

ENGLISH



Matrox® Maevex™ 6020 Remote Recorder

User Guide

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Contents

Matrox safety information	4
Installation and operation	4
If a power supply (internal or external) was included with your product	4
If your product includes laser-based technology	5
If your product includes a battery	5
Repair	5
Overview	6
Hardware supplied	6
Hardware required (sold separately)	6
Optional hardware (sold separately)	6
More information	6
Getting started	8
Before you begin	8
Setup overview	9
Connecting your Maevox remote recorder	10
Before you begin	10
Connection overview	10
Description of supported connections	12
Step-by-step connection setup	13
Powering your device on and off	15
Validating your Maevox setup	16
Connection checklist	16
Description of status LEDs	16
Validating network discovery	17
Configuring your Maevox remote recorder	18
Before you begin	18
Assigning an IP address or a host name	18
Obtaining a registration key for your remote recorders	19
Downloading your Matrox Maevox 6020 Configuration and Firmware Utility	19
Running your configuration and firmware utility	19
Understanding your configuration and firmware utility	20
Using your configuration and firmware utility	22


Device settings	26
Verifying your Panopto settings	27
Managing your recordings	28
Starting a recording manually	28
Choosing a preview mode	29
Viewing your device status information	29
Kuando Busylight settings	30
Uploading your sessions to the Panopto server	31
Managing your sessions on the Panopto server	31
Troubleshooting	32
What to do if you have a problem	32
Common problems and solutions	32
Resetting your device	34
Product information	35
Specifications	35
Product dimensions	36
External power supply	36
Environmental	36
Supported standards	37
Notes and limitations	37
Appendix A – Firewall requirements	38
Firmware updater and configuration utility	38
Maevex 6020 devices	38
Adding rules to your Windows Firewall settings	39
Appendix B – Providing adequate airflow to your Maevex device	40
Customer support	41
Matrox web	41
View your warranty information	41
View the third party software notices	41
Register your Matrox product	41

Matrox safety information



To ensure safe and reliable operation of your Matrox product, to avoid personal injury, and to prevent damage to your computer or Matrox hardware, read the following guidelines.

Installation and operation

- Read and retain all instructions. Only use your Matrox product according to the instructions, operating ranges, and guidelines provided in the Matrox user guide and other related Matrox documentation. Failure to follow these instructions could result in damage to your product or injury to the user or installer.
- Don't expose your Matrox product to rain, water, condensation, or moisture.
- Your Matrox product (card or unit) can become hot while operating. Always turn off your computer, unplug it, then wait for it to cool before touching any of the internal parts of your computer or installing your Matrox card. Allow hot surfaces to cool before touching your Matrox unit. 
- Static electricity can severely damage electronic parts. Before touching any electronic parts, drain static electricity from your body (for example, by touching the metal frame of your computer).
- When handling a card, carefully hold it by its edges and avoid touching its circuitry.
- Don't stack devices or place devices so close together that they're subject to recirculated or preheated air.
- Don't operate your system or Matrox product near a heat source or restrict airflow to your system, and make sure the ambient temperature doesn't exceed the maximum recommended temperatures. Don't block ventilation holes on your unit or system.

If a power supply (internal or external) was included with your product

- Don't place the external power supply directly on top of the device.
- Only use power supplies originally supplied with the product or use a replacement that's approved by Matrox. Don't use the power supply if it appears to be defective or has a damaged chassis.

- Don't 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 doesn't fit into your outlet, consult an electrician to replace the obsolete outlet.
- Make sure that nothing rests on the power cables and that the cables aren't located where they can be stepped on, pinched, or tripped over.
- Don't use damaged power cables.
- Unplug your system or device during lightning storms or if unused for long periods of time.

If your product includes laser-based technology

- The device contains a Class 1 laser product for use only under the recommended operating conditions and guidelines. For more information, see your Matrox user guide.
- Invisible laser radiation may be emitted from disconnected fibers or connectors. Don't stare into beams or view directly with optical instruments.
- Only use optical transceivers originally supplied with the product or use a replacement that's approved by Matrox.
- For more information on laser support and compliance, see your Matrox user guide.

If your product includes a battery

- The battery is non replaceable.
- To dispose of your product, see www.matrox.com/environment/weee.



