DVI KVM over IP

EXT-DVIKVM-LANTX
EXT-DVIKVM-LANRX

User Manual

Release A9

Important Safety Instructions

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.

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.
2. Customers outside the US are responsible for shipping charges to and from Gefen.
3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

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

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(818) 772-9120

Email

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Mailing Address

Gefen, LLC
c/o Customer Service
20600 Nordhoff St.
Chatsworth, CA 91311

Product Registration

Register your product here: http://www.gefen.com/kvm/Registry/Registration.jsp

- The Gefen Syner-G Software Suite is a free downloadable application from Gefen that provides network configuration assistance and automatic download and installation firmware upgrades for this product. Always make sure that the DVI KVM over IP is running the latest firmware.
- The DVI KVM over IP is compatible with the HD KVM over IP, DVI KVM over IP w/ Local DVI Output, VGA KVM over IP, and the HD over IP w/ RS-232 and 2-way IR which allows these products to be connected within a single system.
- Gefen highly recommends the use of the Syner-G software and Matrix Controller (Gefen part no. EXT-CU-LAN) for setting up and controlling the operation of a Video-over-IP network using these products.
- Shielded CAT-5e (or better) cables should not exceed 330 feet (100 meters) between the Sender / Receiver unit and the network.
- By default, all Sender and Receiver units are set to channel 0.
- This product does not support dual link resolutions.
- By default, the source device will use the EDID from the display (or other sink device) which is connected the Receiver unit. See EDID Management (page 48) for more information.
- If terminating network cables in the field, please adhere to the TIA/EIA568B specification. See the Network Cable Diagram (page 166) for details.

Important

The use of a Gigabit switch with higher than 8K “jumbo frame” capability is required when connecting the DVI KVM over IP to a network.

- 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.

DVI KVM over IP is a trademark of Gefen, LLC.

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Gefen, LLC reserves the right to make changes in the hardware, packaging, and any accompanying documentation without prior written notice.

This product uses UL listed or CE-compliant power supplies.

Features

- Extends DVI, USB, RS-232, bi-directional stereo analog audio, and IR over IP, using a Gigabit Local Area Network
- Any combination of HDMI, DVI, and VGA Senders and Receivers can be used together to create a “Virtual Matrix”
- Supports resolutions up to 1080p Full HD and 1920 x 1200 (WUXGA)
- Supports 2 USB devices at Receiver side, with 500mA current capability per port, USB 2.0 data rates up to 480 Mbps, and backward-compatibility with USB 1.1
- Any of the Senders within a network can be accessed by any Receiver unit via a web browser on a mobile device or computer, or by using the Gefen Keyboard Switching Controller software (available for download at www.gefen.com)
- Supports a total of just over 65,000 Sender and Receiver units, depending on the network bandwidth and number of ports on your network switch
- Three-port Ethernet switch built into the Receiver unit
- Switch/USB button facilitates scrolling between multiple Senders and accessing a USB host computer from multiple Receivers
- Mode button on Sender for sharpness or motion optimization of image
- Easy-to-use web server interface for quick system set-up, operation, and firmware upgrade
- Locking power supply connectors
- 1U tall, half-rack width enclosures are rack-mountable using EXT-RACK-1U
- Surface mounting brackets included

Packing List

The DVI KVM over IP ships with the items listed below. The packing contents of the Sender and Receiver unit are listed below. If any of these items are not present in the box when you first open it, immediately contact your dealer or Gefen.

EXT-DVIKVM-LANTX

- 1 x DVI KVM over IP (Sender unit)
- 1 x 6 ft. DVI cable (M-M)
- 1 x 6 ft. USB cable (A-B)
- 1 x 6 ft. DB-9 cable (M-F)
- 2 x Mounting brackets with screws
- 1 x 5V DC power supply
- 1 x Quick-Start Guide

EXT-DVIKVM-LANRX

- 1 x DVI KVM over IP (Receiver unit)
- 2 x Mounting brackets with screws
- 1 x 5V DC power supply
- 1 x Quick-Start Guide

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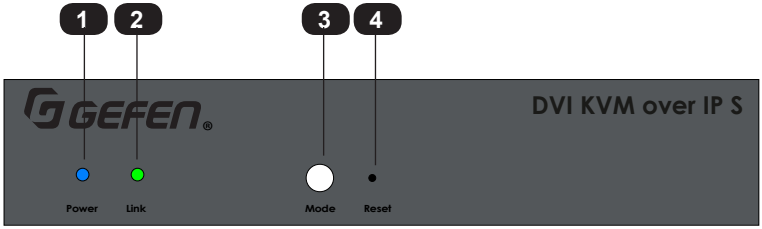
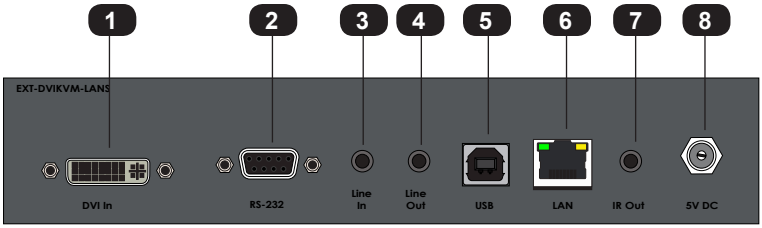
DVI KVM over IP

1 Getting Started

Sender Unit

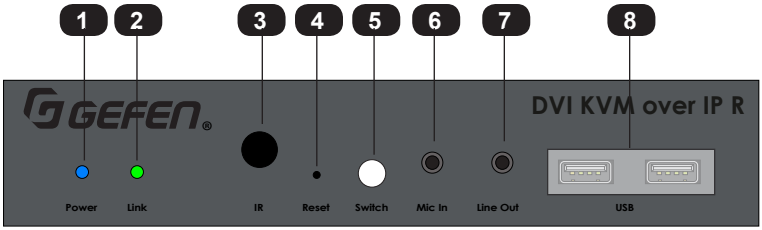


ID	Name	Description
1	Power	This LED glows solid blue when the unit is connected to an AC outlet and the unit is powered ON.
2	Link	This LED glows solid green when the Sender unit and Receiver unit are connected and passing video.
3	Mode	Press this button to switch between the Video Mode. See Setting the Video Mode (page 65) for more information.
4	Reset	Press this button to reset the unit to factory-default settings. See Performing a Factory Reset (page 68) for more information.

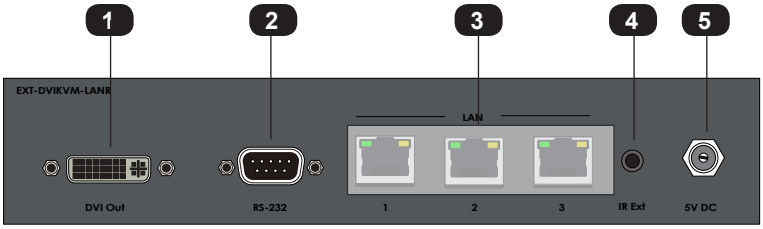


ID	Name	Description
1	DVI In	Connect the included DVI cable from this connector to the DVI source.
2	RS-232	Connect the included RS-232 cable from this port to an RS-232 device. See Using RS-232 (page 36) for more information.
3	Line In	Connect a 3.5mm mini-stereo cable from the Line Out jack on the multimedia PC to this jack.
4	Line Out	Connect a 3.5mm mini-stereo cable from this jack to the Line In jack of a multimedia PC.
5	USB	Connect the included USB cable from the computer to this USB port.
6	Link	Connects the Sender unit to the network (or directly to the Receiver unit) using shielded CAT-5e (or better) cable.
7	IR Out	Connect an IR Emitter (Gefen part no. EXT-IREMIT) from this jack to the DVI source to control the source from the viewing location.
8	5V DC	Connect the included 5V DC locking power supply to this power receptacle.

Receiver Unit



ID	Name	Description
1	Power	This LED glows solid blue when the unit is connected to an AC outlet and the unit is powered ON.
2	Link	This LED glows solid green when the Sender and Receiver units are connected using a shielded CAT-5e (or better) cable and successfully passing video.
3	IR	This IR sensor receives signals from IR remote control of the source device.
4	Reset	Press this button to reset the unit to factory-default settings. See Performing a Factory Reset (page 68) for more information.
5	Switch	Switches the video channel when using multiple Receiver units on a network. See Setting the Video Channel (page 18) for more information.
6	Mic In	Connect a microphone to this jack. If the microphone has a 1/4" jack, use a 1/4"-to-3.5mm adapter to connect the microphone to the Receiver unit.
7	Line Out	Connect a 3.5mm mini-stereo cable from this jack to a pair of powered speakers. See Audio Connections (page 50) for more information.
8	USB	Connect up two USB devices to these USB ports.



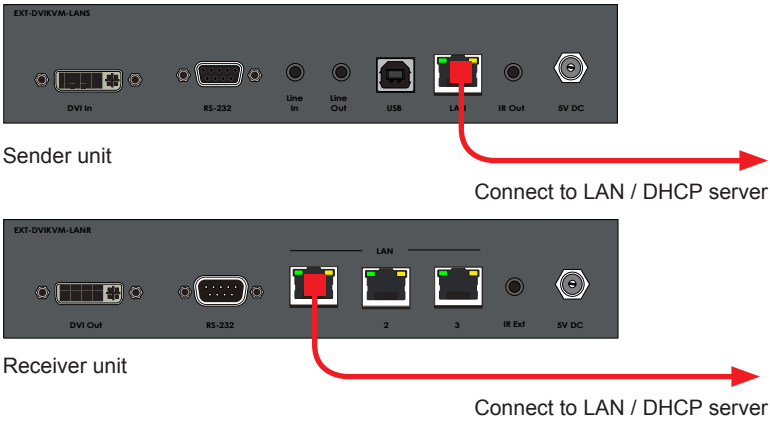
ID	Name	Description
1	DVI Out	Connect a DVI cable from this connector to the DVI display.
2	RS-232	Connect an RS-232 cable from this port to an RS-232 device. See Using RS-232 (page 36) for more information.
3	Ethernet (1, 2, 3)	Connects the Receiver unit to the network (or directly to the Sender unit) using shielded CAT-5e (or better) cable. See the next page for installation instructions.
4	IR Ext	Connect an IR Extender (Gefen part no. EXT-RMT-EXTIRN) to this port.
5	5V DC	Connect the included 5V DC locking power supply to this power receptacle.

The DVI KVM over IP Sender and Receiver units can be connected over a Local Area Network (LAN) or they can be directly connected to one another. We will cover both installations.

Local Area Network (LAN) Connection

In order to connect the DVI KVM over IP to a Local Area Network (LAN), both the Sender and Receiver unit must first be set to *DHCP* mode or *Static* IP mode. *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.

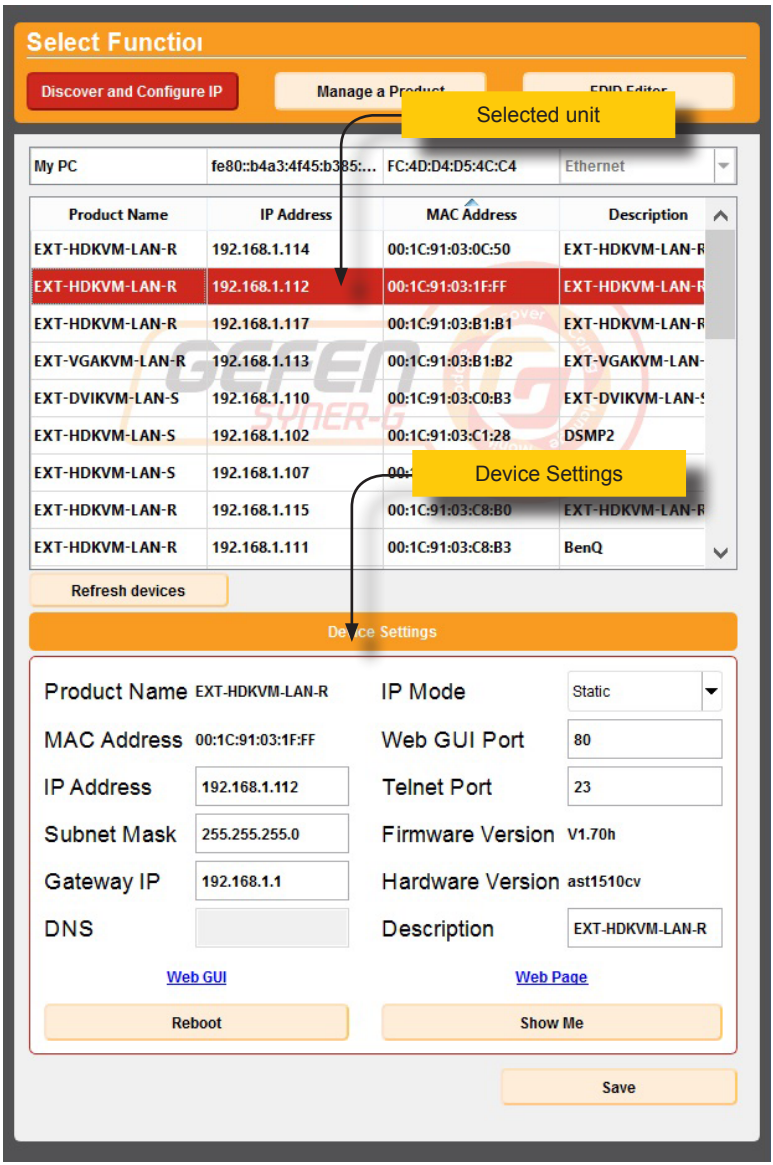
1. Use the included HDMI cable to connect the Hi-Def source to the **HDMI In** port on the Sender unit.
2. Connect an HDMI cable from the Hi-Def display to the **HDMI Out** port on the Receiver unit.
3. Connect a shielded CAT-5e (or better) cable from the **Link** port on the Sender unit to the network.
4. Connect a shielded CAT-5e (or better) cable from one of the **Ethernet** ports on the Receiver unit to the network.
5. Connect the included 5V DC locking power supplies to both the Sender unit and Receiver unit. Do not overtighten the locking connectors. Connect the included AC power cords from the power supplies to available electrical outlets.



6. 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.

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

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



9. Once all IP settings have been adjusted, click the **Save** button.

10. Click the **Reboot** button to apply changes.

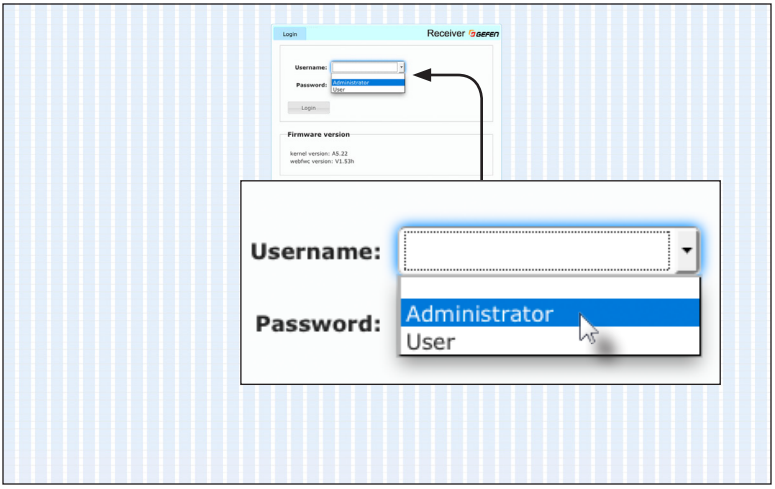
11. Repeat steps 7 - 10 for each Sender and Receiver unit as necessary.

> **Information**
>
> The IP address of both the Sender and Receiver unit can be viewed by disconnecting the HDMI cable from the Sender unit (of from the source device), as shown in the example below.

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

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

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

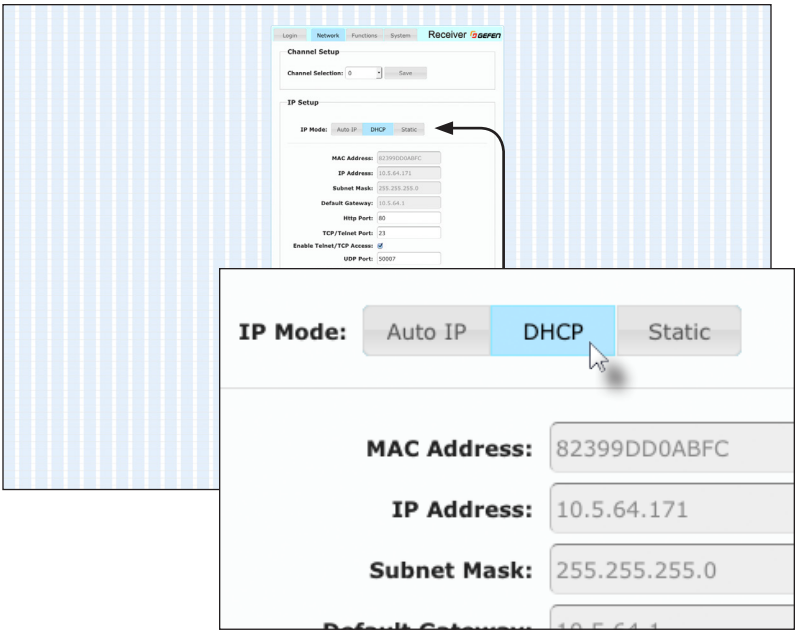


15. Type the password in the **Password** field. The default password for “Administrator” is `admin`. The password is case-sensitive and will be masked as it is entered.

