



## ***VGA Broadcaster Install Guide***



VGA Broadcaster Standard



VGA Broadcaster Lite

[www.epiphan.com](http://www.epiphan.com)

Firmware Version 3.7.7

## **Thank you for choosing Epiphan!**

At Epiphan, product function and quality are our top priority. We make every effort to make sure that our products exceed our customers expectations. We regularly contact our customers to ensure product performance and reliability. We strive to continually enhance our products to accommodate your needs.

## **Specifications**

You can go to the [Broadcasting](#) page of the Epiphan website to get information about the VGA Broadcaster.

## **Warranty**

All Epiphan Systems products are provided with a 100% replacement warranty for one year from the date of purchase. We welcome your feedback and suggestions for product improvements. You can email your comments to [info@epiphan.com](mailto:info@epiphan.com).

## **Technical Support**

Epiphan is staffed by a professional support team. If, after checking the FAQs for your product on the Epiphan website and re-installing the Epiphan driver software, you continue to have outstanding issues, email a problem report to [support@epiphan.com](mailto:support@epiphan.com). To help us solve the problem efficiently, include the following info:

- Your VGA Broadcaster serial number.
- The behavior of your VGA Broadcaster LED indicators.
- Technical description of the VGA signal source including resolution, refresh rate, synchronization, type of hardware.
- Complete description of the problem.

## **Environmental Information**

The equipment that you bought has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems. Those systems will reuse or recycle most of the materials of your end life equipment in a sound way.

The crossed-out wheeled bin symbol invites you to use those systems.

If you need more information about collection, reuse and recycling systems, please contact your local or regional waste administration.

You can also contact us for more information on the environmental performance of our products.

# 1. Installation and Getting Started

This section describes the basics of how to connect a VGA Broadcaster device to a VGA or DVI source and to an Ethernet network. This section also describes how to install and use the Epiphan Network Discovery Utility to find VGA Broadcaster devices on the network and how viewers connect to view the broadcast.

The VGA Broadcaster device uses an Ethernet network connection to present visual information to viewers. Participants can connect to the IP address of the VGA Broadcaster to view the broadcast.

This chapter contains the following sections:

- [VGA Broadcaster Hardware Features](#)
- [VGA Broadcaster Software Features](#)
- [Connect and Power on a VGA Broadcaster Lite Device](#)
- [Connect and Power on a VGA Broadcaster Standard Device](#)
- [Using the Network Discovery Utility to Find the IP Address of the VGA Broadcaster Device](#)
- [Viewing the Broadcast](#)
- [Enabling Access to the Broadcast from the Internet](#)
- [Connecting a VGA Broadcaster device to a wireless network](#)

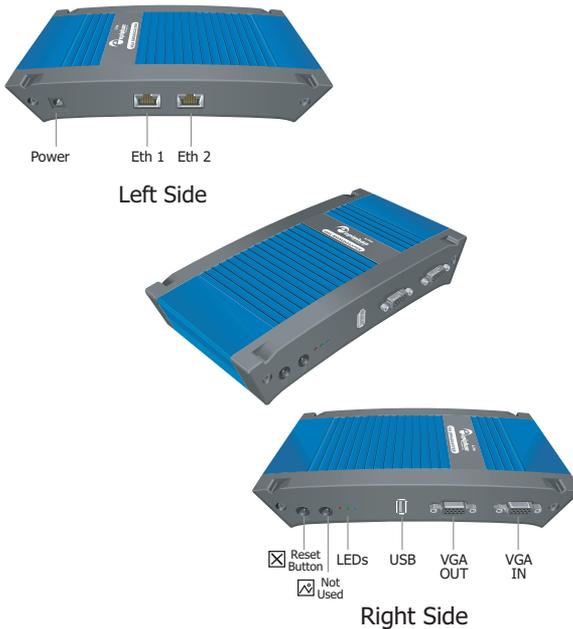
# VGA Broadcaster Hardware Features

This section provides an overview of VGA Broadcaster Lite and Standard hardware features.

## VGA Broadcaster Lite Hardware Features

The VGA Broadcaster device includes the following hardware features.