Repair

- Don't attempt to open or repair a power supply unit (if one was supplied).
- Don't attempt to open or repair your Matrox product.
- If there's a fault with your Matrox product, review your Matrox warranty for more information.

Overview

Thank you for purchasing a Matrox Maevox 6020 Remote Recorder. Your Matrox Maevox 6020 product is a dedicated multi-encoder and multi-recorder device designed specifically for the Panopto™ online video management platform.

Hardware supplied*

- Maevox 6020 remote recorder device, 1 power supply
- 3.5 mm Male to 2 RCA Female stereo adapter (6 inch)

Hardware required (sold separately)

- Network cable (CAT 5, 5e, 6, or 7)
- Shielded HDMI® cable or certified high-speed HDMI cable

Optional hardware (sold separately)

Depending on your connection setup, you may also need any of the following hardware:

- Kuando™ Busylight
- Analog audio cable
- Microphone
- HDMI cable or adapter (for your monitor type)
- DisplayPort cable or active adapter (for your monitor type)†

More information

- **Matrox hardware** – Your Matrox user guide provides information on installing and connecting and configuring your Matrox hardware. Be sure to check for any last-minute release notes included with your product. Also, check the Matrox web site (www.matrox.com/graphics) for the latest Matrox software, technical support, and product information.

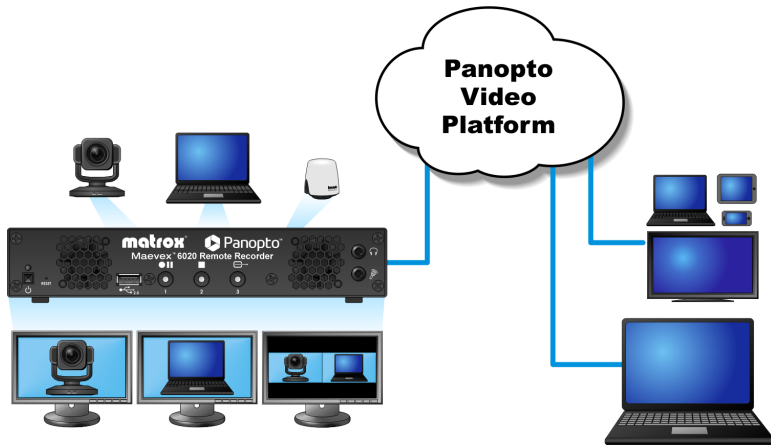
* The hardware supplied with your Matrox product may vary depending on the SKU or part number of your product. For more information, contact your Matrox representative.

† Only active adapters (sold separately) are supported. Passive adapters aren't supported.

- **Panopto software** – For more information on scheduling and managing your recordings, see your Panopto documentation.

Getting started

Maevox 6020 Remote Recorder provides hardware streaming and recording technology that's integrated into the Panopto™ cloud video platform. Your Maevox device has two (2) Full HD channels of live video that can be used simultaneously. Each channel of live video can have up to five (5) recordings being recorded simultaneously, and uploaded to the Panopto cloud for immediate delivery, video-on-demand (VOD), or later transmission.



Before you begin

We recommend you have the following:

- IP address or host name for your remote recorder
- NTP (Network Time Protocol) server
- DHCP (Dynamic Host Configuration Protocol) server
- DNS (Domain Name System) server
- System running Microsoft® Windows®
- One output device (monitor) for previewing your recording session
- Camera or video source
- Panopto account

Setup overview

To set up your Matrox product:

- 1 Connect your product – see “Connecting your Maevox remote recorder”, page 10.
- 2 Validate your setup – see “Validating your Maevox setup”, page 16.
- 3 Configure your product – see “Using your configuration and firmware utility”, page 24.
- 4 Manage your recordings – see “Managing your recordings”, page 28.