> **Information**
>
> 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 67) for more information.

16. Click the **Login** button.

17. Click the **Network** tab. The current IP Mode will be highlighted within the **IP Setup** window group.



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

- If you will be using Static mode, 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.

  For this example, we will click the **DHCP** button.

19. Set the video channel. By default, both the Sender and Receiver unit are set to channel 0. See Setting the Video Channel (page 18) for more information.

20. Click the **Save** button in the bottom-right corner of the **IP Setup** window group.

21. Click the **Reboot** button near the bottom of the page.

22. Repeat steps 12 - 21 for each Sender and Receiver to be configured.

Important

The use of a Gigabit switch with “jumbo frame” capability is required when connecting the DVI KVM over IP to a network. The switch should be set to greater than 8K.

Using a Direct Connection

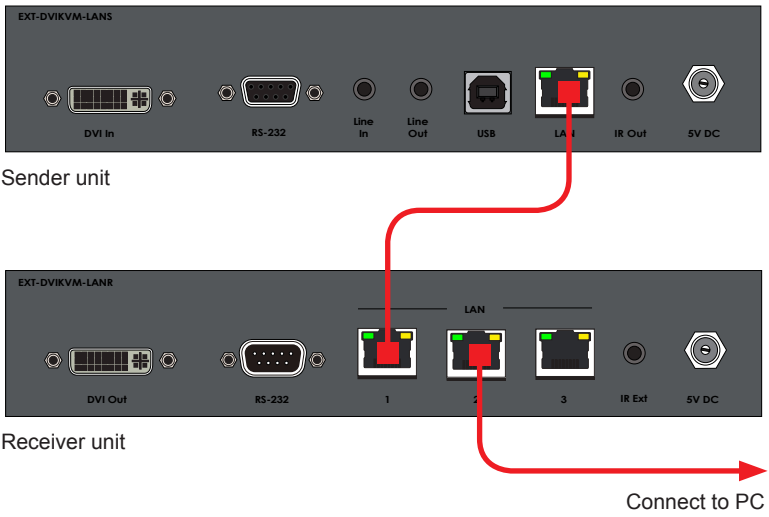
By default, the DVI KVM over IP is shipped in *Auto IP* mode. *Auto IP* mode is used for directly connecting Sender and Receiver units to one another. In *Auto IP* mode each Sender and Receiver unit assigns itself a unique IP address within the range of `169.254.x.x`. To configure the units to work over a LAN, we must access the Web interface of the Sender and Receiver unit on a computer. Then, we can change the network settings.

1. Use the included DVI cable to connect the DVI source to the **DVI In** port on the Sender unit.

2. Connect a DVI cable from the DVI display to the **DVI Out** port on the Receiver unit.

3. Connect a shielded CAT-5e (or better) cable from the **LAN** port on the Sender unit to the **LAN 1** port on the Receiver unit.

4. Connect another shielded CAT-5e (or better) cable from one of the **Ethernet** ports on the Receiver unit to a PC.



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

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

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

8. See Local Area Network (LAN) Connection (page 6) and follow steps 6 - 20, in order to configure your PC to access the built-in Web interface.

9. Set the video channel. By default, both the Sender and Receiver unit are set to channel 0. See Setting the Video Channel (page 18) for more information.

10. 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.

11. See Supplementary Connections (page 13) for instructions on connecting USB, IR, RS-232, and audio cables.

Supplementary Connections

► **USB** (see USB Control (page 40) for more information on using USB devices)

1. Connect the included USB cable from the computer to the **USB** port on the Sender unit.
2. Connect a maximum of two USB devices to the Receiver unit.

► **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.

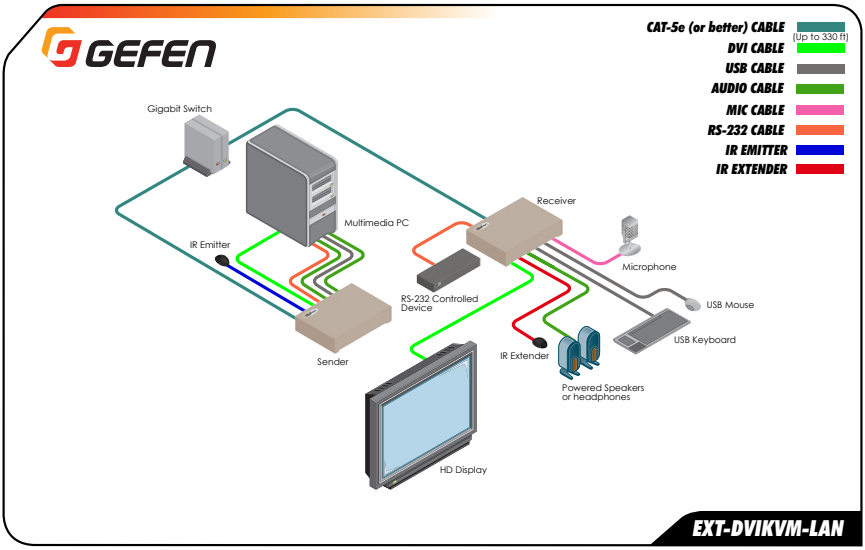
► **Audio** (see Audio Connections (page 50) for more information on using audio devices)

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

► **RS-232**

9. Connect the included 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



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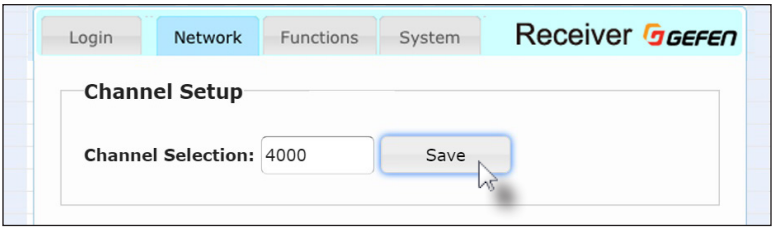
DVI KVM over IP

2 Basic Operation

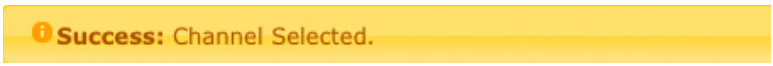
In order a Sender and Receiver unit to communicate with one another, they must both be set to the same video channel. This is similar to changing the channel on a set-top box in order to view a different program. Pressing and releasing the **Switch** button on the front of the Receiver unit can also be used to change the video channel. We will cover both methods in this section. By default, all Sender and Receiver units are set to channel 0.

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 **Network** 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 **Save** 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.

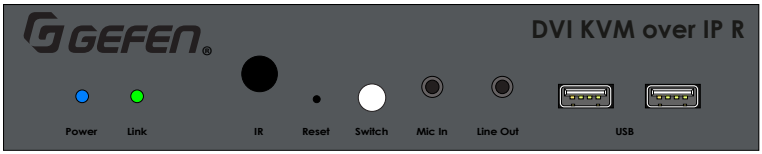


If the entered value is invalid, then the following message will be displayed:

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 and release the **Switch** button on the front panel of the Receiver unit.

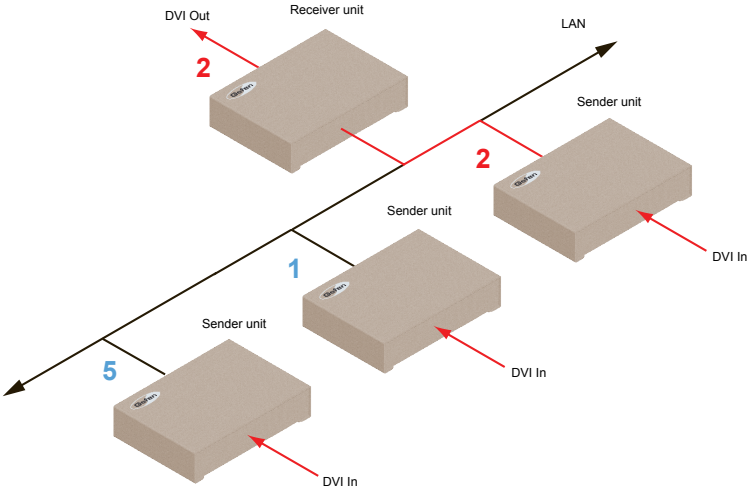


2. The current video channel of the Receiver unit will be shown on the connected display.

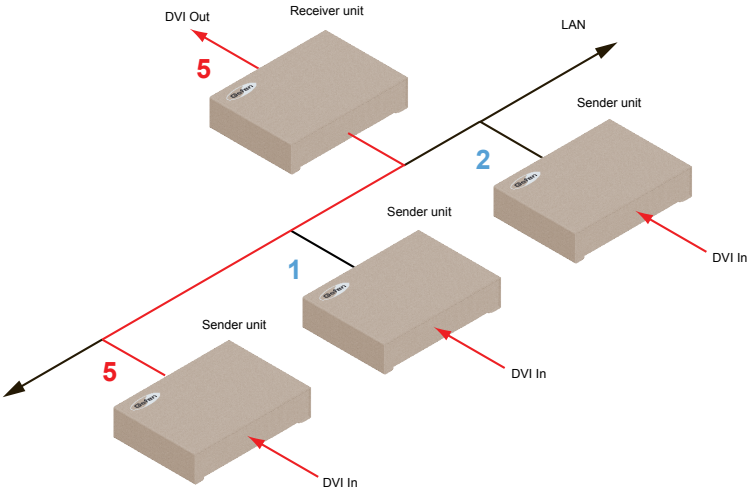
3. While the current video channel is being displayed, press and release the **Switch** button on the Receiver unit. The Receiver unit will change to the next available video channel that is being used by a Sender unit.

3. 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.

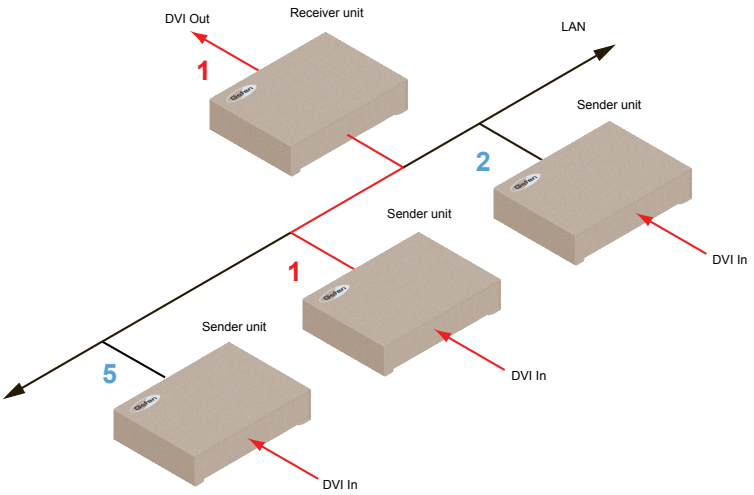
   Let's look at an example: In the illustration below, we have one Receiver unit and three Sender units. The numbers indicate the video channel for each Sender and Receiver unit. Our Receiver unit is currently set to channel 2 and is receiving the signal from the Sender unit on channel 2.



If we press and release the **Switch** button, the Receiver unit will automatically jump to channel 5 because it is the next "larger" video channel number.



4. Press the Switch button again to jump to the next available channel. In this case, channel 5 is the largest video channel number. Therefore, pressing the **Switch** button will return to video channel 1.



5. To set the video channel on a Sender unit, use the Web interface. See Setting the Channel using the Web Interface (page 18) for more information.

Blocking & Masking Video

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 **EDID Management** window group, check the **Mask Enable** box to mask the video. Deselect this check box to unmask (enable) video.

5. Click the **Save** button within the **EDID Management** group.
6. Click the **Reboot** button at the bottom of the page.
7. Repeat steps 1 through 6 for each Sender and/or Receiver unit in the system.

► Block Video

Information

The Block Video 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 **EDID Management** window group, check the **Block Enable** box to block the video. Deselect this check box to unblock (enable) video.

5. Click the **Save** button within the **EDID Management** group.
6. Click the **Reboot** button at the bottom of the page.
7. Repeat steps 1 through 6 for each Sender and/or Sender unit in the system.

Configuring Unicast Mode

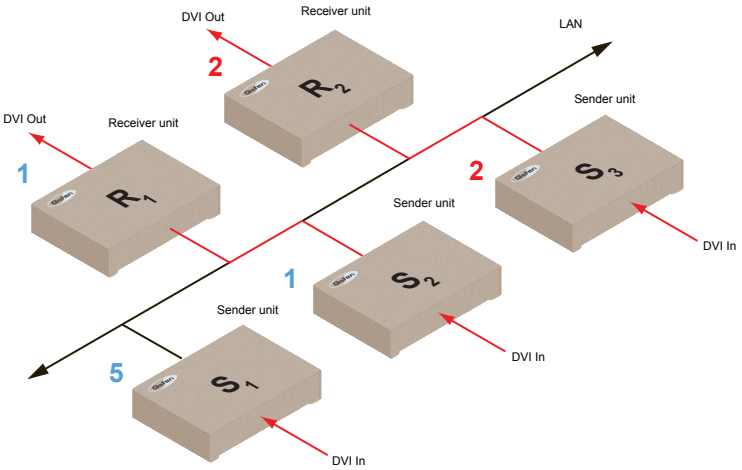
The term *unicast* is used to describe a configuration where information is sent from one point to another point. It is possible to have multiple Sender and Receiver units connected in a system. However, in unicast mode a Sender unit can communicate with only one Receiver unit at a time. In *unicast*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

Information

The DVI KVM over IP Sender and Receiver units 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.

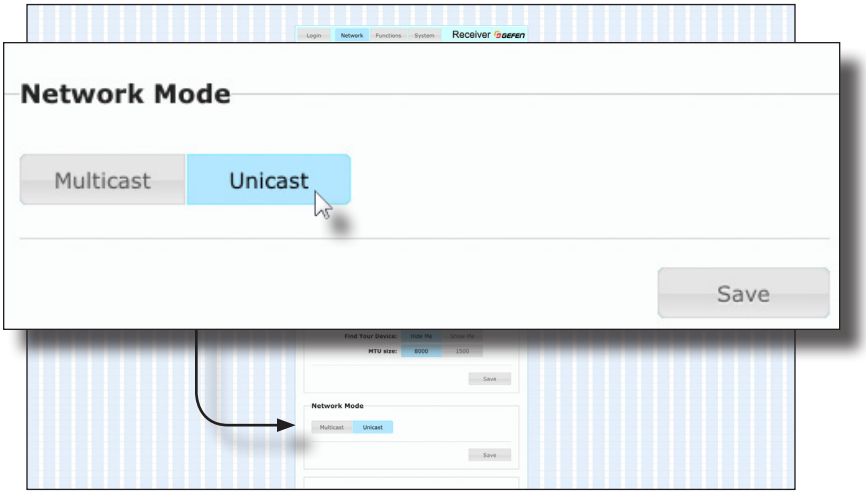
2. Login as “Administrator”.

Tip

In *unicast mode*, the DVI KVM over IP behaves as a DVI KVM Switcher.

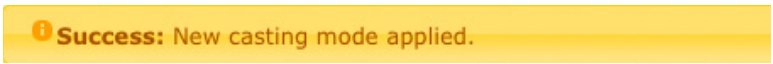
3. Click the **Network** tab.

