get_vw_layout

Displays the video wall horizontal and vertical display count.

Syntax

```
#get_vw_layout
```

Parameters

```
None
```

Example

```
#get_vw_layout
VW_LAYOUT 2 2
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#get_vw_osd

Displays the enable / disable status of the video wall OSD.

Syntax

```
#get_vw_osd
```

Parameters

```
None
```

Example

```
#get_vw_osd
VW_OSD 0
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#get_vw_pos

Displays the video wall display position.

Syntax

```
#get_vw_pos
```

Parameters

```
None
```

Example

```
#get_vw_pos
VW_POS 0 0
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#get_vw_shift

Displays the video wall display shift.

Syntax

```
#get_vw_shift
```

Parameters

```
None
```

Example

```
#get_vw_shift
VW_SHIFT 0 0 0 0
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#get_vw_vscale

Displays the video wall vertical upscaling value.

Syntax

```
#get_vw_vscale
```

Parameters

```
None
```

Example

```
#get_vw_vscale
VW_VSCALE 0
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#get_web_port

Displays the HTTP listening port. Use the `#set_web_port` command to set the HTTP listening port.

Syntax

```
#get_web_port
```

Parameters

```
None
```

Example

```
#get_web_port
WEB INTERFACE PORT: 80
```

Related Commands

```
#get_gateway
#get_ip_address
#get_ipconfig
#set_gateway
#set_ip_address
#set_ip_mode
#set_netmask
#set_web_port
```

#reboot

Reboots the Sender / Receiver unit.

Syntax

```
#reboot
```

Parameters

```
None
```

Example

```
#reboot
UNIT WILL REBOOT SHORTLY
```

Related Commands

```
#factory_reset
```

#request_usb

Requests USB control when `ACTIVE PER REQUEST` USB mode is set.

Syntax

```
#request_usb
```

Parameters

```
None
```

Example

```
#request_usb
REQUESTING USB FROM SENDER
```

Related Commands

```
#set_usb_mode
```

#set_block

Enables or disables video blocking at a Sender unit.

Syntax

```
#set_block param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_block 1
BLOCK ENABLED
```

Related Commands

```
#get_block
#set_mask
```

#set_clk_lock

Sets the audio clock lock. This command is only available on the Receiver unit. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_block param1
```

Parameters

param1	Integer	[0 ... 500]

Example

```
#set_clk_lock 100
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_clk_lock
```

#set_device_desc

Sets the description for the Sender / Receiver unit. The description string cannot exceed 30 characters in length. Spaces and underscore characters are acceptable. Avoid using symbols and special characters.

Syntax

```
#set_description param1
```

Parameters

param1	String

Example

```
#set_description Blu-ray_Panasonic
PRODUCT DESCRIPTION SET
```

Related Commands

```
#get_device_desc
```

#set_discovery

Enables or disables the discovery feature. The default value is On.

Syntax

```
#set_discovery param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Off
1	On

Example

```
#set_discovery 0
DISCOVERY SERVICE SET TO DISABLED
```

Related Commands

```
#get_discovery
#set_showme
#get_showme
```

#set_discovery_mode

Sets the discovery read / write mode.

Syntax

```
#set_discovery_mode param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Read only mode
1	Read / write mode

Example

```
#set_discovery_mode 1
DISCOVERY MODE 1
```

Related Commands

`#get_edid_copy`

#set_edid_copy

Enables or disables the EDID copy state. When *param1* = 1, the downstream EDID (connected to the Receiver unit) is copied to the Sender unit. If *param1* = 0, then the internal (default) EDID is used. This command is only available when connected to a Receiver unit. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_edid_copy param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Off
1	On

Example

```
#set_edid_copy 1
COPY EDID OF CONNECTED DISPLAY SET TO ENABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

`#get_edid_copy`

#set_gateway

Sets the gateway address. This command is only applicable when using Static IP mode. *param1* must be specified using dot-decimal notation. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_gateway param1
```

Parameters

param1	IP Address

Example

```
#set_gateway 192.168.1.1
GATEWAY ADDRESS SET TO 192.168.1.1
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_gateway
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_netmask
#get_web_port
#set_ip_address
#set_ip_mode
#set_netmask
#set_web_port
```

#set_hdcp_allow

Blocks or unblocks HDCP-encrypted sources. This command **does not** decrypt HDCP content and is only available when connected to a Sender unit. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_hdcp_allow param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_hdcp_allow 1
HDCP ENCRYPTED SOURCE SET TO ENABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_hdcp_allow
```

#set_ip_address

Sets the IP address. *param1* must be specified using dot-decimal notation. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_ip_address param1
```