**Figure 1: VGA Broadcaster Lite connectors and LEDs**



<b>Power</b>	Connect the AC adapter to the VGA Broadcaster Lite power connector and to a power outlet.
<b>ETH 1</b>	Primary 10/100/1000 Base-T RJ-45 auto-sensing Ethernet network port to connect the VGA Broadcaster Lite device to an Ethernet network. The VGA Broadcaster Lite device ethernet ports are auto-sensing.

<b>ETH 2</b>	Not used.
<b>VGA IN</b>	To connect a VESA-compatible VGA source to the VGA Broadcaster device. See the <a href="#">VGA Broadcaster Lite technical specifications</a> for the list of RGB modes supported by VGA Broadcaster.
<b>VGA OUT</b>	Optionally connect a monitor. This is not a high-quality image. VGA OUT is intended only for checking the presence of the signal.
<b>USB ports</b>	One USB 2.0 (also supports USB 1.1).
<b>Reset Button</b>	<p>Reset the device to factory default settings. To use this button, disconnect power to the device, press and hold the Reset button as you reconnect the power. The blue LED lights up. Keep pressing the Reset button until the blue LED turns off and the Green LED lights up. Release the Reset button. The VGA Broadcaster Lite device starts normally but with all settings returned to factory defaults.</p> <p><b>Note:</b> You may have to re-configure the device's network settings to reconnect the device to your network. See "<a href="#">Changing the Network Configuration</a>" on page 39 for more information.</p>
<b>LED startup sequence</b>	<p>Green and blue LEDs. When the VGA Broadcaster Lite device first starts up, the blue LED lights up. A few seconds later the green LED lights up. After about another 20 seconds the blue LED turns off, leaving the green LED on indicating that the VGA Broadcaster Lite has started up and can start capturing images.</p> <p>During operation the blue LED blinks during VGA signal test operation and when the system tunes VGA parameters.</p>

<b>Red LED</b>	During operation the red LED blinks each time the VGA Broadcaster Lite captures an image. You can use the red LED as an indicator that the VGA Broadcaster Lite is capturing images.
----------------	--

### VGA Broadcaster Standard Hardware features

The VGA Broadcaster Standard device is a 254 mm x 148 mm x 71 mm (10.0" x 5.8" x 2.8") standalone small form factor unit or 4U rack-mount chassis. The front panel includes a USB connector, power and hard disk activity LEDs, power and reset buttons, and a standard 3.5 mm microphone port.

The back panel includes Ethernet, VGA in, 3.5 mm unbalanced stereo audio line in and power connectors.

**Figure 2: VGA Broadcaster Standard front panel**



## VGA Broadcaster Software Features

Use the following software features, common to all VGA Broadcaster models, to install the VGA Broadcaster device on the network.