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

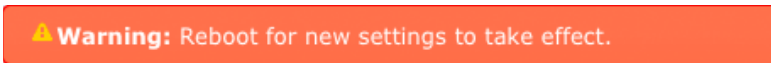


5. Click the **Save** button in the lower-right corner of the **Network Mode** group.

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

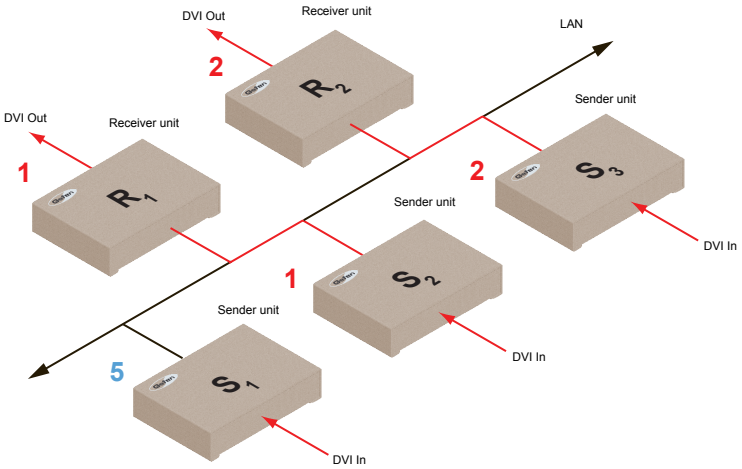
When switching between *unicast* and *multicast* modes, both Sender and Receiver units must be set to the same mode.

Switching between Sender units in Unicast mode

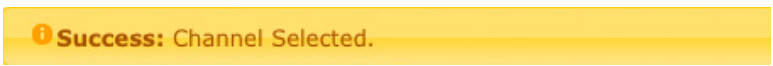
When multiple Sender and Receiver unit are used in *unicast* mode, the DVI KVM over IP behaves as a switcher. In *unicast* mode, a Sender unit can communicate with only one Receiver unit at a time.

In the example below, we will switch Receiver unit R1 to receive the DVI source on Sender unit S1. To do this, all we need to do is change the video channel.

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

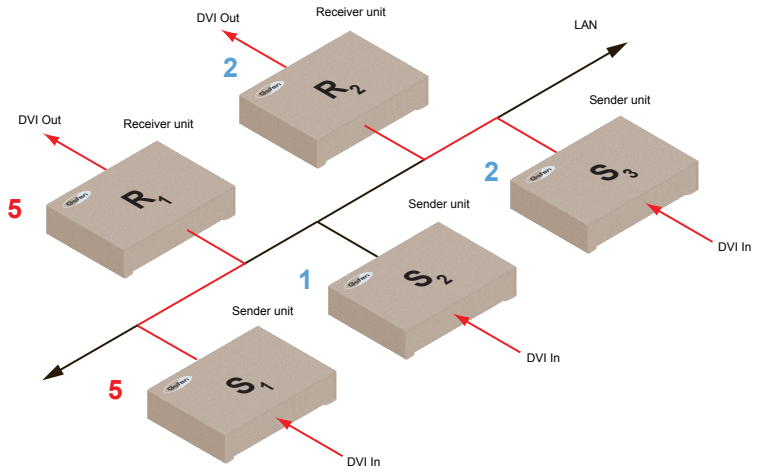


1. Access the Web interface for Receiver unit R1.
2. Login as “Administrator”.
3. Click the **Network** tab and change the video channel. Refer to Setting the Video Channel if necessary.
4. Click the **Save** button.
5. The following message will be displayed, at the top of the page, indicating that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



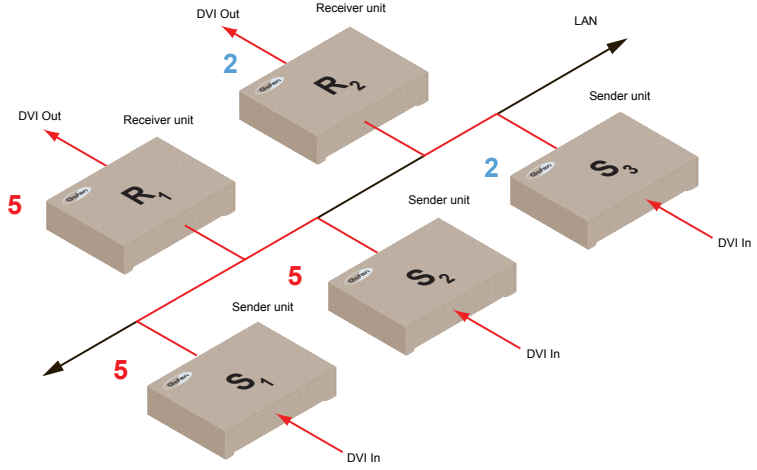
6. Receiver unit R1 is now receiving the DVI source on Sender unit S1, as shown on the next page.

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



Now, let's set both Sender S1 and S2 to channel 5 and observe what happens:

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.

Multiple Receiver units can simultaneously connect to any Sender unit within the network including the Gefen KVM over LAN products with HDMI, DVI, or VGA video, to create a virtual matrix of just over 65,000 Sender and Receiver units, depending on the network bandwidth and number of ports on the network switch. Although any combination of HDMI, DVI, and VGA Senders and Receivers can be used, HDCP content is only supported by HDMI Sender and Receiver units.

Information

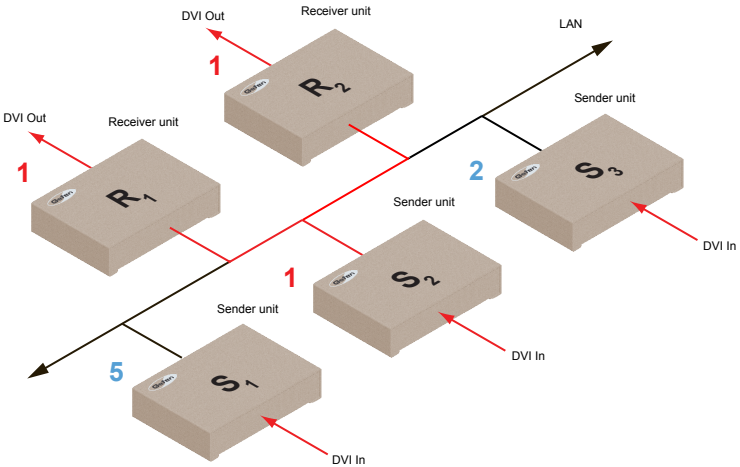
In *unicast* mode, if an additional Sender unit is introduced into a system with the same channel as another Sender unit, then the Receiver unit will continue to receive audio/video data from the Sender unit which was connected first.

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 DVI KVM over IP functions similar to a DVI 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.

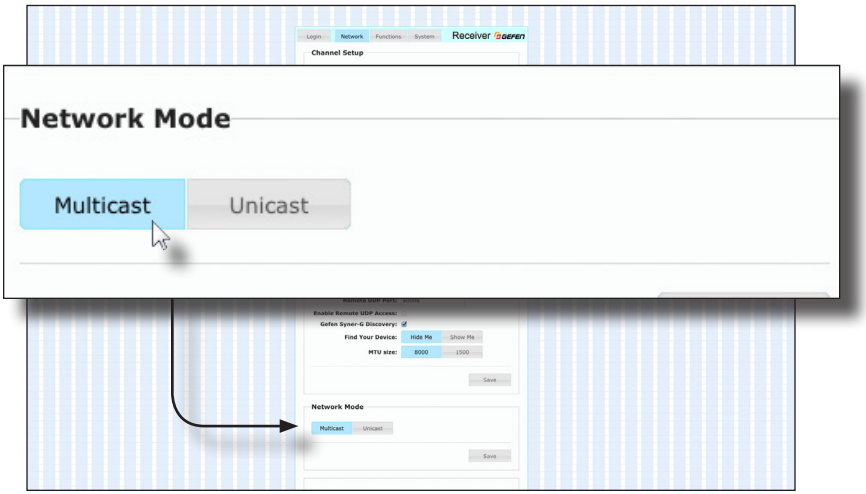
2. Login as “Administrator”.

Tip

In *multicast mode*, the DVI KVM over IP behaves as a DVI 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 blue.



5. Click the **Save** 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.

   Success: New casting mode applied.

   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, refer to USB under Multicast Mode.

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.

   Warning: Reboot for new settings to take effect.

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

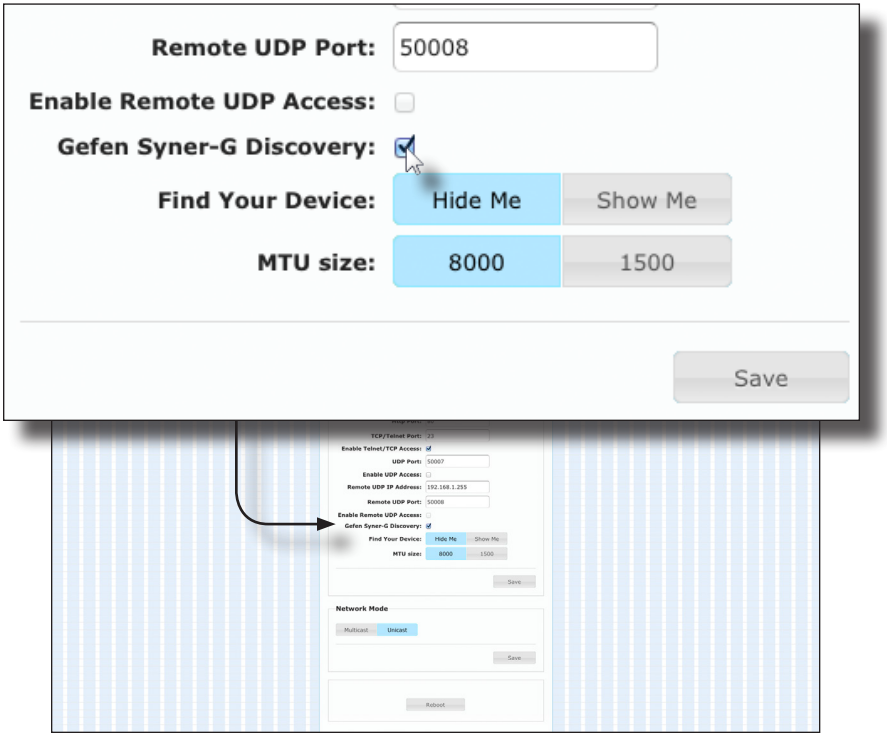
Important

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 **Save** button.
6. Click the **Reboot** button at the bottom of the page to restart the unit and apply the change.

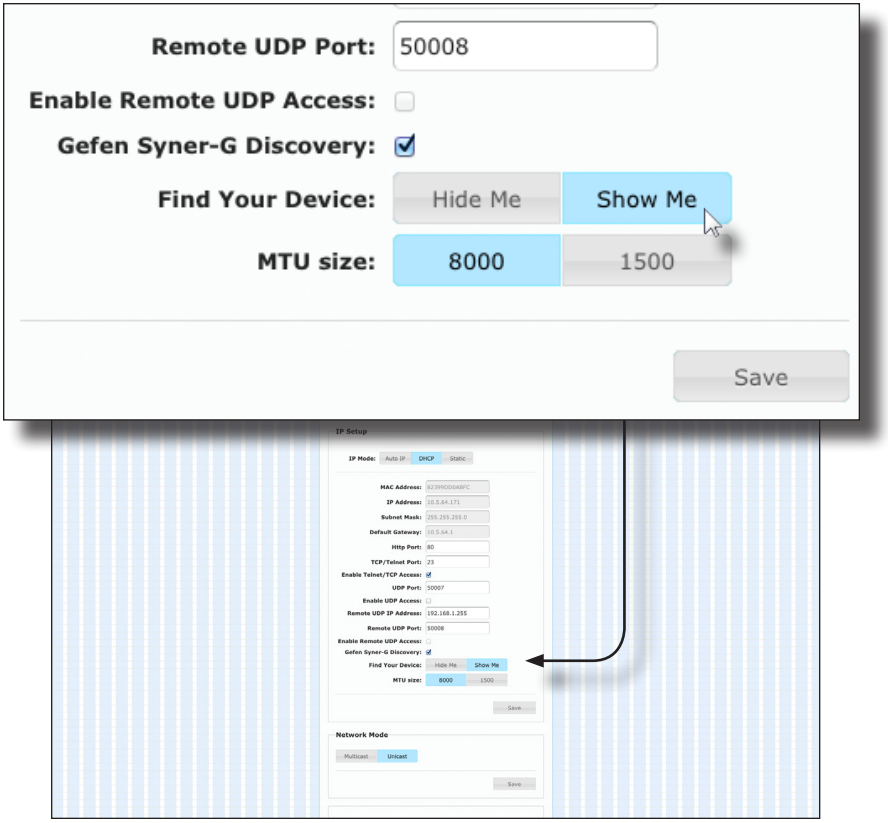


Finding Your Device

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.

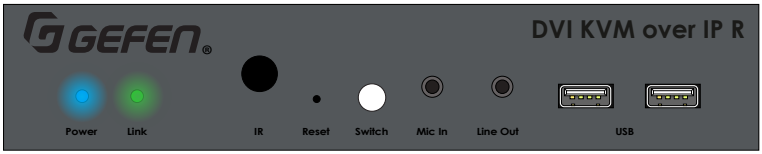
1. Access the Web interface by entering the IP address of a Receiver or Sender unit.
2. Login as “Administrator”.
3. Click the **Network** tab.
4. Under the **IP Setup** window group, click the **Show Me** button. By default, the **Hide Me** button will be selected.

   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.

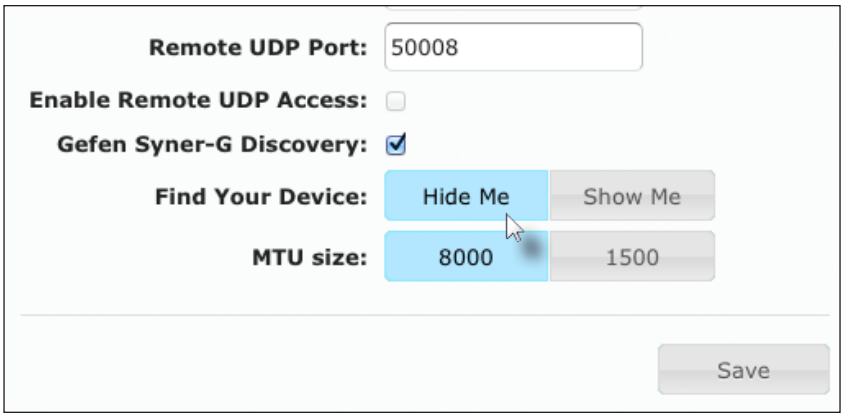


5. The following message will be displayed, at the top of the page, indicating that the LED indicators on the unit are blinking.

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



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.

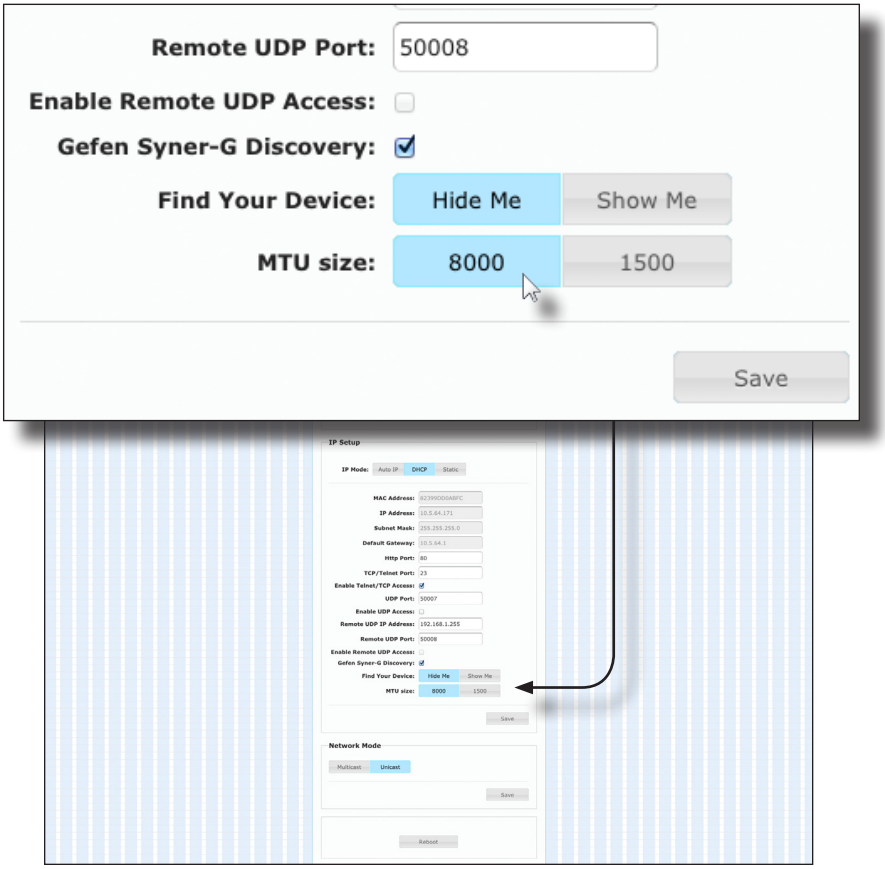
MTU Size

The MTU (Maximum Transmission Unit) size setting relates to the maximum data packet size that can be transmitted between the Sender and Receiver unit. Use this setting based on the maximum bandwidth of the network switch that is being used.