Parameters

param1	IP Address

Example

```
#set_gateway 192.168.1.1
GATEWAY ADDRESS SET TO 192.168.1.1
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_gateway
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_netmask
#get_web_port
#set_gateway
#set_ip_mode
#set_netmask
#set_web_port
```

#set_ip_mode

Sets the IP mode. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_ip_mode param1
```

Parameters

param1 Integer [0 ... 2]

param1	Description
0	Static
1	DHCP
2	Auto IP

Example

```
#set_ip_mode 1
IP MODE SET TO DHCP
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_gateway
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_netmask
#get_web_port
#set_ip_address
#set_gateway
#set_netmask
#set_web_port
```

#set_mask

Enables or disables video masking at a Receiver unit.

Syntax

```
#set_mask param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_mask 1
MASK ENABLED
```

Related Commands

```
#get_mask
#set_block
```

#set_net_mode

Sets the network casting mode.

Syntax

```
#set_net_mode param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Unicast
1	Multicast

Example

```
#set_net_mode 0
NETWORK CASTING MODE SET TO UNICAST
```

Related Commands

```
#get_net_mode
```

#set_netmask

Sets the network mask address. *param1* must be specified using dot-decimal notation. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_netmask param1
```

Parameters

param1	IP Address

Example

```
#set_netmask 255.255.255.0
NETMASK ADDRESS SET TO 255.255.255.0
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_gateway
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_netmask
#get_web_port
#set_ip_address
#set_ip_mode
#set_gateway
#set_web_port
```

#set_pq_mode

Sets the picture quality mode. This command is only available when connected to a Sender unit.

Syntax

```
#set_pq_mode param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Graphic
1	Video

Example

```
#set_pq_mode 1
TRANSMITTER PICTURE QUALITY SET TO VIDEO
```

Related Commands

`#get_pq_mode`

#set_remote_udp_access

Enables or disables remote UDP access. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_remote_udp_access param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_remote_udp_access 1
REMOTE UDP ACCESS SET TO ENABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port
```

#set_remote_udp_ip

Set the remote UDP IP address. *param1* must be specified using dot-decimal notation. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_remote_udp_ip param1
```

Parameters

param1	IP address

Example

```
#set_remote_udp_ip 192.168.1.29

REMOTE UDP IP ADDRESS SET TO 192.168.1.29
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_port
#set_udp_access
#set_udp_port
```

#set_remote_udp_port

Set the remote UDP listening port. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_remote_udp_port param1
```

Parameters

param1	Integer	[0 ... 65535]

Example

```
#set_remote_udp_port 50008

REMOTE UDP COMMUNICATIONS PORT IS SET TO PORT 50008
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_udp_access
#set_udp_port
```

#set_rx_id

Sets the ID of the Receiver unit. This command is only available when connected to a Receiver unit.

Syntax

```
#set_rx_id param1
```

Parameters

param1	Integer	[0 ... 65535]

Example

```
#set_rx_id 1
RX ID: 1
```

Related Commands

```
#get_rx_id
```

#set_serial_allow

Enables or disables serial over IP. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_serial_allow param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disable
1	Enable

Example

```
#set_serial_allow 0
SERIAL OVER IP SET TO DISABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_serial_allow
#get_serial_baud
#get_serial_bits
#get_serial_parity
#get_serial_stop
#set_serial_baud
#set_serial_bits
#set_serial_parity
#set_serial_stop
```

#set_serial_baud

Sets the baud rate for the serial port. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_serial_baud param1
```

Parameters

`param1` Integer [0 ... 9]

param1	Description (baud rate)
0	300
1	600
2	1200
3	2400
4	4800
5	9600
6	19200
7	38400
8	57600
9	115200

Example

```
#set_serial_baud 6
SERIAL BAUD RATE SET TO 19200
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_serial_allow
#get_serial_baud
#get_serial_bits
#get_serial_parity
#get_serial_stop
#set_serial_allow
#set_serial_bits
#set_serial_parity
#set_serial_stop
```

#set_serial_bits

Sets the data bits for the serial port. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_serial_bits param1
```

Parameters

`param1` Integer [0 ... 3]

param1	Description (data bits)
0	5
1	6
2	7
3	8

Example