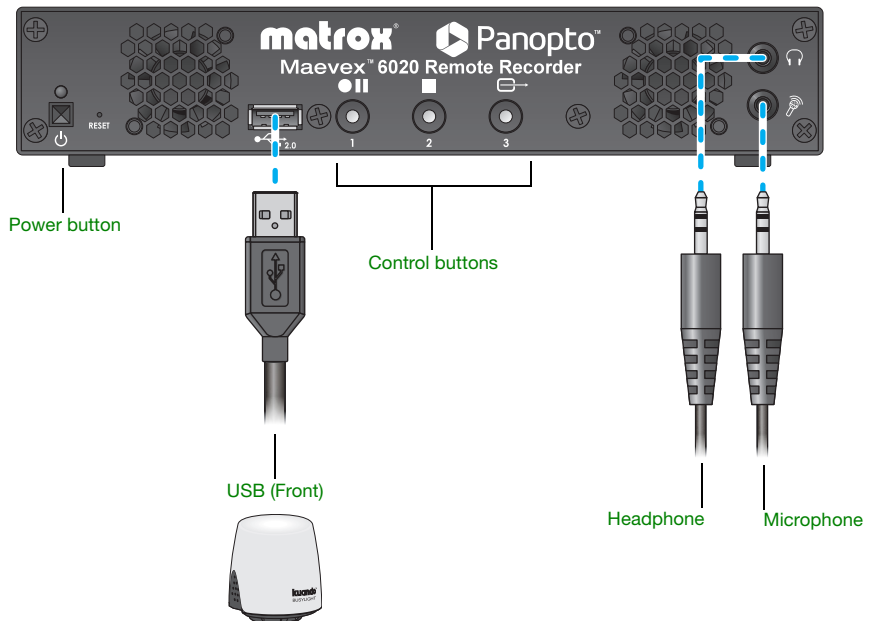
Connecting your Maevox remote recorder

Before you begin

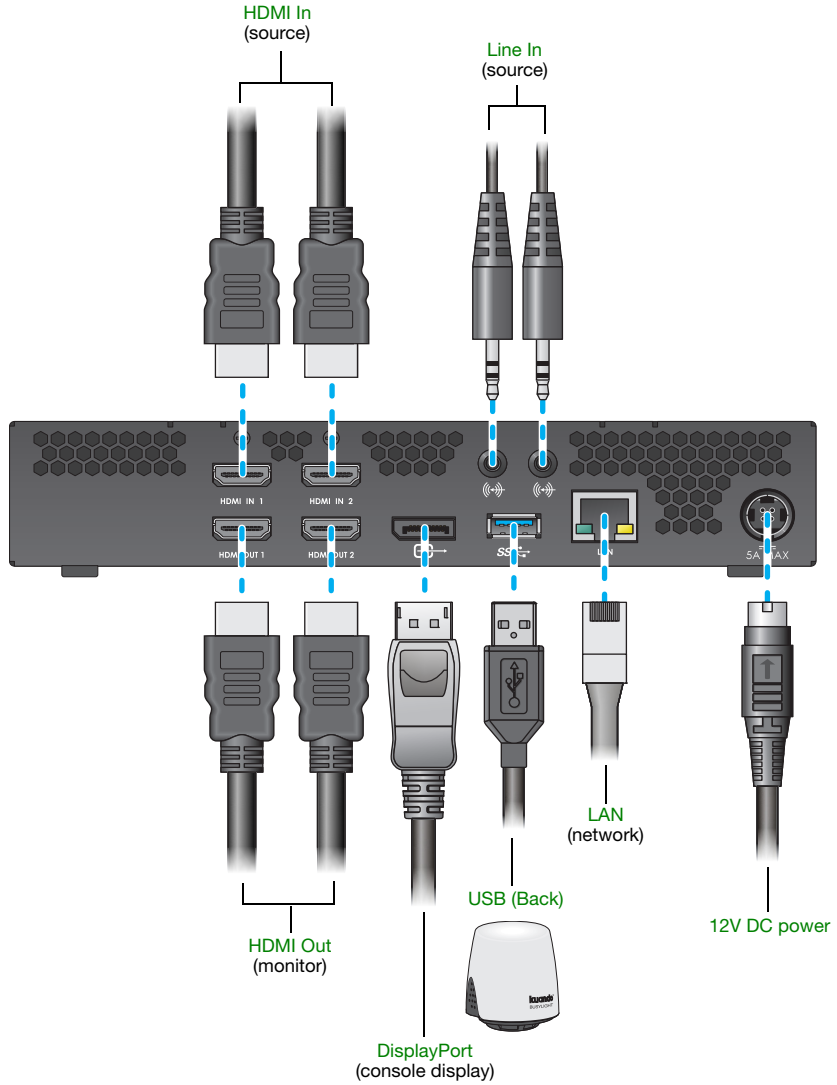
- Whenever you change your connection setup, make sure you're using the correct connectors and that all connectors are properly fastened.
- Don't change input connections while your Maevox device is turned on. If connections are changed while your Maevox device is turned on, your video sources will be lost.
- Review the safety information provided. For more information, see [“Matrox safety information”](#), page 5.