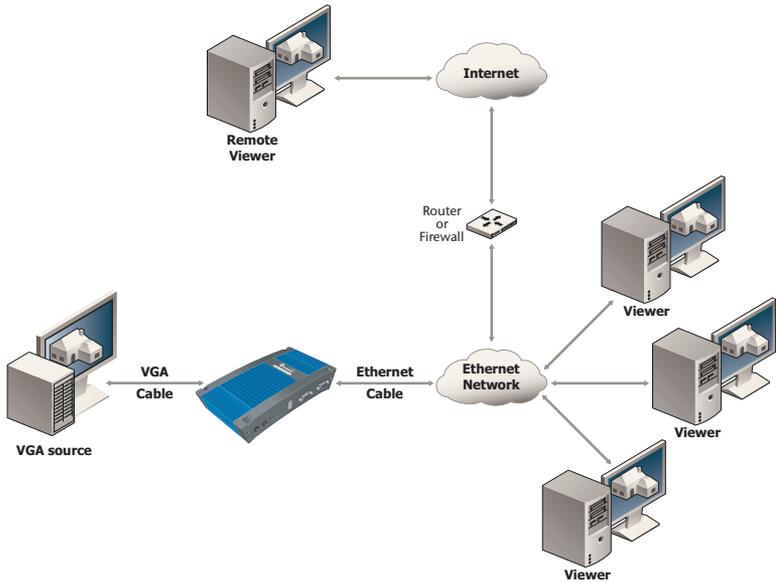
<b>Default IP address and network mask</b>	<p><b>IP:</b> 192.168.255.250</p> <p><b>Netmask:</b> 255.255.255.252</p> <p><b>User Name:</b> admin (no password)</p>
<b>IP address from a DHCP server</b>	<p>The VGA Broadcaster device can get an IP address on the network from a DHCP server if the network has one. If the device gets an IP address from a DHCP server, you can see the IP address by running the Epiphany Network Discovery Utility to find the VGA Broadcaster device on the network. See <a href="#">“Using the Network Discovery Utility to Find the IP Address of the VGA Broadcaster Device”</a> on page 13.</p> <p>If the network does not have a DHCP server, see the <a href="#">VGA Broadcaster User Guide</a>.</p>
<b>Web admin interface</b>	<p>Use the VGA Broadcaster Web admin interface for changing the VGA Broadcaster IP address, making Frame Grabber Adjustments, and installing new firmware. You can log into the Web admin interface by selecting <b>Web config</b> from the Network Discovery Utility or by opening a web browser and browsing to:</p> <p>http://&lt;VGA Broadcaster_IP_Address&gt;/ admin/</p> <p><b>User Name:</b> admin (no password)</p> <p>The Web admin interface is described in the <a href="#">VGA Broadcaster User Guide</a>.</p>

# Connect and Power on a VGA Broadcaster Lite Device

To connect a VGA Broadcaster Lite device you need:

- A VGA video source.
- An Ethernet connection between the VGA Broadcaster Lite device and a network.

**Figure 3: Connecting the VGA Broadcaster Lite device to an Ethernet network**



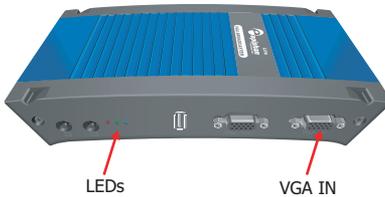
## To connect and turn on the VGA Broadcaster Lite device

- 1 Use a VGA cable to connect the VGA source to the VGA Broadcaster Lite VGA IN port.

You can use an active VGA splitter to split the VGA signal between a monitor and the VGA Broadcaster Lite device.

**Note:** Passive splitters reduce the quality of the VGA signal. Good quality active splitters, (available from Epiphan) do not usually affect signal quality. You should use a splitter with the highest available bandwidth.

**Figure 4: Connecting to a VGA source**



- 2 Use a RJ-45 Ethernet cable to connect the VGA Broadcaster Lite Eth 1 port to the 10/100/1000 Base-T Ethernet network.

For best performance, connect the VGA Broadcaster Lite device to a 1000 Base-T Ethernet.

The network must be running the TCP/IP protocol. Ideally the VGA Broadcaster Lite device should be able to connect to the Internet.

- 3 Connect the power adapter to the VGA Broadcaster Lite device.

**Figure 5: Connecting to the Ethernet network and connecting power**



The VGA Broadcaster Lite device powers on and the LEDs go through their power on sequence:

- When power is first connected the blue LED lights up.
- A few seconds later the green LED lights up.
- After about 20 seconds the blue LED turns off, leaving the green LED on to indicate that device has started up and can start capturing images.

#### **4 Start up the VGA source.**

The Red LED should start flashing indicating that the VGA Broadcaster Lite device is receiving images.

To confirm that the VGA Broadcaster Lite is receiving images from the VGA source:

- Check to see if the VGA Broadcaster Lite red LED is blinking indicating that VGA Broadcaster Lite is capturing images.
- Log into the Web admin interface and select Live View to confirm that a captured image appears.

If the red LED does not start flashing, check the VGA source to make sure it is transmitting a VGA image. Also check the cable between the VGA Broadcaster Lite device and the VGA source to make sure it is connected correctly. You can also connect a monitor to VGA OUT to check for the presence of a signal.