```
#set_serial_bits 3
SERIAL DATA BITS SET TO 8
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_serial_allow
#get_serial_baud
#get_serial_bits
#get_serial_parity
#get_serial_stop
#set_serial_allow
#set_serial_baud
#set_serial_bits
#set_serial_parity
#set_serial_stop
```

#set_serial_parity

Sets the parity bit for the serial port. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_serial_parity param1
```

Parameters

`param1` Integer [0 ... 2]

param1	Description
0	None
1	Odd
2	Even

Example

```
#set_serial_parity 0
SERIAL PARITY MODE SET TO NONE
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_serial_allow
#get_serial_baud
#get_serial_bits
#get_serial_parity
#get_serial_stop
#set_serial_allow
#set_serial_baud
#set_serial_bits
#set_serial_stop
```

#set_serial_stop

Sets the number of stop bits for the serial port. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_serial_stop param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description (stop bits)
0	1
1	2

Example

```
#set_serial_stop 0
SERIAL STOP BITS SET TO 1
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_serial_allow
#get_serial_baud
#get_serial_bits
#get_serial_parity
#get_serial_stop
#set_serial_allow
#set_serial_baud
#set_serial_bits
#set_serial_parity
```

#set_showme

Enables or disables the "Show Me" feature. When the "Show Me" feature is enabled, then both the **Power** and **Link** LED indicators, on the front panel, will flash. This quickly identifies a unit and is useful when multiple units are being used. The default setting is *disabled*.

Syntax

```
#set_showme param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_showme 1
SHOW ME ENABLED
```

Related Commands

```
#get_discovery
#set_discovery
```

#set_telnet_access

Enables or disables Telnet access. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_telnet_access param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_telnet_access 1
TELNET ACCESS SET TO ENABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_telnet_access
#get_telnet_login
#get_telnet_port
#get_telnet_welcome
#set_telnet_login
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
```

#set_telnet_login

Enables or disables the Telnet login process. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_telnet_login param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_telnet_login 1
TELNET INTERFACE LOGIN SET TO ENABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_telnet_access
#get_telnet_pass
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
```

#set_telnet_pass

Sets the Telnet password. The password cannot exceed 8 characters in length and is case-sensitive. No special characters are allowed. The default password is `admin`. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_telnet_pass param1
```

Parameters

`param1`	String

Example

```
#set_telnet_pass b055man
TELNET INTERFACE PASSWORD IS SET b055man
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_telnet_access
#get_telnet_pass
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_login
#set_telnet_port
#set_telnet_welcome
```

#set_telnet_port

Sets the Telnet listening port. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_telnet_port param1
```

Parameters

param1	Integer	[0 ... 65535]

Example

```
#set_telnet_port 23
TELNET COMMUNICATIONS PORT SET TO PORT 23
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_telnet_access
#get_telnet_pass
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_login
#set_telnet_pass
#set_telnet_welcome
```

#set_telnet_welcome

Enables / disables the Telnet welcome screen. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_telnet_welcome param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_telnet_welcome Welcome!
TELNET WELCOME SCREEN IS ENABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_telnet_access
#get_telnet_pass
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_login
#set_telnet_pass
#set_telnet_port
```

#set_tx_channel

Sets the video channel for the Sender unit. This command is only available when connected to the Sender unit.

Syntax

```
#set_tx_channel param1
```

Parameters

param1	Integer	[0 ... 255]

Example

```
#set_tx_channel 1
TRANSMITTER CHANNEL SET TO 1
```

Related Commands

```
#get_tx_channel
#get_rx_channel
r
```

#set_udp_access

Enables or disables UDP access. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_udp_access param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_udp_access 0
UDP ACCESS SET TO DISABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_port
```

#set_udp_port

Sets the local UDP listening port. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_udp_port param1
```

Parameters

param1	Integer	[0 ... 65535]

Example

```
#set_udp_port 50007
UDP COMMUNCATION IS SET TO PORT 50007
PLEASE REBOOT THE UNIT TO APPLY CHANGES.
```

Related Commands

```
#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
```

#set_usb_allow

Enables or disables the USB-over-IP feature. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_usb_allow param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_usb_allow 1
USB OVER IP SET TO ENABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_usb_allow
#get_usb_mode
#get_usb_mouse
#set_usb_mode
#set_usb_mouse
```

#set_usb_mode

Sets the USB operating mode. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_udp_port param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Active per request
1	Active on link

Example

```
#set_usb_mode 0
USB OPERATION MODE SET TO ACTIVE PER REQUEST
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_usb_allow
#get_usb_mode
#get_usb_mouse
#set_usb_allow
#set_usb_mouse
```