Connection overview



Maevox 6020 remote recorder (Front)



Maevex 6020 remote recorder (Back)



Description of supported connections

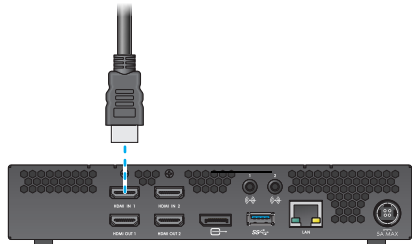
Connector	Description
12V DC power	Connect the 12V DC power supply included with your product to this connector. While the 12V DC power supply is connected to the device and electrical socket, the power LED () is active (not black). For more information on LEDs, see “Description of LEDs”, page 15 .
Control buttons	Use these buttons to manually control the recording process. For more information, see “Understanding the control buttons”, page 13 .
DisplayPort	Optional – Connect a DisplayPort monitor to this connector to use as a console display. You can use a console display to preview your video source and what’s being recorded. Note: Your DisplayPort monitor must support a resolution of 1280 × 720. For more information, see “Notes and limitations”, page 37 .
Headphone	Optional – Connect your headphones to this jack.
HDMI In	Connect your camera or video source to this connector. Note: To connect to this connector, you need a shielded HDMI cable.
HDMI Out	Optional – Connect a digital monitor to this connector. Note: To connect to this connector, you need a shielded HDMI cable.
LAN	Connect a network cable to this connector.
Line In	Optional – Connect the analog audio output of your video source to this jack.
Microphone	Optional – Connect your microphone to this jack. Note: Audio priority is given to the microphone connector. For more information, see “No audio”, page 33 .
Power button	Use the power button () to power your device on or off. For more information, see Powering your device on and off .
USB (Front)	Optional – Connect your Kuando™ Busylight UC Omega device either to the USB 2.0 connector (front) or to the USB 3.0 connector (back) on your Maevox device.
USB (Back)	

Step-by-step connection setup

This section guides you through the step-by-step connection setup of your Maevex 6020 remote recorder.

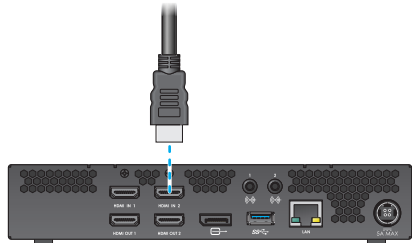
1 Connect your camera

Connect your camera to the **HDMI In 1** connector on your remote recorder unit.



2 Connect your video source

If you're using a video source (such as a laptop), connect your video source to the **HDMI In 2** connector on your remote recorder unit.

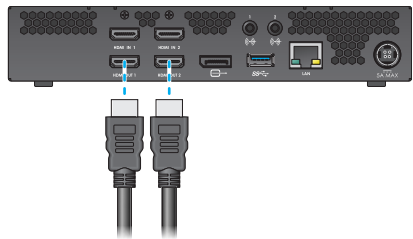


3 Connect your monitor

Connect the monitor cable to the **HDMI Out 1** connector on your remote recorder unit.

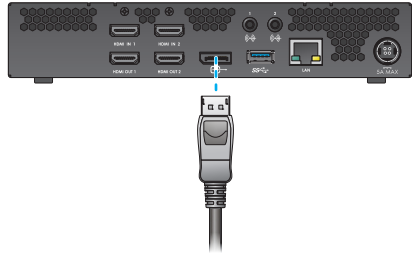
If you're connecting a second monitor, connect the monitor cable to the **HDMI Out 2** connector on your remote recorder unit.