## **Connect and Power on a VGA Broadcaster Standard Device**

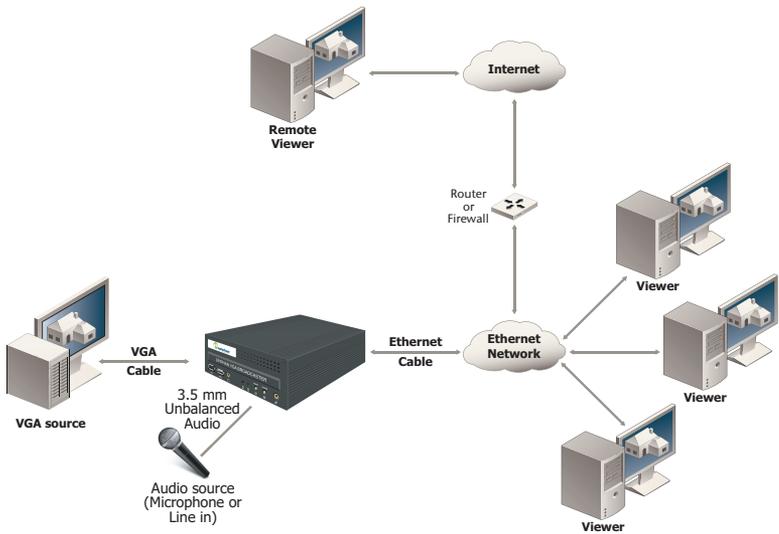
To connect a VGA Broadcaster Standard device you need:

- A VGA or DVI video source.
- An Ethernet connection between the VGA Broadcaster Standard device and a network.

You can also connect:

- A 3.5 mm line in or microphone audio source.

**Figure 6: Connecting VGA Broadcaster Standard to an Ethernet network**



### To connect and turn on the VGA Broadcaster Standard device

- 1 Use a VGA cable to connect the VGA source to the VGA Broadcaster Standard VGA IN port on the back of the device.  
You can use an active VGA splitter to split the VGA signal between a monitor and the VGA Broadcaster Standard device.  
Use a DVI to VGA converter if you are connecting a DVI source.

**Note:** Passive splitters reduce the quality of the VGA signal. Good quality active splitters, (available from Epiphan) do not usually affect signal quality. You should use a splitter with the highest available bandwidth.

- 2 Use a RJ-45 Ethernet cable to connect the VGA Broadcaster Standard Ethernet port on the back of the device to a 10/100/1000 Base-T Ethernet network.

For best performance, connect the VGA Broadcaster Standard device to a 1000 Base-T Ethernet.

The network must be running the TCP/IP protocol. Ideally the VGA Broadcaster Standard device should be able to connect to the Internet.

- 3 Connect the following optional components if you have them:

- Connect a 3.5 mm audio source to the Line in port on the back of the VGA Broadcaster Standard device or connect a microphone to the microphone port on the front of the small form factor device or the back of the 4U rack-mount device. If you connect an audio source you may have to change VGA Broadcaster Standard audio settings. For example, if you connect a microphone you must set the audio input source to Mic. See the [VGA Broadcaster User Guide](#) for more information.

- 4 Connect the power cable to the VGA Broadcaster Standard device.

- 5 Press the Power button on the VGA Broadcaster Standard front panel to turn on the device.

The VGA Broadcaster Standard device powers on and the power and hard disk activity LEDs light up as the device starts up.

- 6 Start up the VGA source.

To confirm that the VGA Broadcaster Standard is receiving images from the VGA source:

- Log into the Web admin interface and select Live View to confirm that a captured image appears.

Check the VGA source to make sure it is transmitting a VGA image. Also check the cable between the VGA Broadcaster Standard device and the VGA source to make sure it is connected correctly. You can also connect a monitor to VGA OUT to check for the presence of a signal.

## Using the Network Discovery Utility to Find the IP Address of the VGA Broadcaster Device

You can use the Network Discovery Utility on a Windows PC to find the VGA Broadcaster device and its IP address on the network. You can also use the Network Discovery Utility to connect to the VGA Broadcaster Web admin interface.