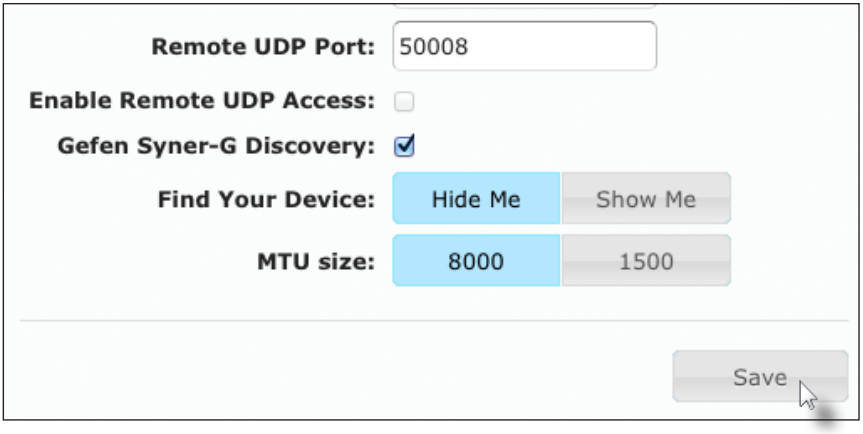
1. Access the Web interface by entering the IP address of a Receiver or Sender unit.
2. Login as “Administrator”.
3. Click the **Network** tab.
4. Click the **8000** or **1500** button to set the desired MTU size.

   ► If you are using a gigabit switch with 8K jumbo frame capability, then click the **8000** button.

   ► If you are using a megabit switch, then click the **1500** button.



5. Click the **Save** button.



6. Click the **Reboot** button at the bottom of the page to restart the unit and apply the change.

7. Repeat steps 1 - 6 for each Sender and Receiver unit.

The DVI KVM over IP supports 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

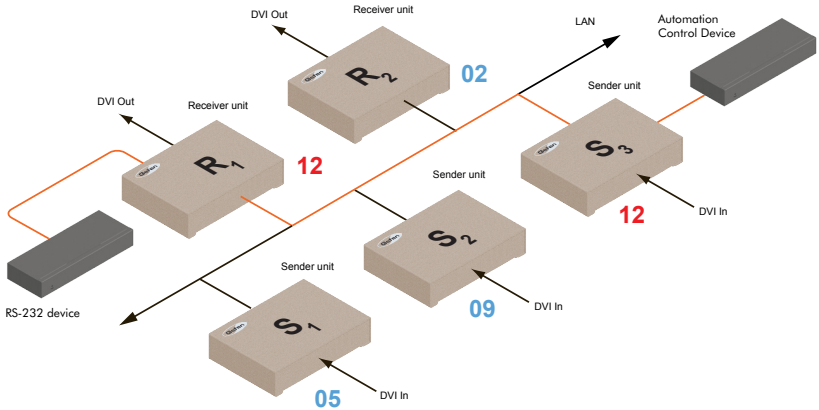
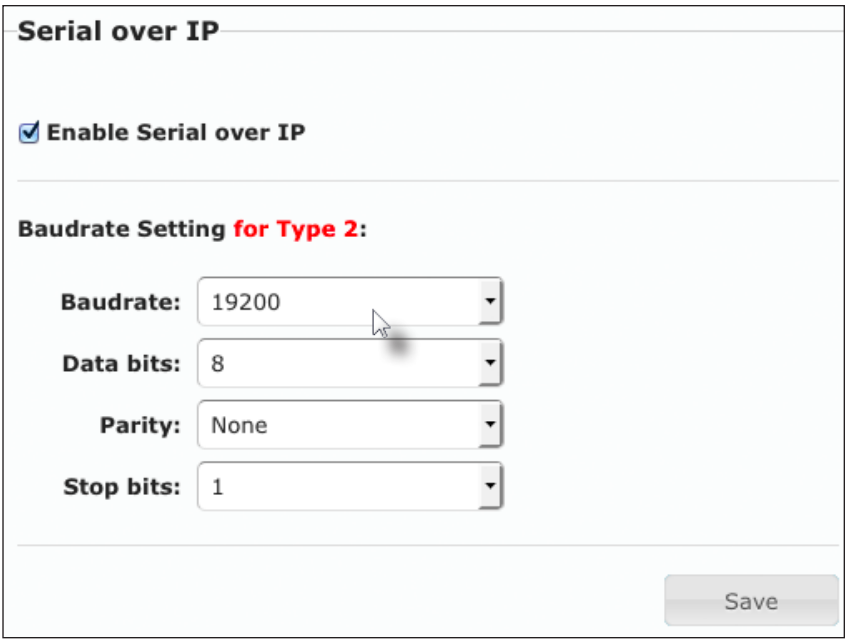


Table 2.1 - RS-232 settings for an arbitrary RS-232 device.

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

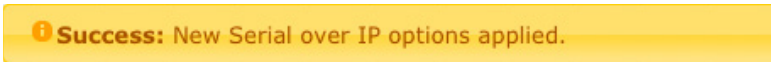


4. Make sure that the **Enable Serial over IP** box is checked.

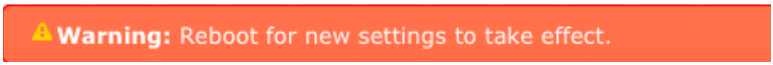
> **Important**
>
> If **Enable Serial over IP** is not checked, then RS-232 pass-through will be disabled.

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

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.

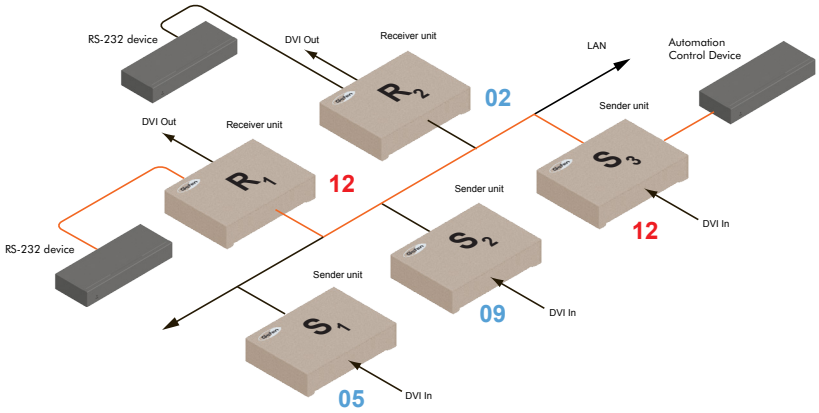


8. Repeat steps 1 - 7 for the Receiver unit.

RS-232 under Unicast Mode

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

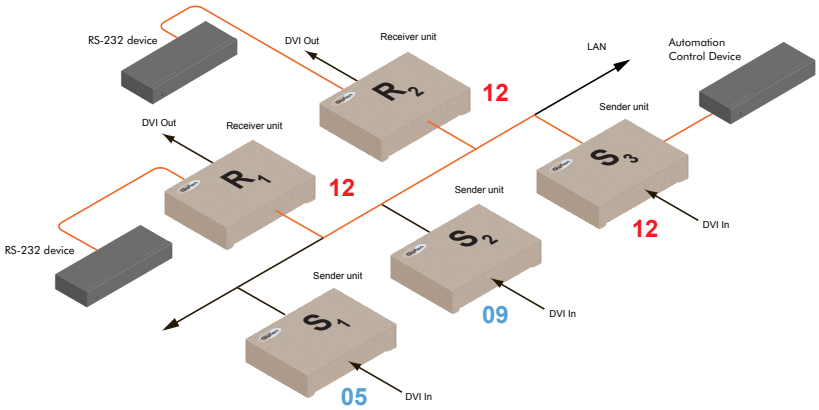
Figure 2.7 - In unicast mode, the host can talk to only one RS-232 device at a time.



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

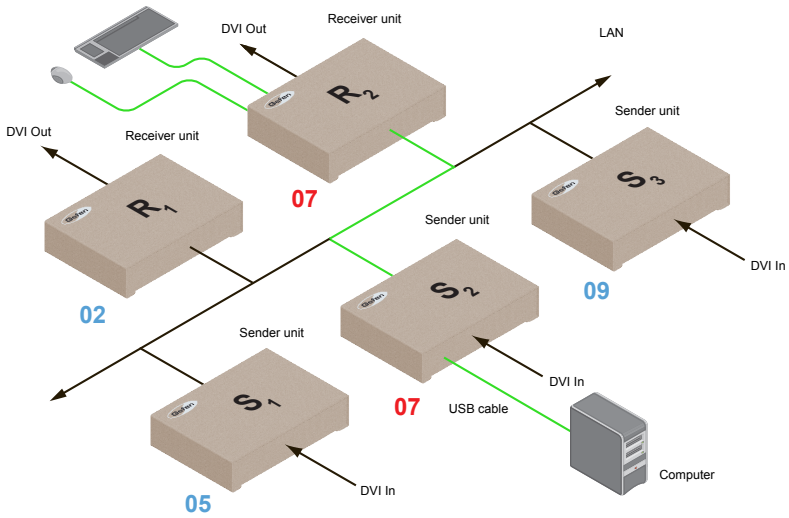
When connecting USB devices to the DVI KVM over IP, the functionality is similar to that of video and RS-232.

Information

The DVI KVM over IP Sender and Receiver units shipped from the factory in *unicast mode*.

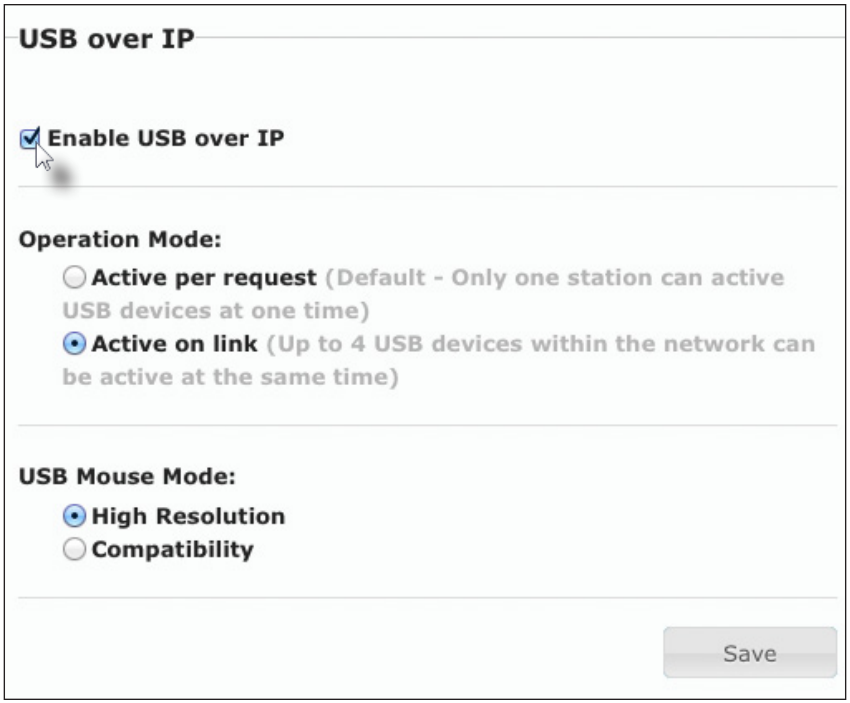
As an example, we will start with our original diagram and connect a computer to Sender unit S2 and a keyboard and mouse device to Receiver unit R2. This will allow us to control the computer from the Receiver unit.

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.

4. 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.



5. 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.

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

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

8. Connect a USB device (keyboard and/or mouse) to a USB port on the Receiver unit. Up to 4 USB devices can be connected per network in *unicast* mode.

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

Important

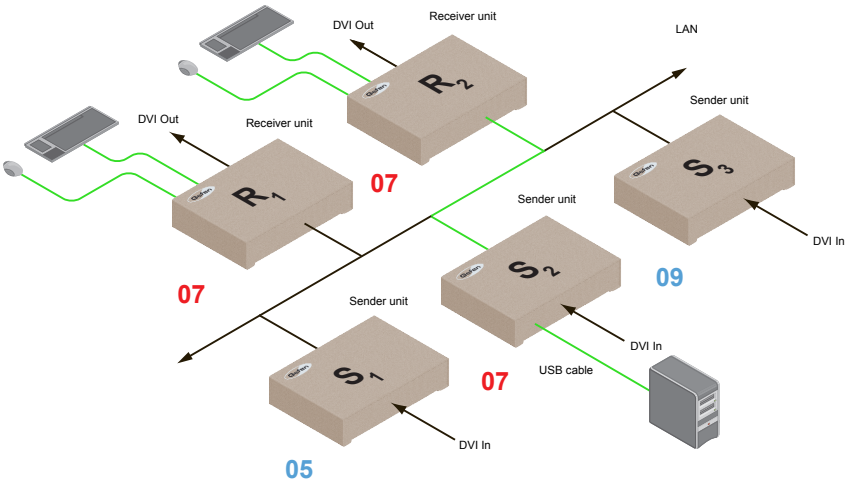
When enabling or disabling USB over IP, the **Save** and **Reboot** buttons must be clicked to apply changes.

USB under Multicast Mode

When connecting USB devices to the DVI KVM over IP, 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.

For an example, we'll begin with the last diagram and connect another keyboard and mouse device to Receiver R1. This will allow us to control the computer from two separate locations.

Figure 2.9 - Using USB devices under multicast mode.

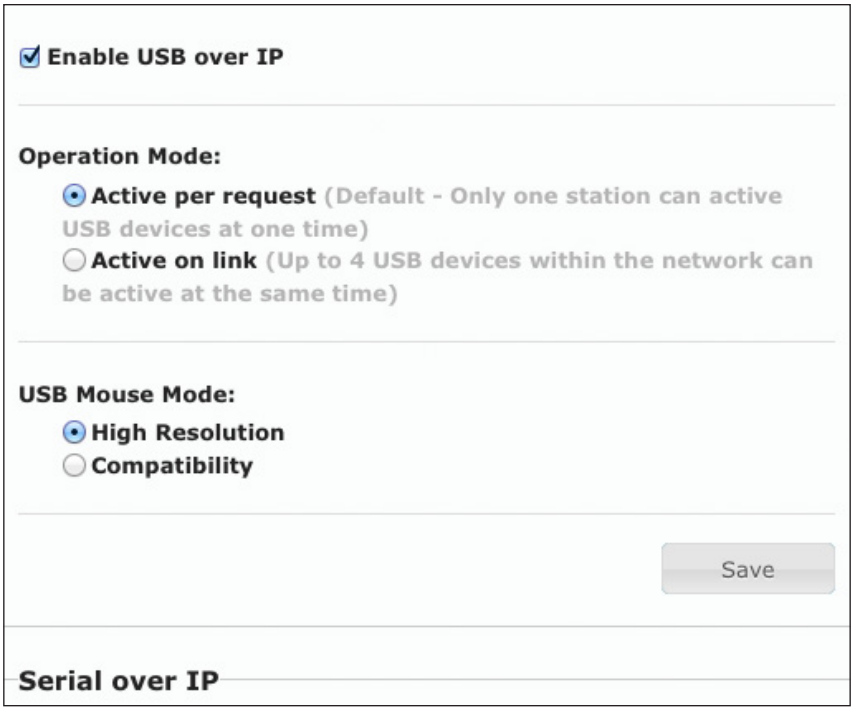


1. Make sure the desired Sender and Receiver units are set to *multicast* mode. Refer to Configuring Multicast Mode if necessary.

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.



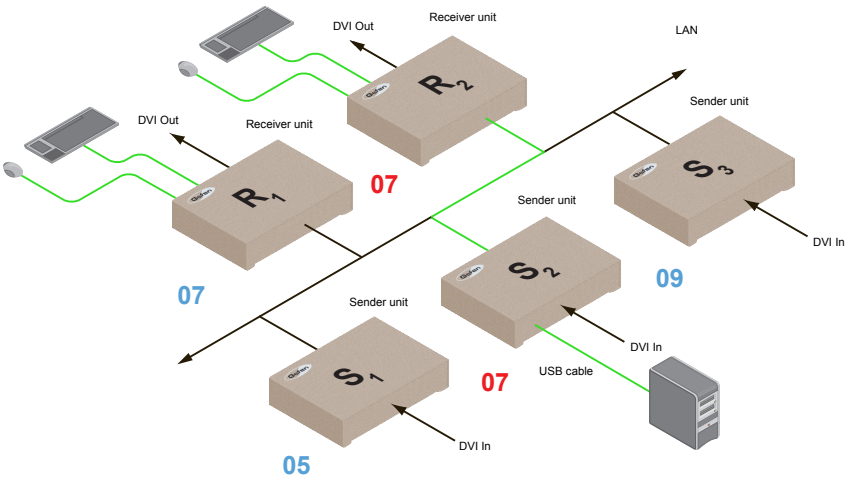
Note that in *multicast* mode, the **Operation Mode** for both Sender and Receiver units are automatically set to **Active per request** mode.