If your monitor doesn't support HDMI output, use an HDMI adapter to connect your monitor to your remote recorder unit.



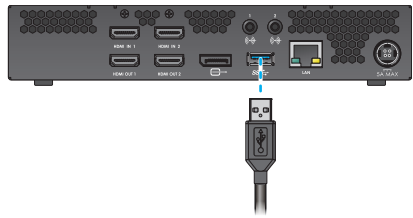
4 Connect your console display (optional)

If you're connecting a console display to your unit, connect the monitor cable to the **DisplayPort** connector on your remote recorder unit.



5 Connect your USB device (optional)

If you're connecting a Kuando™ Busylight UC Omega device to your unit, connect the USB cable to the **USB (Front)** connector on your remote recorder unit.



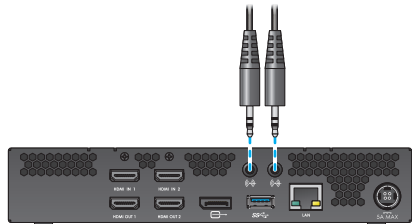
6 Connect to your network

Connect a network cable to the **LAN** connector on your remote recorder unit.



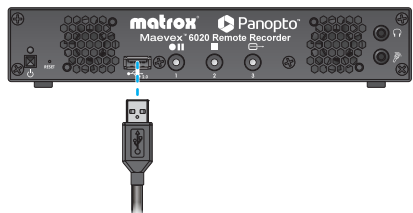
7 Connect your analog audio input (optional)

Connect the analog audio output of your video source to the **Line In** (⚡) connector on your remote recorder unit.



8 Connect your USB device (optional)

If you're connecting a Kuando™ Busylight UC Omega device to your unit, connect the USB cable to the **USB (Back)** connector on your remote recorder unit.



9 Connect your headphone or microphone (optional)

Connect your headphone to the **Headphone** (🎧) connector on your remote recorder unit.

Connect your microphone to the **Microphone** (🗣️) connector on your remote recorder unit.



Note: Audio priority is given to the microphone connector. For more information on audio priority, see “No audio”, page 33.

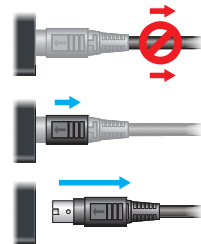
10 Connect your power supply

Connect your power supply included with your product to the **12V DC** connector on your remote recorder unit. While the 12V DC power supply is connected to the unit and electrical socket, the power LED (⏻) is active (not black).

For more information on LEDs, see “Description of LEDs”, page 22.



WARNING: To avoid damaging the power connector on your unit or on your power cable when unplugging a unit, firmly hold the power connector, pull back the connector on the cable, then carefully remove the power cable.



Powering your device on and off

To power on or off your device, press the (⏻) button on your device.

After connecting your MaeveX remote recorder, validate your connection setup (see “Validating your MaeveX setup”, page 16).



Validating your Maevox setup

After connecting your Maevox devices, we recommend you validate your connection setup and network discovery before you continue.

Connection checklist

After connecting your Maevox device, we recommend you validate your audio and video connections before you continue:

- Audio connection** – Connect headphones to the **Headphone** jack on your remote recorder.
- Video connection** – Connect a console display to the **DisplayPort** connector on your remote recorder.

Description of status LEDs

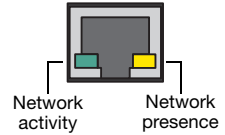
The LED on your Maevox device provides information to help you troubleshoot your Maevox product. The following describes the LED on your Maevox device.



LED color	Maevox 6020 remote recorder
No LED (black)	Device isn't powered.
Green (solid)	Device is active.
Green (slow blink)	Device is rebooting.
Green (fast blink)	Configuration reset in progress.
Amber (solid)	Device is in maintenance mode.
Amber (slow blink)	Device is restarting and is in maintenance mode.
Amber (fast blink)	Device is updating the firmware.
Red (solid)	Device has detected a fatal error. Try powering your device off and on (see “Powering your device on and off” , page 15). If, after restarting your device, the LED is still red, contact your vendor for technical support (see “Customer support” , page 41).

Network connector

The network connectors on your product use LEDs to provide information on the network activity and presence. The following describes the different network connector LEDs.