The VGA Broadcaster device must be assigned an IP address on the network to be able to transmit visual information, and so that participants can view that information. It can get an IP address from a DHCP server if there is one on the network. If the network does not have a DHCP server, see the *VGA Broadcaster User Guide*.

This section assumes that the network has a DHCP server and that the DHCP server gives the VGA Broadcaster device an IP address on the network.

### To install the Network Discovery Utility

- 1 Find the latest Network Discovery Utility on a VGA Broadcaster download page:

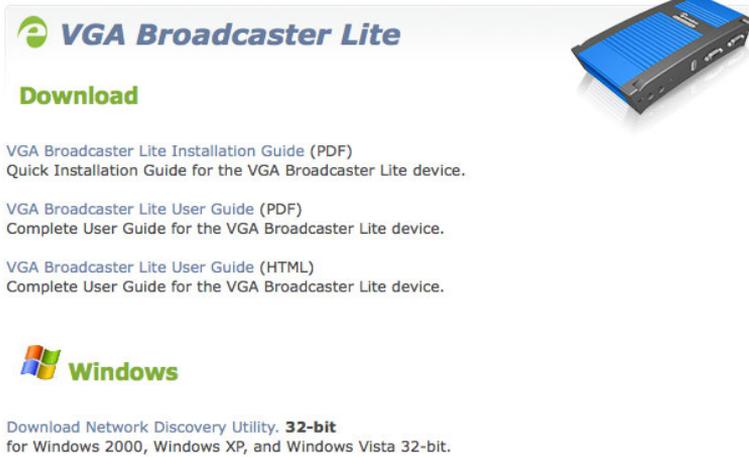
VGA Broadcaster Lite download page:

<http://www.epiphany.com/products/broadcasting/vga-broadcaster-lite/download/>

VGA Broadcaster Standard download page:

<http://www.epiphany.com/products/broadcasting/vga-broadcaster-std/download/>

**Figure 7: VGA Broadcaster Lite download page**



**2 Select Download Network Discovery Utility.**

Make sure you note the download destination folder.

**3 Run NetworkDiscovery.exe.**

**4 Select Search to find the Epiphan devices connected to the network.**

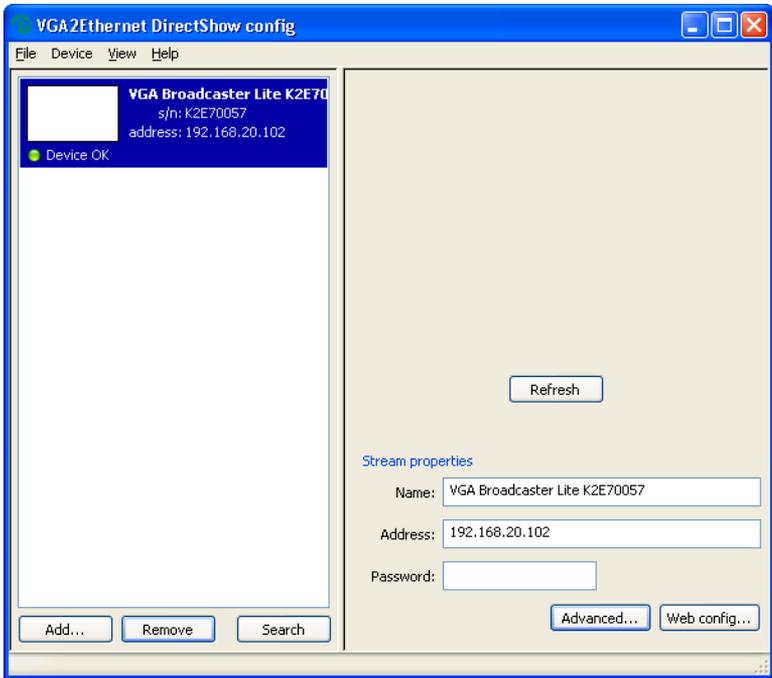
**Note:** The Network Discovery Utility can only find the Epiphan devices on the same network as the Windows PC.