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 **Save** and **Reboot** buttons must be clicked to apply changes.

Now, let's look at an example of switching USB control between two Receiver units. Using the diagram, above, we want Receiver unit R1 to have USB control.

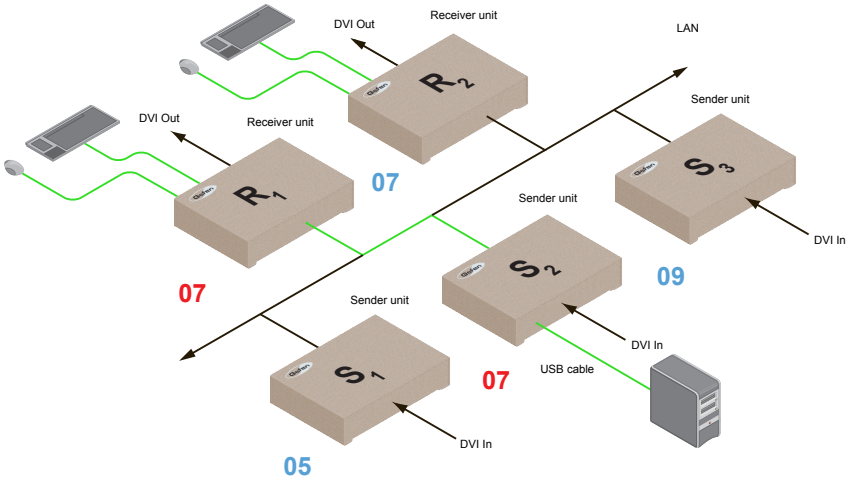
To assign USB control to another Receiver unit, follow the steps on the next page.

Active per request mode

1. Press and hold the **Switch** button on the desired Receiver unit, for at least two seconds. In this example, we will depress the **Switch** button on Receiver unit R1.

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

Figure 2.11 - Receiver unit R1 has USB control.



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

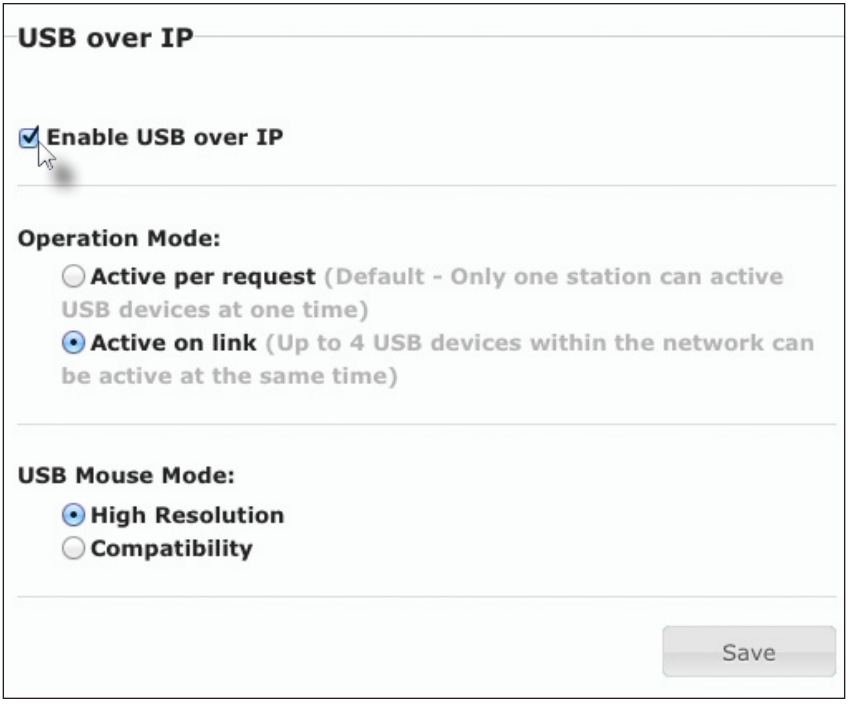
Important

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

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.

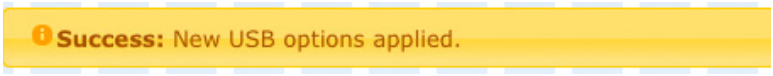


5. Click the **Active on link** radio button within the **USB over IP** group.

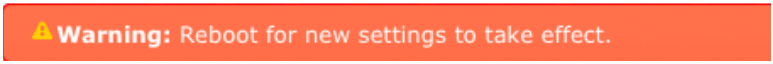
   Note that in *unicast* mode, the **Operation Mode** is automatically set to **Active on link** and cannot be changed.

6. Click the **Save** 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.

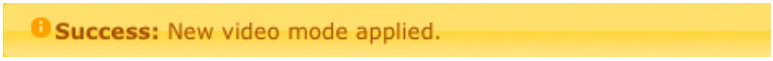
The DVI KVM over IP features EDID Management. Before the source can send video (and/or audio) data, the source device (connected to each Sender unit) reads the EDID (Extended Display Identification Data) from the displays which are connected to each Receiver unit. The EDID contains information about what type of audio/video data can be sent by each source.

By default, the (downstream) EDID from the display, connected to the Receiver unit, is used. However, under certain circumstances, it may be desirable to use the internal EDID which is stored in the Sender unit.

Using the Internal EDID

1. Access the Web interface for the Sender unit.
2. Login as “Administrator”.
3. Click the **Functions** tab.
4. Click the **Load Internal EDID** button.

5. After a few moments, the following message will appear at the top of the page, indicating that the new EDID has been applied.



Clicking the **Save** or **Reboot** button is *not* required for the changes to take effect.

Using the Downstream EDID

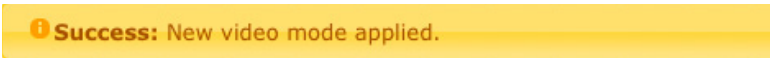
By default, the (downstream) EDID from the display, connected to the Receiver unit, is used. If the internal EDID is being used, then use the following procedure to revert to the downstream EDID.

1. Access the Web interface for the Receiver unit.
2. Login as “Administrator”.
3. Click the **Functions** tab.
4. Make sure that the **Copy EDID of Connected Display** box is checked. This is the default setting.

Information

Clicking the **Load Internal EDID** button, under the Sender unit, will override the status of the **Copy EDID of Connected Display** check box.

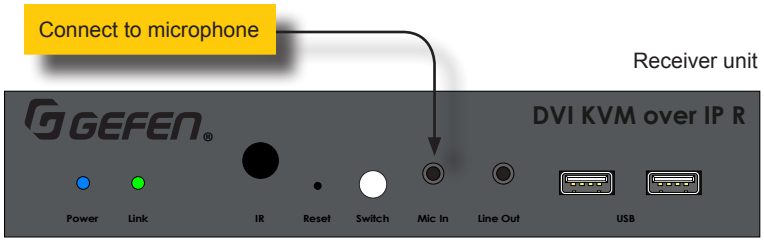
5. Click the **Save** button within the **EDID Management** window group.
6. The following message will be displayed, at the top of the page, indicating that the new Serial over IP options have been applied.



7. Click the **Reboot** button at the bottom of the page.
8. The Sender unit will now use the EDID of the downstream sink device.

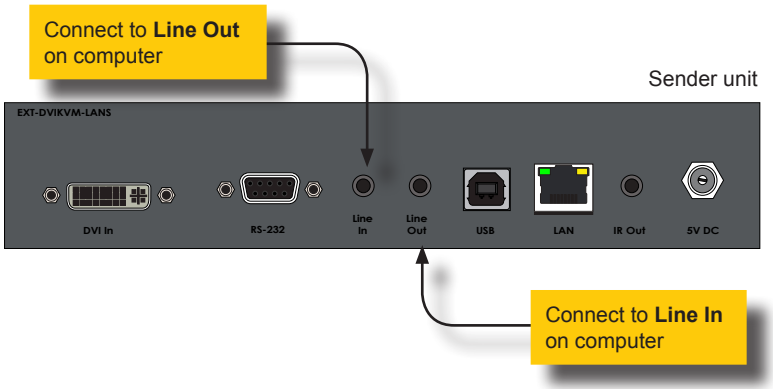
Audio works in both unicast and multicast modes. The only difference between the two modes is that the **Mic In** jack is automatically disabled, on all Receiver units, in *multicast* mode. To illustrate how audio works with the DVI KVM over IP, we will set up a microphone and some speakers.

1. Our computer has a **Line In** jack, as part of the sound card and we want to be able to access this jack from the Receiver unit. Therefore, connect the microphone to the **Mic In** jack on the Receiver unit.



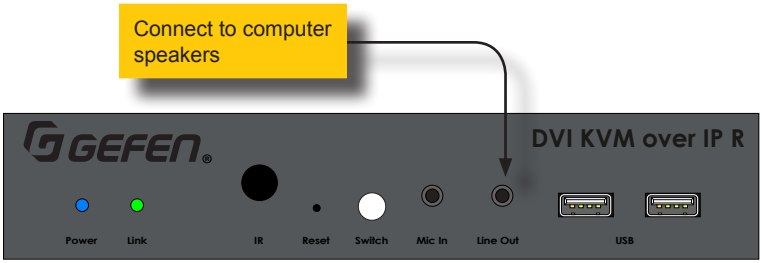
2. In order to get the audio from the microphone into the computer, connect a 3.5mm-to-3.5mm mini-stereo cable from the **Line Out** jack on the Sender unit to the **Line In** jack on the computer.

> **Warning**
>
> ***Do not*** connect the mini-stereo cable from the **Line Out** jack on the Sender unit to the **Mic In** jack on the computer. Doing so will result in audio "clipping" and may cause damage to the computer's sound card.



3. Connect another 3.5mm-to-3.5mm mini-stereo cable between the **Line Out** jack on the computer and the **Line In** jack on the Sender unit. Note that any audio device (e.g. MP3 player, etc.) can also be connected to the **Line In** jack on the Sender unit.

4. Finally, we'll connect a set of powered computer speakers to the **Line Out** jack on the 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 - Speaker and microphone connections in unicast mode.

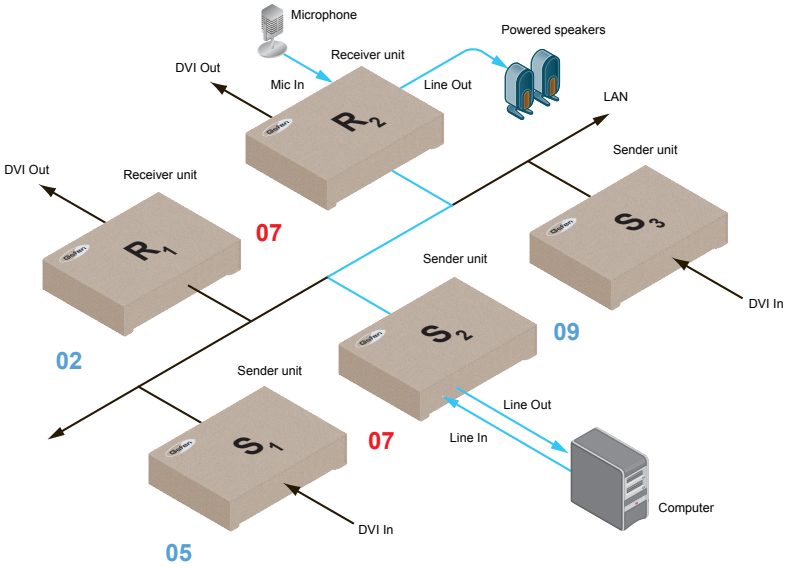
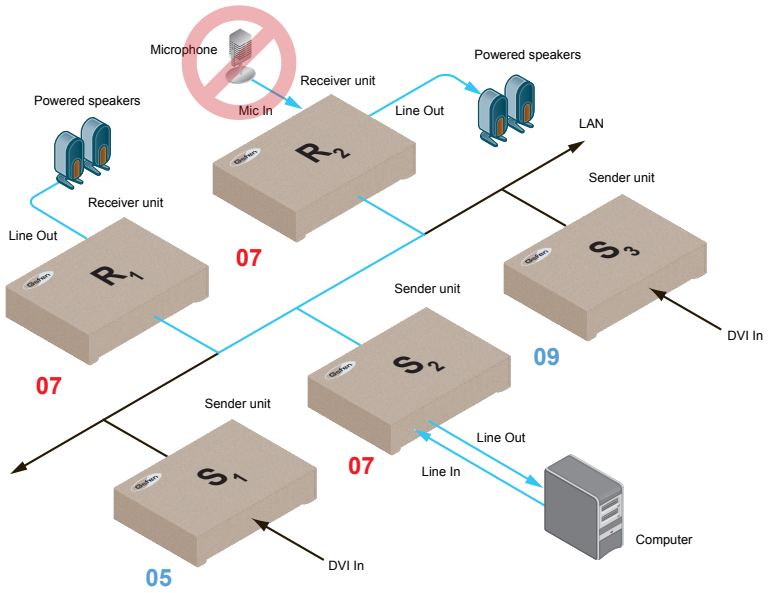


Figure 2.13 - The Mic In jack, on all Receiver units, is automatically disabled in multicast mode.



Using HDMI Sources

HDMI sources can be connected to the DVI KVM over IP when using HDMI-to-DVI adapters on the Sender and Receiver units. HDMI audio is passed through to the **DVI Out** port on the Receiver unit. However, the DVI KVM over IP will *not* pass content from HDCP sources such as Blu-ray players and Playstation® console systems.

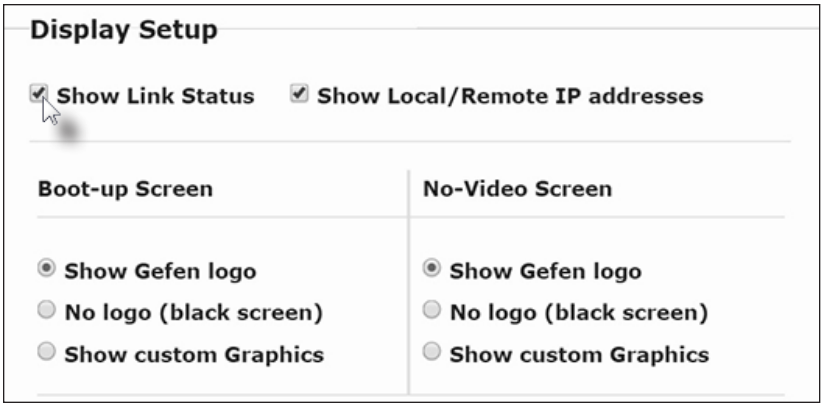
If a 3.5mm mini-stereo cable is connected to the Line In jack on the Sender unit, then the HDMI audio will be disabled on the Receiver unit. The **Line Out** jack, on the Receiver unit, will output audio from the source connected to the **Line In** jack on the Sender unit.

HDMI audio cannot be output using the **Line Out** jack on the Receiver unit.

The **Display Setup** group of the built-in web interface allows customizing of what is displayed on the screen during boot-up and when no video is being displayed. Status messages can also be hidden or displayed.

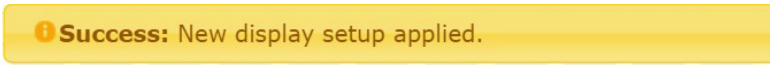
Show/Hide Link Status

1. Access the Web interface for the Receiver unit.
2. Login as “Administrator”.
3. Click the **Functions** tab.
4. Locate the **Show Link Status** checkbox, under the **Display Setup** group. By default, this checkbox is enabled.



- ► When enabled (checked), the link status will be displayed.
- ► When disabled (unchecked), the link status will be hidden.