#set_usb_mouse

Sets the USB mouse mode. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_udp_port param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	High resolution
1	Compatibility

Example

```
#set_usb_mouse 0
USB MOUSE MODE SET TO HIGH RESOLUTION
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_usb_allow
#get_usb_mode
#get_usb_mouse
#set_usb_allow
#set_usb_mode
```

#set_video_allow

Enables or disables the Video-over-IP feature. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_video_allow param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#set_video_allow 1
VIDEO OVER IP IS SET TO ENABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

`#get_video_allow`

#set_vw

Enable / disable the video wall. After executing this command, the unit must be rebooted to apply the changes.

Syntax

```
#set_vw param1
```

Parameters

param1 Integer [0 ... 1]

param1	Description
0	Disable
1	Enable

Example

```
#set_vw 1
VW 1
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#set_vw_bc

Sets the video wall bezel compensation value. All arguments are expressed in 0.1 mm units:

`param1` is the video width
`param2` is the overall width
`param3` is the video height
`param4` is the overall height

Syntax

```
#set_vw_bc param1 param2 param3 param4
```

Parameters

`param1`	Integer	[0 ... 99999]
`param2`	Integer	[0 ... 99999]
`param3`	Integer	[0 ... 99999]
`param4`	Integer	[0 ... 99999]

Example

```
#set_vw_bc 190 200 90 100
VW_BC 190 200 90 100
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#set_vw_delay

Sets the video wall display delay in microseconds.

Syntax

```
#set_vw_delay param1
```

Parameters

param1	Integer	[0 ... 99999]

Example

```
#set_vw_delay 16000
VW_DELAY 16000
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw_bc
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#set_vw_hscale

Sets the video wall horizontal upscaling.

Syntax

```
#set_vw_hscale param1
```

Parameters

param1	Integer	[0 ... 1]

Example

```
#set_vw_hscale 1
VW_HSCALE 1
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_delay
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#set_vw_layout

Sets the maximum horizontal and vertical display count for the video wall:

`param1` is the maximum horizontal display count.
`param2` is the maximum vertical display count.

Syntax

```
#set_vw_layout param1 param2
```

Parameters

`param1`	Integer	[0 ... 15]
`param2`	Integer	[0 ... 15]

Example

```
#set_vw_layout 2 2
VW_LAYOUT 2 2
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_osd
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#set_vw_osd

Enable / disable the video wall OSD.

Syntax

```
#set_vw_osd param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disable
1	Enable

Example

```
#set_vw_osd 1
VW_OSD 1
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_pos
#set_vw_shift
#set_vw_vscale
```

#set_vw_pos

Sets the video wall position.

`param1` is the row position.
`param2` is the column position.

Syntax

```
#set_vw_pos param1 param2
```

Parameters

`param1`	Integer	[0 ... 15]
`param2`	Integer	[0 ... 15]

Example

```
#set_vw_pos 2 2
VW_POS 2 2
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_shift
#set_vw_vscale
```

#set_vw_shift

Sets the video wall display shift. param2 must be specified in increments of eight pixels (e.g. 0, 8, 16, 24, etc.)

Syntax

```
#set_vw_shift param1 param2
```

Parameters

`param1` Character

param1	Description
U	Shift up
D	Shift down
L	Shift left
R	Shift right

`param2` Integer [0 ... 80000]

Example

```
#set_vw_shift L 16
VW_SHIFT L 16
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_pos
#set_vw_vscale
```

#set_vw_vscale

Sets the video wall vertical upscaling.

Syntax

```
#set_vw_vscale param1
```

Parameters

param1	Integer	[0 ... 15]

Example

```
#set_vw_vscale 1
VW_VSCALE 1
```

Related Commands

```
#get_vw_bc
#get_vw_delay
#get_vw_hscale
#get_vw_layout
#get_vw_osd
#get_vw_pos
#get_vw_shift
#get_vw_vscale
#set_vw_bc
#set_vw_delay
#set_vw_hscale
#set_vw_layout
#set_vw_osd
#set_vw_shift
```

#set_web_port

Sets the HTTP listening port.