If the VGA Broadcaster device is operating, has received an IP address from a DHCP server, and is connected to the network, the Network Discovery Utility should find it and it should appear on the Network Discovery Utility display. The Network Discovery Utility also displays the VGA Broadcaster IP address.

You can use this IP address to connect to the Web admin interface. You can also select Web config to connect to the Web admin interface.

**Figure 8** shows the Network Discovery Utility connected to a VGA Broadcaster device at IP address 192.168.20.104.

**Figure 8: Example network discovery utility display**



If the VGA Broadcaster device is capturing images, the status of the VGA Broadcaster device should be Device OK shown with a green indicator.

**Note:** When you restart the Network Discovery Utility and if it has already found an Epiphan device, it will show the status as Detecting and the indicator will be amber. The DHCP server may have assigned a new IP address; therefore, always select Search after starting the Network Discovery Utility.

If the Network Discovery Utility cannot find the VGA Broadcaster device, make sure the device is turned on and check the network connections. If you find and correct the problem, select Search to refresh the list of devices.

If you still cannot see the VGA Broadcaster device, it may not have gotten an IP address from the DHCP server. Use the information in the [VGA Broadcaster User Guide](#) to log into the Web admin interface and manually change the VGA Broadcaster IP address.

## Viewing the Broadcast

Now that you have the VGA Broadcaster IP address, you can distribute this IP address to viewers. Viewers can use the following steps to view the broadcast.

### To view the broadcast

- 1 Start any web browser.
- 2 Browse to the IP address of the VGA Broadcaster device.

For example, if the IP address of the device is 192.168.23.45 then browse to:

`http://192.168.23.45`

If the VGA Broadcaster is capturing images, the viewer can see the broadcast.

**Note:** If you have trouble opening the broadcast, you may need to download a plugin for your browser or change the VGA Broadcaster configuration. See the [VGA Broadcaster User Guide](#) for more information.

**Note:** You can add a viewer password to the VGA Broadcaster configuration. Viewers must enter the following to view the broadcast if it is password protected:

**User Name:** viewer

**Password:** (enter the viewer password)

See the [VGA Broadcaster User Guide](#) for more information.

## **Enabling Access to the Broadcast from the Internet**

To allow viewers access from the Internet, you must configure your Internet router or firewall to allow connections from the Internet to the VGA Broadcaster IP address.

A common way to do this is to configure port forwarding on the internet router or firewall so that when users attempt to connect to an IP address the connection is forwarded through the router or firewall to the destination VGA Broadcaster device.

For example, you could configure port forwarding on the router or firewall so that when a user on the Internet connects to the Internet IP address of the router or firewall on port 80 the connection is forwarded to the VGA Broadcaster device. If the Internet IP address of the router or firewall is 192.168.20.37, users on the Internet would connect to the following URL:

`http://192.168.20.37:80`

The router or firewall would forward this connection to the VGA Broadcaster web interface. This port forwarding configuration allows HTTP connections using port 80 from the Internet to be forwarded to the VGA Broadcaster device using port 80.

A second port forwarding configuration must be added to the router or firewall for the broadcast. By default the stream port is 1881 and the port forwarding configuration for the broadcast cannot change this port. So the port forwarding configuration for the broadcast must forward connections from the Internet to the VGA Broadcaster using port 1881.

How you configure port forwarding on your router or firewall depends on the product. See your product documentation for details.

**Note:** You can change the stream port from the Web admin interface. You might want to change the stream port if you do not want to add a port forwarding configuration for port 1881 to your router or firewall. You can change the stream port to any port except a port used by another Internet service. For example, you can't change the stream port to 80 because 80 is the port used by HTTP. If you change the stream port, you must configure port forwarding on your router or firewall for the changed port. See the *VGA Broadcaster User Guide* for more information.

## **Connecting a VGA Broadcaster device to a wireless network**

You can connect the VGA Broadcaster device to a wireless network if the device is running firmware that supports WiFi and if you have purchased a supported wireless network adapter from Epiphan. Contact Epiphan support for more information. See the *VGA Broadcaster User Guide* for details.