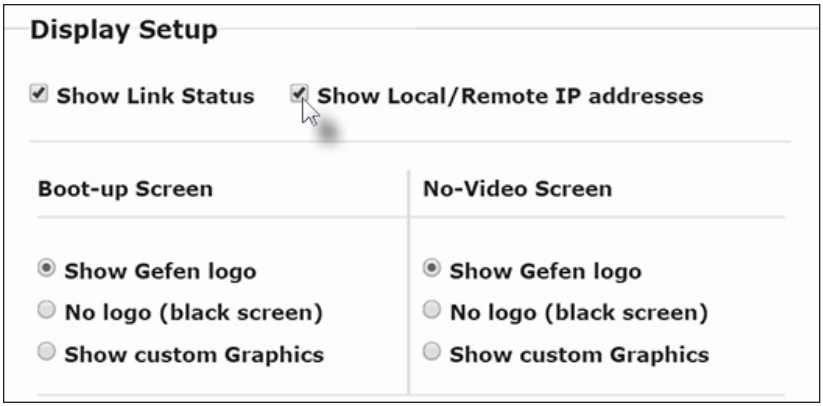
5. Click the **Save** button under the **Display Setup** group, to save changes.
6. The “Loading...” message box will be displayed.
7. After the new changes have been saved, the following message will be displayed, at the top of the page:



8. Click the **Reboot** button at the bottom of the page.
9. The “Rebooting...” message will be displayed.
10. After the Receiver unit reboots the new changes will be applied.

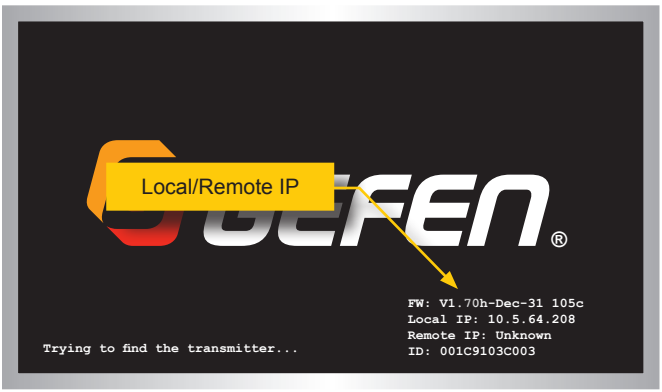
Show/Hide IP Addresses

1. Access the Web interface for the Receiver unit.
2. Login as “Administrator”.
3. Click the **Functions** tab.
4. Locate the **Show Local/Remote IP Addresses** checkbox, under the **Display Setup** group. By default, this checkbox is enabled.

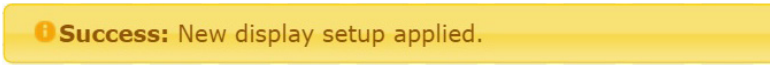


► When enabled (checked), the local and remote IP addresses, in addition to the firmware version and hardware ID, will be displayed.

► When disabled (unchecked), this information will be hidden.



5. Click the **Save** button under the **Display Setup** group, to save changes.
6. The “Loading...” message box will be displayed.
7. After the new changes have been saved, the following message will be displayed at the top of the page:

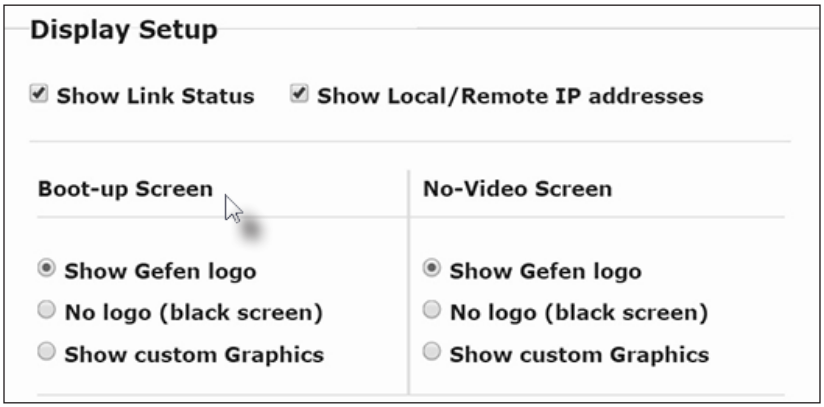


8. Click the **Reboot** button at the bottom of the page.
9. The “Rebooting...” message will be displayed.
10. After the Receiver unit reboots the new changes will be applied.

Boot-up Screen Options

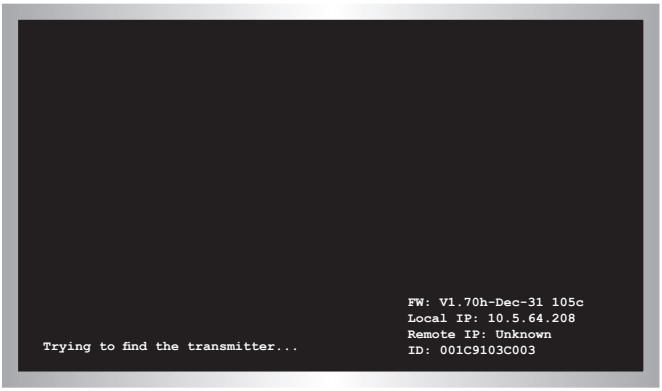
By default, when the Receiver unit is booting, the Gefen logo will be displayed on a black background. This can be changed to display only a black screen or a custom graphic.

1. Access the Web interface for the Receiver unit.
2. Login as “Administrator”.
3. Click the **Functions** tab.
4. Locate the **Boot-up Screen** section, under the **Display Setup** group. There are three options:



► Show Gefen logo (this is the default setting)

► No logo (solid black background)



► Show custom Graphics

When selecting a graphic file, the following requirements must be met:

a. Image must be in .bmp format.

b. Color depth must be 16-bit or 32-bit. 24-bit files are not supported.

c. The filesize must not exceed 131072 bytes (128 kB).

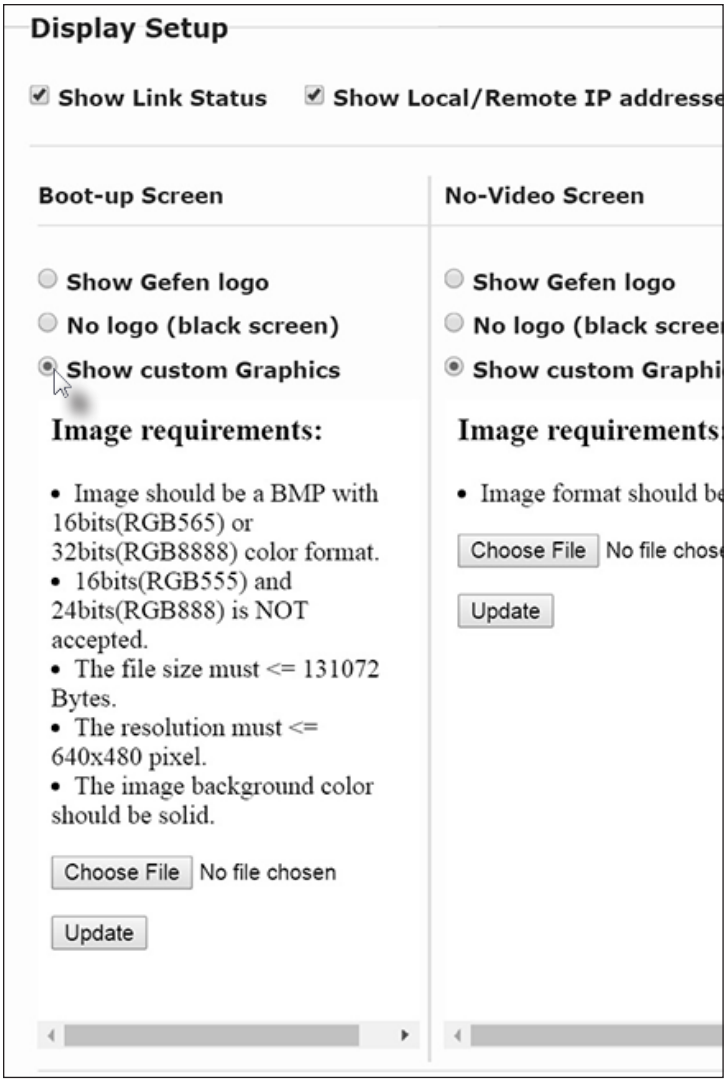
d. Resolution must not be greater than 640 x 480.

e. The background color must be solid.

To upload a graphics file to the Receiver unit, follow these instructions:

i. Click the **Show custom Graphics** radio button, under the **Boot-up Screen** section.

ii. Note the information displayed under the **Image requirements** section.



iii. Click the **Browse...** button to open the **File Upload** dialog box and select the desired graphics file.

iv. Once the graphics file is selected, click the **Open** button on the **File Upload** dialog box.

v. Click the Update button under the **Image requirements** section.

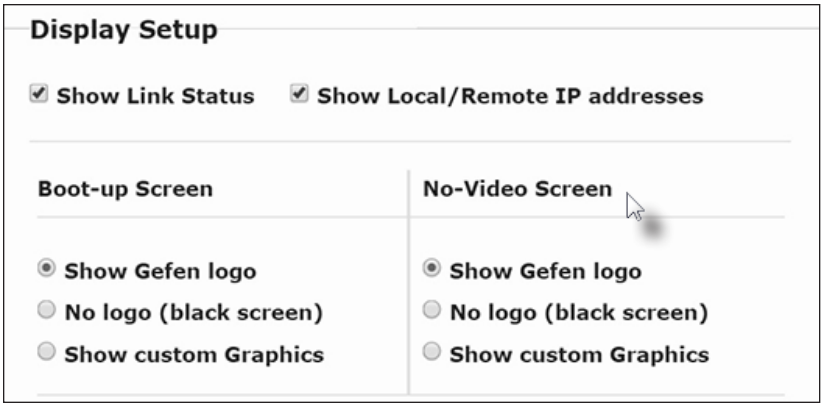
5. Click the **Save** button to save the changes.

6. Click the **Reboot** button. The new **Boot-up Screen** selection will be used during the boot-up sequence.

No-Video Screen Options

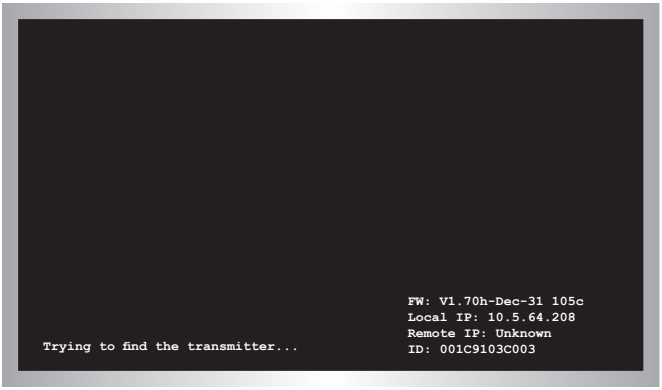
By default, when no video is being passed from the Sender unit to the Receiver unit, the Gefen logo will be displayed on a black background. This can be changed to display only a black screen or a custom graphic.

1. Access the Web interface for the Receiver unit.
2. Login as “Administrator”.
3. Click the **Functions** tab.
4. Locate the **No-Video Screen** section, under the **Display Setup** group. There are three options:



► Show Gefen logo (this is the default setting)

► No logo (solid black background)



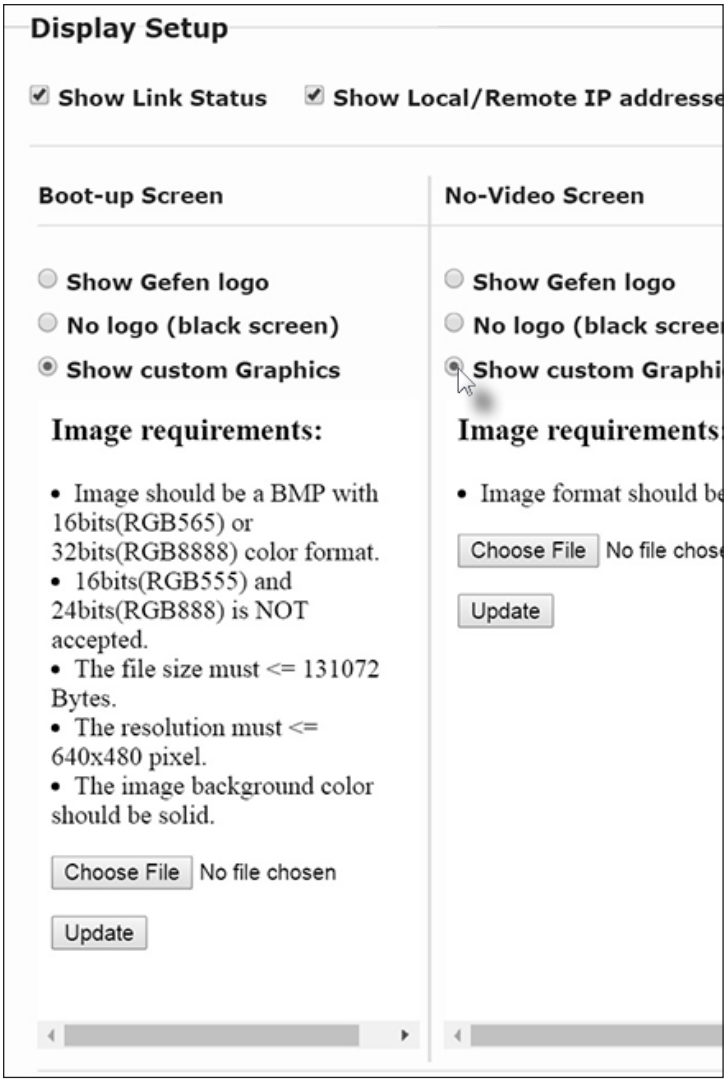
► Show custom Graphics

When selecting a graphic file, the image must be in .JPG format.

To upload a graphics file to the Receiver unit, follow these instructions:

i. Click the **Show custom Graphics** radio button, under the **No-Video Screen** section.

ii. Note the information displayed under the **Image requirements** section.



iii. Click the **Browse...** button to open the **File Upload** dialog box and select the desired graphics file. Images are not scaled and will be stretched or compressed to fit the output resolution of the display.

iv. Once the graphics file is selected, click the **Open** button on the **File Upload** dialog box.

v. Click the Update button under the **Image requirements** section.

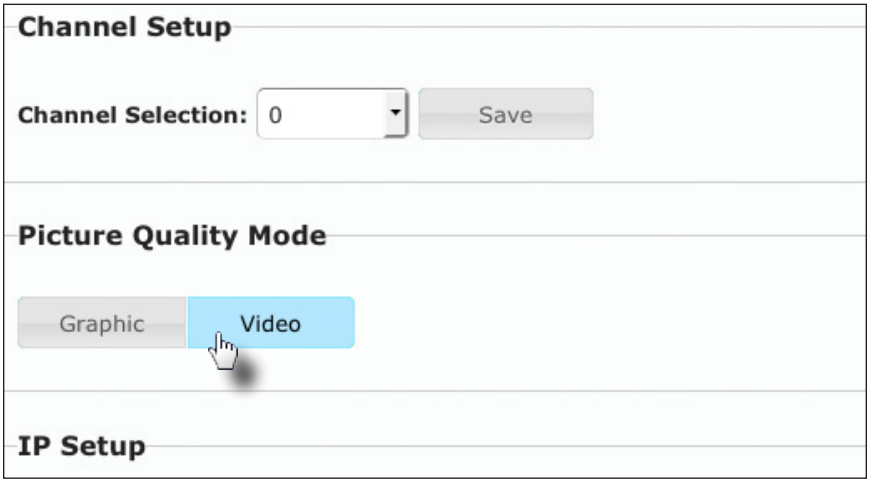
5. Click the **Save** button to save the changes.

6. Click the **Reboot** button. The new **No-Video Screen** selection will be used when no video source is being passed from the Sender to the Receiver unit.

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, Low, Med, High, and Video mode. The Web interface will allow you to select either Graphic or Video modes.

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”.



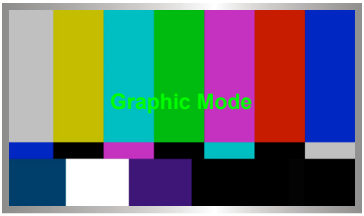
► **Video Mode**

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

► **Graphic Mode**

If the DVI 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.

Using the Front Panel

1. Press and hold the **Mode** button on the front panel of the Sender unit for three seconds to toggle between **Graphic Mode** and **Video Mode**.