LED color	LAN (Left LED)	LAN (Right LED)
No LED (black)	No activity detected.	Transmitting at 1 Gbps.
Green (solid)	—	—
Green (fast blink)	Network activity detected.	—
Amber (solid)	—	Transmitting at 100 Mbps.

Validating network discovery

Maevex devices are initially assigned their IP addresses through DHCP (Dynamic Host Control Protocol). After connecting your devices, we recommend verifying that all of your devices are discovered by the network. For more information, contact your network administrator.

Multiple subnet support

Maevex devices that are in the same subnet are detected through the UPnP (Universal Plug and Play) protocol. If your devices are in different network subnets, you need to validate network discovery in each subnet separately. For more information on using different subnets, contact your network administrator.

After validating your connection setup, configure and update your Matrox Maevex remote recorder (see [“Using your configuration and firmware utility”](#), page 24).

Configuring your Maevox remote recorder

This section describes how to configure and update your Matrox Maevox remote recorder.

Before you begin


- Make sure you connect your product *before* configuring it. For more information on connecting your product, see [“Connecting your Maevox remote recorder”](#), page 10.
- You may need administrator rights to install or uninstall certain software. For more information, see Windows documentation or contact your system administrator.
- Make sure you have an NTP (Network Time Protocol) server. For more information, contact your network administrator.
- Make sure you have a Panopto account. For more information, contact your Panopto administrator.
- Windows Server 2019, Windows Server 2016, and Windows Server 2008 R2– Make sure the SSDP Discovery service, network discovery, and file sharing options are enabled.
- Make sure you’re using the *Matrox Maevox 6020 Configuration and Firmware Utility* on a system that’s running Microsoft® Windows®.
- Make sure you have a recorder registration key from Panopto. For more information, see [“Obtaining a registration key for your remote recorders”](#), page 19.

Assigning an IP address or a host name

To locate a remote recorder, Matrox software uses the device IP address through UPnP or the host name through a DNS server. For more information on which network protocol you should use contact your network administrator.

Obtaining a registration key for your remote recorders

To configure your remote recorder, you need a registration key from Panopto:

- 1 Sign in to the Panopto server as an administrator.
- 2 Click **System** →  **Remote Recorders** → **Manage registration keys** → **Create a new registration key**.
- 3 Take note of your registration key. The same registration key can be used for multiple recorders.

Downloading your Matrox MaeveX 6020 Configuration and Firmware Utility

Matrox makes the latest software available on the Matrox web site (www.matrox.com/graphics/en/support/drivers/).



Running your configuration and firmware utility

Run the *MVX-6020_Setup-FW_Util.msi* program locally (not over a network) on a system running Microsoft® Windows® and follow the on-screen instructions.

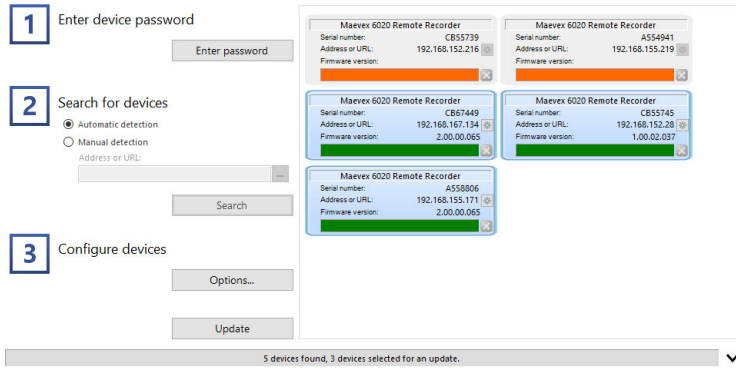
This installs the *Matrox MaeveX 6020 Configuration and Firmware Utility*.

Silent installation

For information on the silent installation and remote installation of firmware updates, contact Matrox technical support (maevexsupport@matrox.com).

Understanding your configuration and firmware utility

Your Matrox MaeveX 6020 configuration and firmware utility guides you through the steps to *enter a device password* for (step 1), *search* for (step 2), and *configure and update* (step 3) your MaeveX 6020 devices.