Syntax

```
#set_web_port param1
```

Parameters

param1	Integer	[0 ... 65535]

Example

```
#set_web_port 82
WEB INTERFACE PORT SET TO 80
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

```
#get_gateway
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_netmask
#get_web_port
#set_gateway
#set_ip_address
#set_ip_mode
#set_netmask
```

#set_webui_ad_pass

Sets the Administrator password for the Web interface login. The password cannot exceed eight characters in length. The default password is `admin`.

Syntax

```
#set_webui_ad_pass param1
```

Parameters

`param1`	Password

Example

```
#set_webui_ad_pass b05Sman
WEB UI ADMINISTRATOR PASSWORD IS SET
```

Related Commands

`#set_webui_user_pass`

#set_webui_user_pass

Sets the User password for the Web interface login. The password cannot exceed eight characters in length. The default password is `user`.

Syntax

```
#set_webui_user_pass param1
```

Parameters

`param1`	Password

Example

```
#set_webui_user_pass m1ni0n
WEB UI USER PASSWORD IS SET
```

Related Commands

`#set_webui_ad_pass`

r

Changes a Receiver unit to the specified video channel. Changing the video channel allows a Receiver unit to accept the signal from a Sender unit that uses the same video channel. This command is only available when connected to a Receiver unit. Do not precede this command with the # symbol.

Syntax

```
r param1
```

Parameters

`param1`	Integer	[0 ... 255]

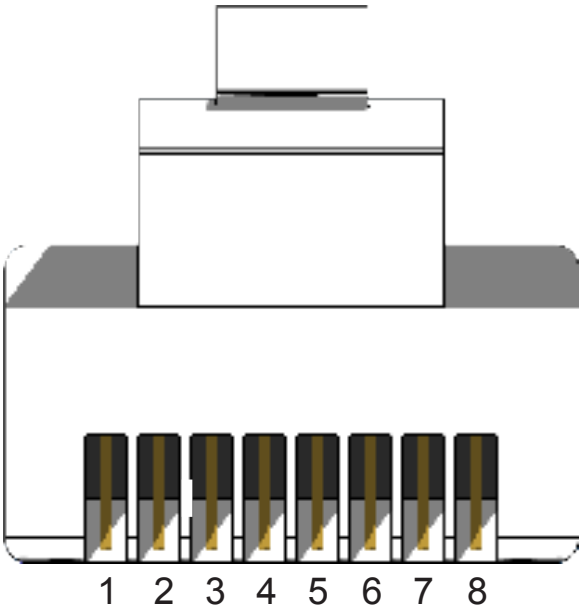
Example