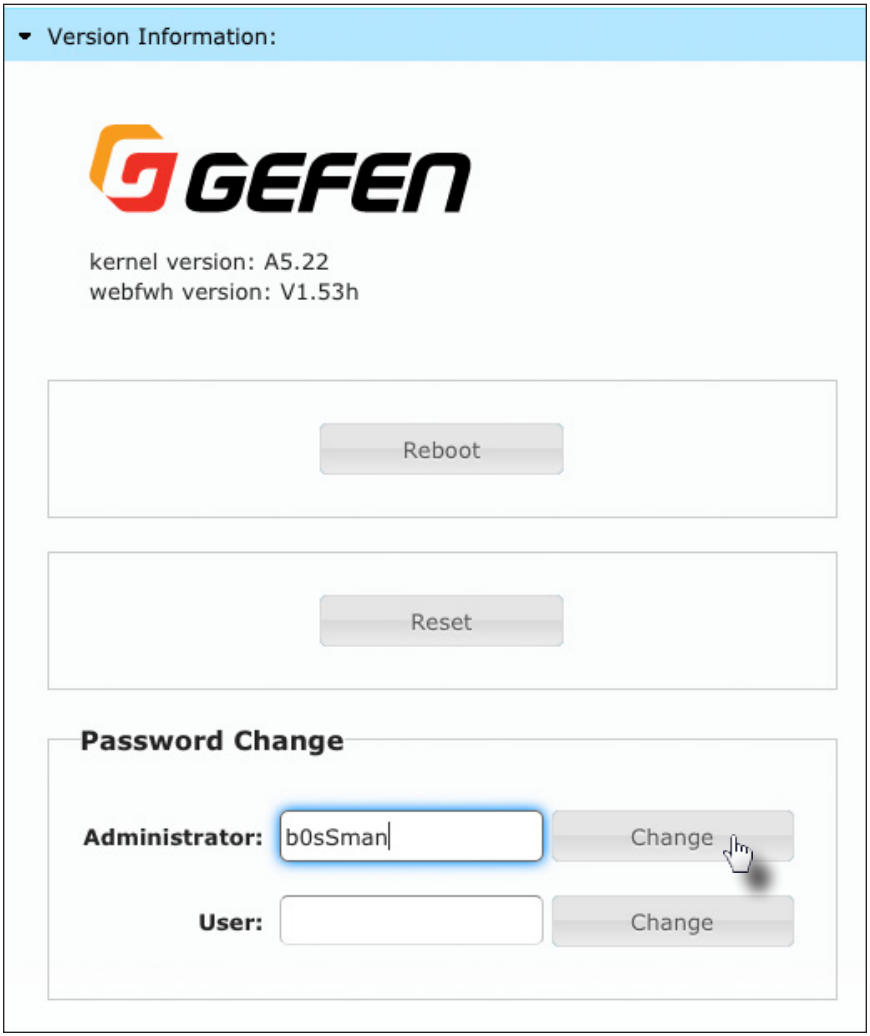
► **Graphic Mode**
If the source video signal is a static image, then use **Graphic Mode**.

► **Video Mode**
If the source is motion-video, then use **Video Mode**.

2. The selected mode will be displayed on the screen, as shown at the top of the page.

Changing the Password

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.



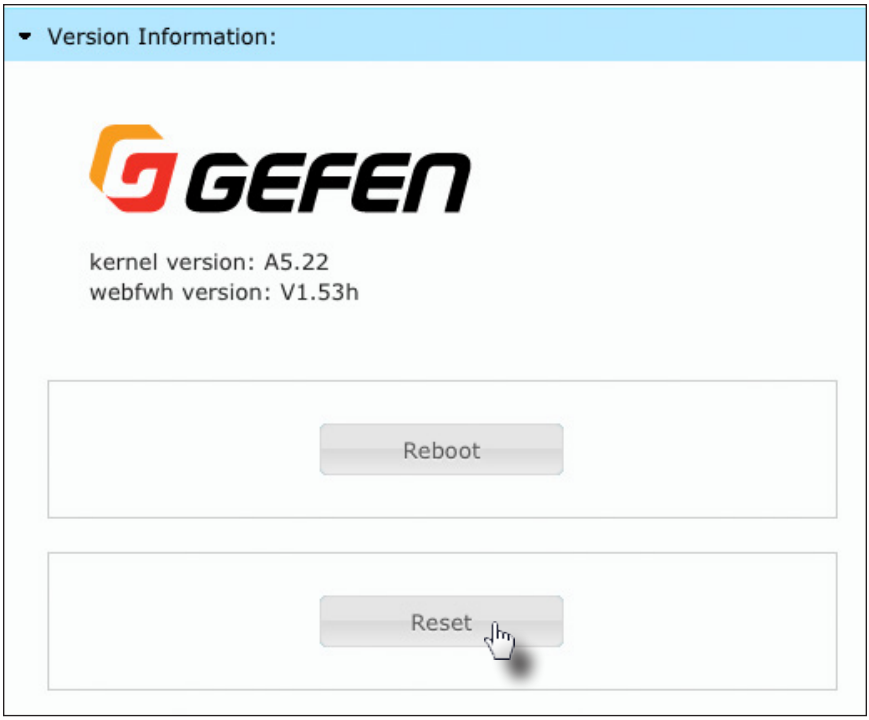
The DVI KVM over IP can be reset using the Web interface or using the buttons on the front panel. When using the Web interface, the Sender / Receiver units will automatically be reset to *Auto IP* mode. When using the front-panel buttons, the Sender / Receiver can be reset to either *Auto IP* or *Static IP* mode.

Reset using the Web Interface

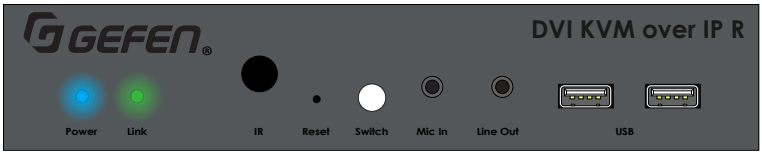
Information

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 & Configuration (page 6).

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 **Reset** button.



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



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

7. Repeat the process for each unit.

Reset using the Front Panel

1. Disconnect the power from the Sender / Receiver unit. It does not matter which unit is reset first. When the DVI KVM over IP is reset, it can be set to either *Auto IP* or *Static IP* mode.

2. Use one of the following options to reset the unit to the desired mode.

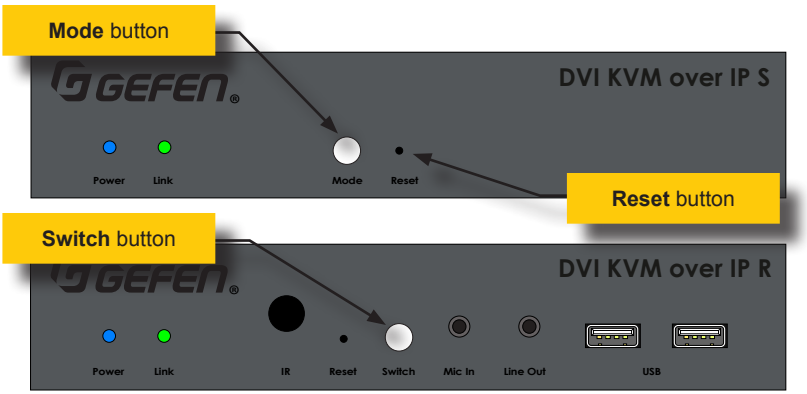
   ► Factory reset with *Auto IP mode*:

   1. If resetting the Sender unit, press and hold the **Mode** button. If resetting the Receiver unit, press and hold the **Switch** button.
   2. Reconnect the power to the unit you are resetting.
   3. Hold the **Mode** / **Switch** button until both Power and Link LED indicators begin to flash.
   4. Release the Mode / Switch button.

   ► Factory reset with *Static IP mode*:

   1. If resetting the Sender unit, press and hold the **Mode** button. If resetting the Receiver unit, press and hold the **Switch** button.
   2. Reconnect the power to the unit you are resetting.
   3. Hold the **Mode** / **Switch** button until the **Power** LED indicator begin to flash.
   4. Release the **Mode** / **Switch** button.
   5. After a few moments, the Link LED indicator will also begin to flash.

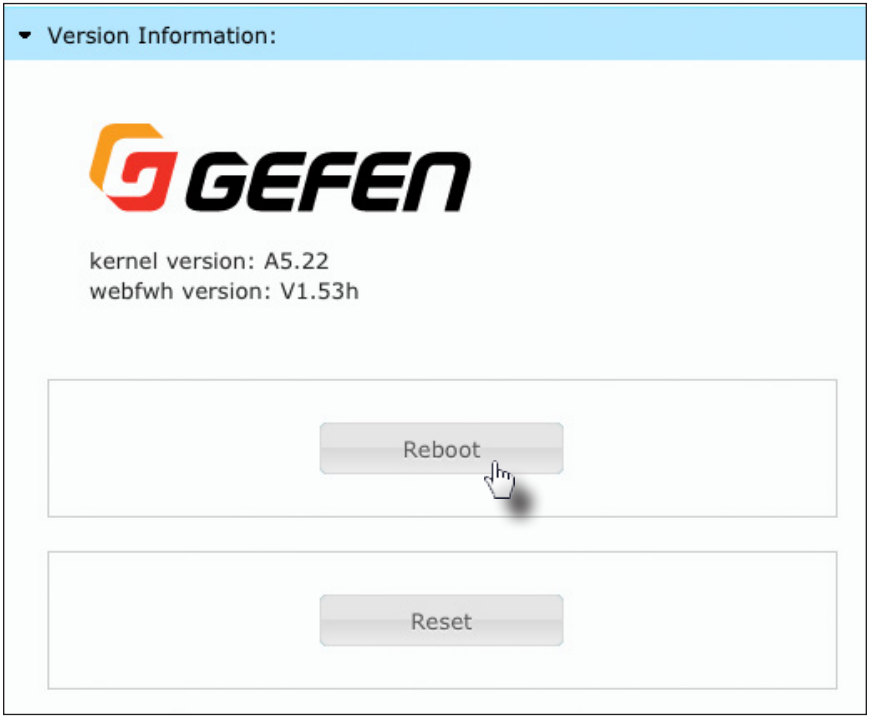
3. Press the **Reset** button using the end of a paper clip or other sharp pointed object.



The DVI KVM over IP Sender or Receiver unit 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.

Reboot using the Web Interface

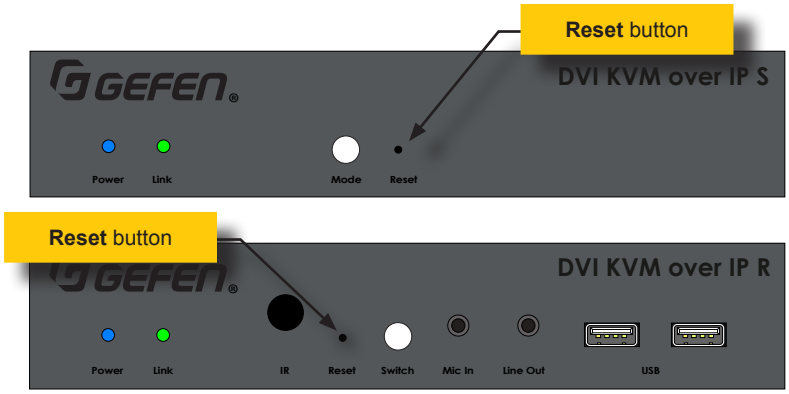
1. Access the Web interface for the Sender / Receiver unit.
2. Login as “Administrator”.
3. Click the **System** tab.
4. Click the **Reboot** button.



5. After a few moments, the **Power** LED indicator will flash.
6. Several seconds later, the **Power** LED indicator will glow solid blue and the **Link** LED indicator will begin to flash.
7. 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.



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DVI KVM over IP

3 Advanced Operation

Information

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.

Command	Description
#factory_reset	Resets the unit to factory-default settings
#get_block	Displays the current video blocking state
#get_description	Displays the description of the Sender / Receiver unit
#get_discovery	Displays the current state of the discovery service
#get_edid_copy	Displays the EDID copy state (Rx only)
#get_firmware_version	Displays the firmware version
#get_gateway	Displays the gateway IP address
#get_hardware_version	Displays the hardware version
#get_ip_address	Displays the IP address
#get_ip_mode	Displays the IP mode
#get_ipconfig	Displays the IP configuration information
#get_jumbo_mtu	Displays the current MTU setting
#get_mask	Displays the current video mask state
#get_net_mode	Displays the network casting mode
#get_netmask	Displays the netmask address
#get_pq_mode	Displays the picture quality mode (Tx only)
#get_product_name	Displays the name of the product
#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_rx_channel	Displays the channel of the Receiver unit (Rx only)
#get_rx_id	Displays the ID of the Receiver unit
#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
#get_telnet_access	Displays the Telnet access state
#get_telnet_pass	Displays the Telnet password state
#get_telnet_port	Displays the Telnet listening port
#get_telnet_welcome	Displays the Telnet welcome message
#get_tx_channel	Displays the video channel (Tx only)
#get_udp_access	Displays the UDP access state
#get_udp_port	Displays the UDP listening port
#get_usb_allow	Displays the USB-over-IP state
#get_usb_mode	Displays the USB operating mode

Command	Description
#get_usb_mouse	Displays the mouse operating mode
#get_video_allow	Displays the Video-over-IP state
#get_web_port	Displays the HTTP listening port
#help	Displays a list of available commands
#reboot	Reboots the unit
#set_block	Enables or disables video blocking
#set_description	Sets the description of the Sender / Receiver unit
#set_discovery	Enables or disables the discovery service
#set_edid_copy	Enables or disables EDID copy (Rx only)
#set_gateway	Sets the gateway address
#set_ip_address	Sets the IP address
#set_ip_mode	Sets the IP mode
#set_jumbo_mtu	Sets the MTU mode
#set_mask	Enables or disables video masking
#set_net_mode	Sets the network casting mode
#set_netmask	Sets the netmask address
#set_pq_mode	Sets the picture quality mode (Tx only)
#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_rx_id	Sets the ID of the Receiver unit (Rx only)
#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
#set_showme	Enables or disables the “show me” feature
#set_telnet_access	Enables or disables Telnet access
#set_telnet_pass	Sets the Telnet password
#set_telnet_port	Sets the Telnet listening port
#set_telnet_welcome	Sets the Telnet welcome message
#set_tx_channel	Sets the video channel (Tx only)
#set_udp_access	Enables or disables UDP access
#set_udp_port	Sets the UDP listening port
#set_usb_allow	Enables or disables USB-over-IP
#set_usb_mode	Sets the USB operating mode

Command	Description
#set_usb_mouse	Sets the mouse operating mode
#set_video_allow	Enables or disables Video-over-IP
#set_web_port	Sets the HTTP listening port
#set_webui_ad_pass	Sets the Administrator password for the Web UI
#set_webui_user_pass	Sets the User password for the Web UI
#use_telnet_login	Enable or disables Telnet login credentials
#use_telnet_welcome	Enables or disables the Telnet welcome message
r	Routes an input to a Receiver unit (Rx only)

Important

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

#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

#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_description

Displays the description of the Sender / Receiver unit.

Syntax

```
#get_description
```

Parameters

None

Example

```
#get_description
EXT-DVIKVM-LAN-S
```

Related Commands

#get_product_name
#set_description

#get_discovery

Displays the current discovery mode setting.

Syntax

```
#get_discovery
```

Parameters

```
None
```

Example

```
#get_discovery
DISCOVERY SERVICE IS ENABLED
```

Related Commands

#set_discovery
#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 V1.70d
```

Related Commands

#get_hardware_version

#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_hardware_version

Displays the hardware version of the Sender / Receiver unit.

Syntax

```
#get_hardware_version
```

Parameters

None

Example

```
#get_hardware_version
HARDWARE VERSION IS ast1510hv1
```

Related Commands

#get_firmware_version

#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
BROADCAST: 10.5.64.255
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_jumbo_mtu

Displays the current MTU (Maximum Transmission Unit) setting. The default setting is *enabled*.

Syntax

```
#get_jumbo_mtu
```

Parameters

```
None
```

Example

```
#get_jumbo_mtu
JUMBO MTU is ENABLE
```

Related Commands

#set_jumbo_mtu

#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 CASTING MODE IS UNICAST
```

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_product_name

Displays the product name of the Sender / Receiver unit.

Syntax

```
#get_product_name
```

Parameters

None

Example

```
#get_product_name
PRODUCT NAME IS EXT-DVIKVM-LAN-S
```

Related Commands

#get_description

#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_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_pass
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
#use_telnet_login
#use_telnet_welcome

#get_telnet_pass

Displays the Telnet password state. Use the #set_telnet_pass command to enable or disable password credentials during a Telnet session.