Configuration overview

To configure your devices:

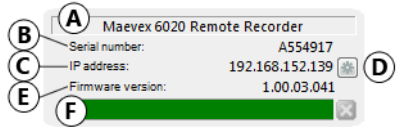
- 1 Enter device password** – Enter a password for your MaeveX devices (see “Enter device password”, page 22).
- 2 Search for devices** – Search for the MaeveX devices to configure and update by selecting **Automatic detection** or **Manual detection** (see “Search for devices”, page 23).
- 3 Configure devices** – Configure your device settings (such as your Panopto™ account, your proxy server, and the date and time settings of your MaeveX devices), and update the firmware of your devices (see “Configure devices”, page 24).



WARNING: For your configuration settings to be properly applied, you must **Update** your devices (complete step 3).

Understanding your device tile







The tile provides the following information about your device.



A	Device name.
B	Device serial number.
C	IP address.
D	Advanced options for your device. For more information, see “Device settings” , page 26.
E	Firmware version.
F	Device status. For more information, see “Understanding your device status” , page 21.

Understanding your device status

Depending on the status of a device, the color of the status bar changes:


Detected (Green) 	Device is detected and firmware is up to date.
Updating (Yellow) 	Device update in progress.
View only (Orange) 	Device information can be viewed, but not modified. (Device isn't detected, device is locked or unauthorized, or the firmware is out of date). For more information, see “Using your configuration and firmware utility” , page 22.
Error detected (Grey) 	Device has encountered an error. The status and information of the device can't be updated. To fix this, try rebooting your device.
Update failed (Red) 	Device update has failed. To fix this, try rebooting your device.
Undetected (Black) 	Device can't be detected. When a device is no longer detected, the tile lists the last known IP address of that device. To fix this, review your settings and search for your devices again.

Managing your device tiles

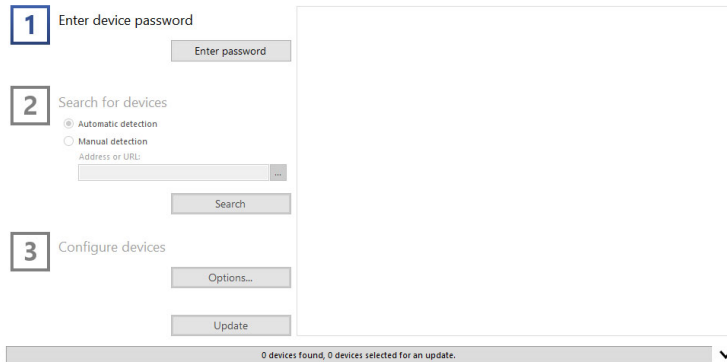
To access the shortcut menu, right-click your device tile. The menu items include:

Sort by	Sort the device tiles listed by Product name , Serial number , IP address , and Updated status .
Unselect all devices	Unselect all the devices listed.

Progress update

To see the progress of your device search or update, click the **Show log** () icon at the bottom of the program window.

Using your configuration and firmware utility



1 Enter device password

Enter a password for your Maevox devices. This prevents unauthorized users from making changes to your device.

Enter password Click **Enter password** to assign a password to your devices. When you're done, click **OK**.

1 Enter device password

Enter password



Note: We strongly recommend you take note of the password entered. You will need this password to update or change the configuration of your device.

2

Search for devices

Search for the Maevox devices to configure and update by selecting **Automatic detection** or **Manual detection**.

Automatic detection To search for the Maevox devices on your subnet, select **Automatic detection**.

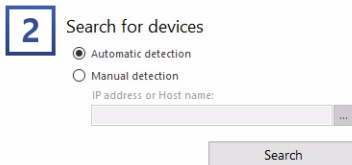
To start searching for devices, click **Search**.

Manual detection If devices aren't automatically detected, you can manually locate one or more Maevox devices using their IP address or host name. To manually locate the devices, select **Manual detection**, and then enter the IP address or DNS host name of each Maevox device you want to locate.

If you're entering multiple addresses, separate each address with a space. (You can also enter the IP addresses or host names by clicking the browse button (⋮) and entering one IP address or host name per line.)

When you're done, click **Apply**. To discard the last changes made, click **Cancel**.

To start searching for devices, click **Search**.