```
r 1
TRANSMITTER 1 ROUTED TO RECEIVER
```

Related Commands

None

Front of RJ-45 Connector



Gefen recommends the TIA/EIA-568-B wiring option. Use the table below when field-terminating cable for use with Gefen products.

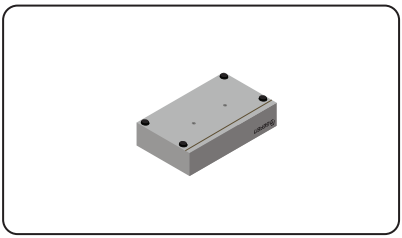
Pin	Color	Description
1	Orange / White	TD+ (Transmit Data, positive differential signal)
2	Orange	TD- (Transmit Data, negative differential signal)
3	Green / White	RD+ (Receive Data, positive differential signal)
4	Blue	Unused
5	Blue / White	Unused
6	Green	RD- (Receive Data, negative differential signal)
7	Brown / White	Unused
8	Brown / White	Unused

Note

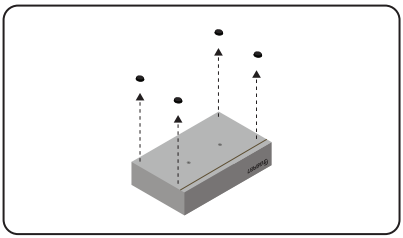
Shielded CAT-5e (or better) cabling should be used..

The following illustrations provide instructions for installing the Sender and/or Receiver unit(s) in the *Gefen 1U Rack Tray* (Gefen part no. EXT-RACK-1U-GRY).

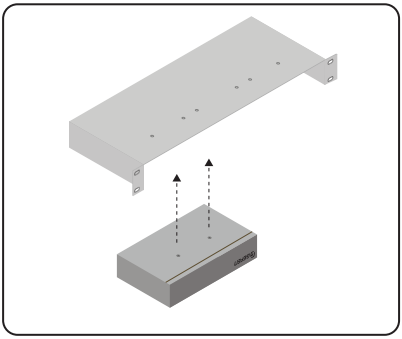
Step 1 Turn unit upside down.



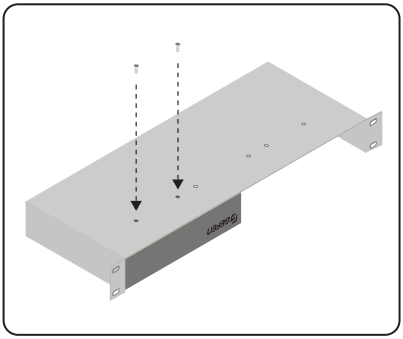
Step 2 Remove rubber feet.



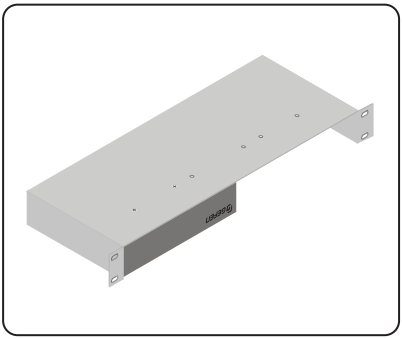
Step 3 Line up holes on unit and rack tray.



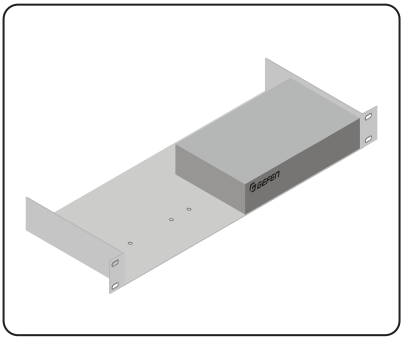
Step 4 Install countersink screws .



Step 5 Ensure the unit is installed securely.



Step 6 Unit has been installed into rack tray.



Connectors & Indicators		
Video In Connector (Sender)	·	1 x HDMI, DisplayPort™, DVI, or VGA
Video Out Connector (Sender)	·	1 x HDMI, DVI, or VGA (not avail on DisplayPort™)
Video Out Connector (Receiver)	·	1 x HDMI, DisplayPort™, DVI, or VGA
Line In Connector (Sender)	·	1 x 3.5mm mini-stereo, female
Line Out Connector (Sender)	·	1 x 3.5mm mini-stereo, female
Mic In Connector (Receiver)	·	1 x 3.5mm mini-stereo, female
Headphones/Line Out Conn. (Receiver)	·	1 x 3.5mm mini-stereo, female
Opt Out Connector (Receiver)	·	1 x TOSLINK® (not available on VGA model)
USB Host Interface Port (Sender)	·	1 x Type-B
USB Device Ports (Receiver)	·	2 x USB 2.0, Type-A 2x USB 1.1, Type-A
LAN Connector (Sender)	·	1 x RJ-45, shielded, with PoE
LAN Connectors (Receiver)	·	2 x RJ-45, shielded, 1 with PoE
RS-232 Connector (Sender)	·	1 x DB-9, female
RS-232 Connector (Receiver)	·	1 x DB-9, male
IR Sensor (Receiver)	·	(1) Located on front panel
IR Extender Type	·	EXT-RMT-EXTIRN
IR In/Ext Connector (Sender / Receiver)	·	1 x 3.5mm mini-stereo, female
IR Out Connector (Sender / Receiver)	·	1 x 3.5mm mini-stereo, female
Power Requirement (Sender / Receiver)	·	5V DC, or PoE (802.3af standard)
Power Connector (Sender / Receiver)	·	1 x 5V DC, locking, 5.5mm barrel/2.1mm pin
Power Indicator (Sender / Receiver)	·	1 x LED, blue
Link Indicator (Sender / Receiver)	·	1 x LED, green

Continued on next page

Operational		
Operating Temperature	·	+32 to +122°F (0 to +50°C)
Operating Humidity	·	5% to 90% RH, non-condensing
Storage Temperature	·	-4 to +185°F (-20 to +85°C)
Storage Humidity	·	0% to 95% RH, non-condensing
MTBF	·	50000 hours

Physical		
Dimensions (W x H x D, not including connectors)	·	Sender: 8.4" x 1.7" x 5.9" (214mm x 43mm x 150mm)
	·	Receiver: 8.4" x 1.0" x 5.9" (214mm x 25mm x 150mm)

* Features and specifications are subject to change without notice.
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Nortek Security & Control, LLC
1800 S McDowell Blvd. Petaluma CA 94954, USA
1-707-283-5900 1-800-472-5555

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Part Number: MAN-EXT-xxxKA-LANS