Syntax

```
#get_telnet_pass
```

Parameters

```
None
```

Example

```
#get_telnet_pass
TELNET INTERFACE PASSWORD IS DISABLED
```

Related Commands

#get_telnet_access
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
#use_telnet_login
#use_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_pass
#get_telnet_welcome
#set_telnet_access
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
#use_telnet_login
#use_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 IS ---- Welcome to the Gefen Telnet Server -----
```

Related Commands

#get_telnet_access
#get_telnet_pass
#get_telnet_port
#set_telnet_access
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
#use_telnet_login
#use_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
```

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 COMMUNICATION PORT: 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 ON LINK
```

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
```

Related Commands

#get_usb_allow
#get_usb_mode
#set_usb_allow
#set_usb_mode
#set_usb_mouse

#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_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

#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

#FACTORY_RESET
#GET_DISCOVERY
#GET_FIRMWARE_VERSION
#GET_GATEWAY
#GET_HDCP
#GET_IPCONFIG
#GET_IP_ADDRESS
#GET_IP_MODE
...
...
#SET_TELNET_ACCESS
#SET_TELNET_PASS
#SET_TELNET_PORT
#SET_TELNET_WELCOME
#SET_TX_CHANNEL
#SET_UDP_ACCESS
#SET_UDP_PORT
#SET_USB_ALLOW
#SET_USB_MODE
#SET_USB_MOUSE
#SET_VIDEO_ALLOW
#SET_WEBUI_AD_PASS
#SET_WEBUI_USER_PASS
#SET_WEB_PORT
#USE_TELNET_LOGIN
#USE_TELNET_WELCOME
```

#reboot

Reboots the Sender / Receiver unit.

Syntax

```
#reboot
```

Parameters

```
None
```

Example

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

Related Commands

#factory_reset

#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_description

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_description
#get_product_name

#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

#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.

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.

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_ip_address

Sets the IP address. *param1* must be specified using dot-decimal notation.

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.

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_jumbo_mtu

Enables or disables jumbo MTU (Maximum Transmission Unit) mode. When enabled, the MTU size is set to 8000 (8K jumbo frames).

Syntax

```
#set_jumbo_mtu param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled (MTU = 1500)
1	Enabled (MTU = 8000)

Example

```
#set_jumbo_mtu 1
JUMBO MTU SET TO ENABLED
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

`#get_jumbo_mtu`

#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.

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.

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
```

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.

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.

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 10

RX ID SET TO 10
```

Related Commands

#get_rx_id

#set_serial_allow

Enables or disables serial over IP.

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
```

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.

Syntax

```
#set_serial_baud param1
```

Parameters

`param1` Integer [0 ... 11]

param1	Description (baud rate)
0	300
1	600
2	1200
3	2400
4	4800
5	9600
6	14400
7	19200
8	38400
9	57600
10	115200
11	230400

Example

```
#set_serial_baud 7
SERIAL BAUD RATE SET TO 19200
```

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.

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
```

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 setting for the serial port.

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
```

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.

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
```

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.

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
```

Related Commands

#get_telnet_access
#get_telnet_pass
#get_telnet_port
#get_telnet_welcome
#set_telnet_pass
#set_telnet_port
#set_telnet_welcome
#use_telnet_login
#use_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`.

Syntax

```
#set_telnet_pass param1
```

Parameters

`param1`	String

Example

```
#set_telnet_pass b055man
TELNET INTERFACE PASSWORD IS SET
```

Related Commands

#get_telnet_access
#get_telnet_pass
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_port
#set_telnet_welcome
#use_telnet_login
#use_telnet_welcome

#set_telnet_port

Sets the Telnet listening port.

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_pass
#set_telnet_welcome
#use_telnet_login
#use_telnet_welcome

#set_telnet_welcome

Sets the Telnet welcome message. The welcome message cannot exceed eight characters in length.

Syntax

```
#set_telnet_welcome param1
```

Parameters

param1	String

Example

```
#set_telnet_welcome Welcome!
TELNET WELCOME MESSAGE SET TO Welcome!
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
#use_telnet_login
#use_telnet_welcome

#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
PLEASE REBOOT THE UNIT TO APPLY CHANGES
```

Related Commands

#get_tx_channel
#get_rx_channel
r

#set_udp_access

Enables or disables UDP access.

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
```

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.

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.

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
```

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.

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
```

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.

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
```

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.

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
```

Related Commands

`#get_video_allow`

#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`

#use_telnet_login

Enables or disables Telnet login credentials.

Syntax

```
#use_telnet_login param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#use_telnet_login 1
Password for 'root' changed
Password for 'Administrator' changed
Password for 'User' changed
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
#use_telnet_welcome

#use_telnet_welcome

Enables or disables the Telnet welcome message.

Syntax

```
#use_telnet_welcome param1
```

Parameters

`param1` Integer [0 ... 1]

param1	Description
0	Disabled
1	Enabled

Example

```
#use_telnet_welcome 1
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_pass
#set_telnet_port
#set_telnet_welcome
#use_telnet_login

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

#get_rx_channel
#set_tx_channel

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DVI KVM over IP

4 Appendix

Channel Setup	
Channel Selection	0

Picture	
Picture Quality Mode	Video

IP Setup	
MAC Address	Device-dependent (cannot be modified)
IP Address	Auto IP mode: Sender = 169.254.x.x Receiver = 169.254.x.x Static IP mode: Sender = 192.168.1.72 Receiver = 192.168.1.73 DHCP mode: Determined by DHCP server
Subnet Mask	255.255.255.0
Default Gateway	Auto IP mode: 169.254.x.x Static IP mode: 192.168.1.1 DHCP mode: Determined by DHCP server
HTTP Port	80
TCP / Telnet Port	23
Enable Telnet / TCP Access	Enabled
UDP Port	50007
Enable UDP Access	Disabled
Remote UDP IP Address	192.168.1.255
Remote UDP Port	50008
Enable Remote UDP Access	Disabled
Gefen Syner-G Discovery	Enabled
Find Your Device	Hide Me
MTU Size	8000

(continued on next page)

Network	
Network Mode	Unicast

EDID Management	
Enable Video over IP	Enabled
Copy EDID of Connected Display (Receiver unit only)	Enabled

Display Setup	
Show Link Status	Enabled
Show Local/Remote IP Addresses	Enabled
Boot-up Screen	Show Gefen Logo
No-Video Screen	Show Gefen Logo

USB over IP	
Enable USB over IP	Enabled
Operation Mode	Active per request
USB Mouse Mode	High Resolution

Serial over IP	
Enable Serial over IP	Enabled
Baud rate	19200
Data bits	8
Parity	None
Stop bits	1

The following items are required to upgrade the firmware:

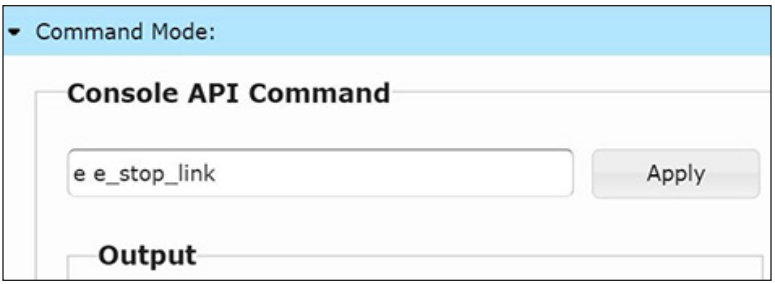
- Gefen DVI KVM over IP
- Computer (Mac or PC)
- Firmware files

1. Download the firmware for the DVI KVM over IP from the Gefen Web site.
2. Extract both firmware files from the .ZIP file. The .ZIP file contains two files:
   - ► `DVIKVM-LAN-S_[version].bin` (Sender unit)
   - ► `DVIKVM-LAN-R_[version].bin` (Receiver unit)
3. Access the Web interface by entering the IP address of the Sender or Receiver unit. The order in which the Sender and Receiver units are upgraded does not matter.

Important

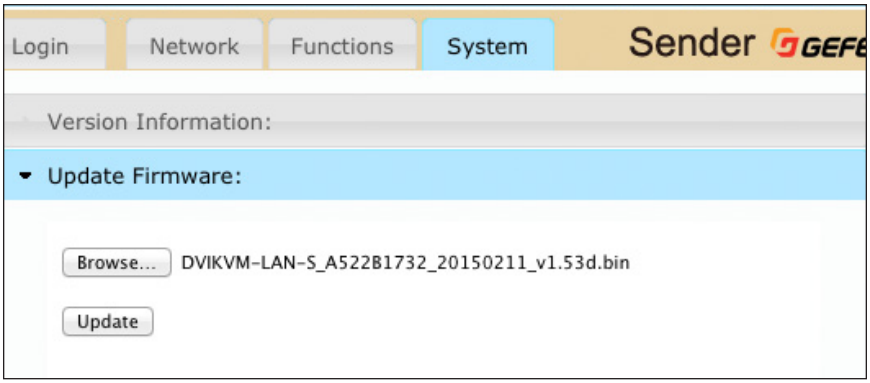
Before performing a firmware upgrade, active links between Sender and Receiver units must be temporarily suspended.

4. Click the **System** tab.
5. Enter the following command under the **Command Mode** tab:



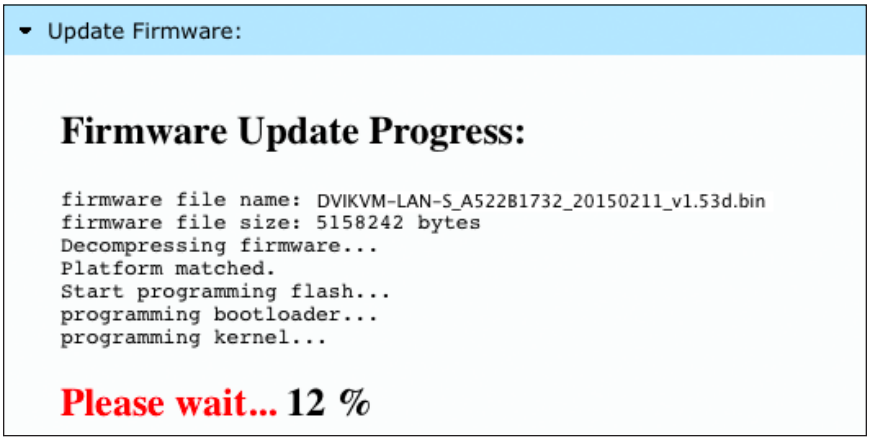
6. Press the **Apply** button.
7. Under the **System** tab, click the **Update Firmware** tab.
8. Click the **Browse...** button and select the firmware for the unit that is being upgraded: If upgrading the Sender unit, the filename will contain the letter “S”. If upgrading the Receiver unit, the filename will contain the letter “R”.

   In the following example, the Sender unit is being updated. Therefore, the filename that contains the letter “S” must be used.



9. Click the **Update** button.

10. After a few moments, the Web interface will indicate that the upgrade process has been started.



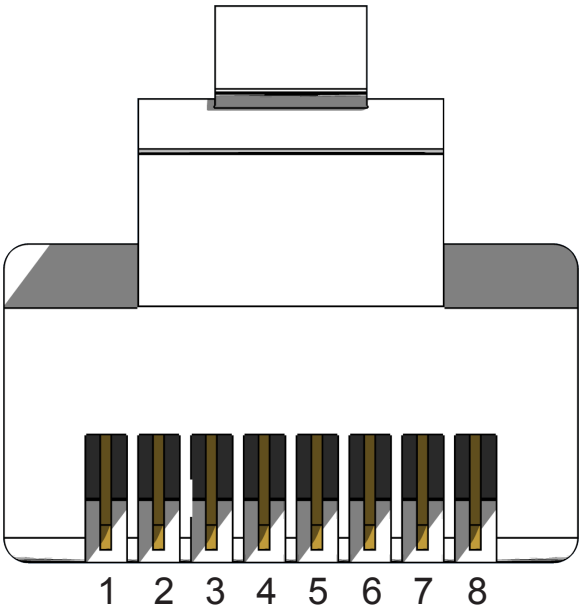
11. Once the firmware upgrade process has completed, the DVI KVM over IP will reboot.

    Linking will automatically be restored upon reboot. The following command can also be used to manually restore the link after the `e e_stop_link` has been issued:

    ```
    e e_reconnect
    ```

12. Repeat the process for each Sender and Receiver unit in the system.

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

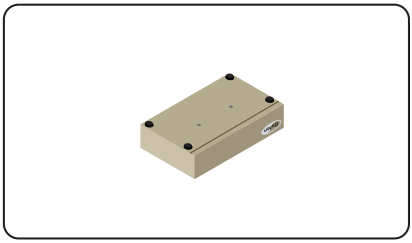
Information

Shielded CAT-5e (or better) cabling is recommended.

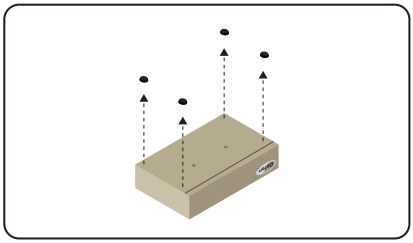
Rack Tray Installation

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).

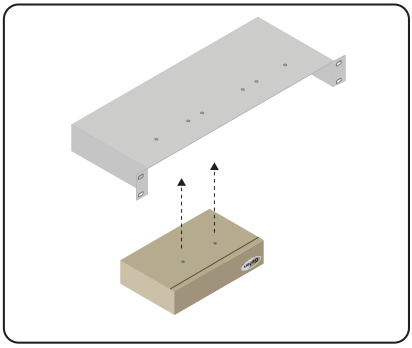
Step 1 Turn unit upside down.



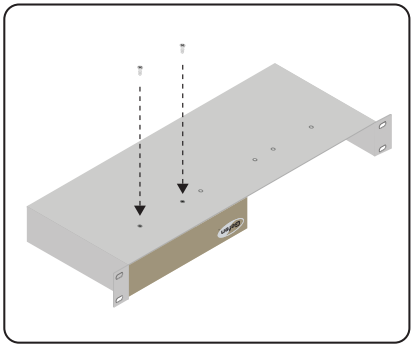
Step 2 Remove rubber feet.



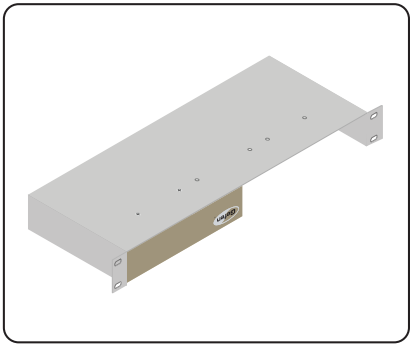
Step 3 Line up holes on unit and rack tray.



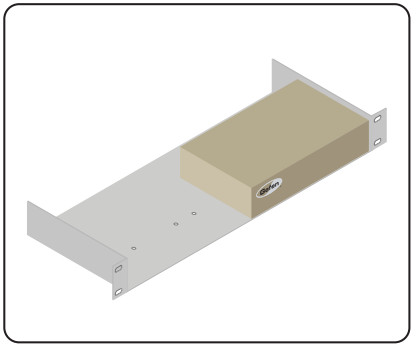
Step 4 Install countersink screws .



Step 5 Ensure the unit is installed securely.



Step 6 Unit has been installed into rack tray.



Supported Formats	
Resolutions (max.)	• 1080p Full HD • 1920 x 1200 (WUXGA)

Connectors, Controls, and Indicators	
Video Input (Sender)	• 1 x DVI 29-pin, female, locking
Video Output (Receiver)	• 1 x DVI 29-pin, female, locking
Audio (Sender)	• 1 x 3.5mm mini-stereo (Line In) • 1 x 3.5mm mini-stereo (Line Out)
Audio (Receiver)	• 1 x 3.5mm mini-stereo (Line Out) • 1 x 3.5mm mini-stereo (Mic In)
USB (Sender)	• 1 x Type B, female
USB (Receiver)	• 2 x Type A, female
Ethernet (Sender)	• 1 x RJ-45
Ethernet (Receiver)	• 3 x RJ-45, shielded
IR Emitter (Sender)	• 1 x 3.5mm mini-mono jack
IR Ext. (Receiver)	• 1 x 3.5mm mini-stereo jack
RS-232 (Sender)	• 1 x DB-9, female
RS-232 (Receiver)	• 1 x DB-9, male
Reset button (Sender)	• 1 x Push button, tact-type
Mode button (Sender)	• 1 x Push button, tact-type
Switch button (Receiver)	• 1 x Push button, tact-type
Link indicator (Sender / Receiver)	• 1 x LED, green
Power indicator (Sender / Receiver)	• 1 x LED, blue

Operational	
Maximum Pixel Clock	• 165 MHz
Power	• 5V DC
Power consumption	• 10W ea. (max.)

Physical	
Dimensions (W x H x D)	• 8.4” x 1.7” x 4.5” (213mm x 43mm x 113mm)
Unit Weight	• 2.0 lbs. (0.91 kg)

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Warranty Information *iii*

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