2 Search for devices

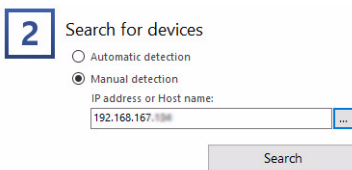
Automatic detection

Manual detection

IP address or Host name:

⋮

Search



2 Search for devices

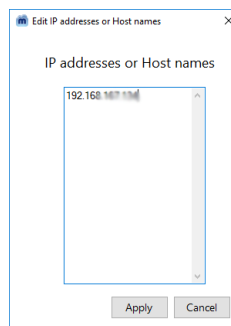
Automatic detection

Manual detection

IP address or Host name:

192.168.167.100 ⋮

Search



Edit IP addresses or Host names

IP addresses or Host names

192.168.167.100

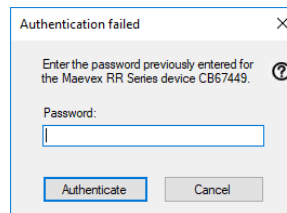
Apply Cancel

Stopping the search Searching for the Maevox devices on your network may take a few minutes. Once your device or devices are located, you can stop the search. To stop searching for devices, click **Stop**. To resume searching for devices, click **Search** again.

Authenticate the devices found

If you enter a different password for the Maevox devices found, you may be prompted to authenticate the devices found.

If prompted, enter the **Password** for the devices found, then click **Authenticate**.



Authentication failed

Enter the password previously entered for the Maevox RR Series device CB67449.

Password:

Authenticate Cancel

3

Configure devices

Enter your Panopto™ account information, and configure the **Advanced settings** (such as your proxy server, and the date and time settings) of your Maevox devices. To configure your devices, click the **Options** button.

Panopto account Enter your Panopto account information (**Site name** and **Recorder registration key**).

Panopto account

Site name:
Example: customer.hosted.panopto.com

Recorder registration key:

Additional options Select an option for managing the recordings on your Maevox device:

Additional options

Copy last recorded session to USB

Manual recording options

Use recording button

Lock recording button (no manual recording)

- **Copy last recorded session to USB** – Enable this to copy the last recorded session from the internal SSD to a USB flash drive.



WARNING: *Before copying a last recorded session to USB, make sure any live sessions currently recording are stopped.* If a live session is happening *at the same time* as a copy to USB, the live session recording will likely be adversely affected and result in dropped frames and reduced quality while the transfer to USB occurs.

To start copying the session, connect a USB flash drive to a USB connector on your Maevox device, then press and hold the **Preview** (⏮→) control button for 5 seconds. When you release the button, the **Record/Pause** (●||) control button LED turns fast blinking red, indicating that the copy to USB has started.



WARNING: While the session is copying, the **Record/Pause** (●||) control button LED continues to blink red. *Don't remove the USB flash drive while the Record/Pause control button LED is blinking red.* The LED stops blinking when the copy is completed (for a long session, this may take a while). When the LED stops blinking, it's safe to remove the USB drive.

Copy last recorded session to USB – More information

- Before copying to USB, make sure your USB flash drive is formatted to NTFS. Also, make sure that the USB drive has enough free space.
 - Before starting a new copy, disconnect the USB flash drive used for the last session (if still connected), then reconnect the USB drive and start copying a new session.
 - Only the highest quality version of the recording (highest resolution and bit rate) is copied.
 - The last recorded session is available for copy for up to 2 hours after the end of the session (or until a new session becomes available for copy).
 - Once the session is copied, the session remains on the SSD until it's uploaded to the Panopto server.
- **Use recording button** – Allow users to press the record button on the Maevox device to start a recording.
 - **Lock recording button (no manual recording)** – Lock the record button on the Maevox device to prevent users from pressing the button and starting a recording.

For more information on using the record button on your device, see “Starting a recording manually”, page 28.

To apply your changes, click **OK**. To discard the last changes made, click **Cancel**.

Advanced settings

To view and edit your advanced settings (such as proxy and NTP server settings), click **Advanced settings**.

Proxy configuration If your Maevox devices are behind a proxy server, you must set a proxy.

Enable the **Set a proxy** option, then enter the proxy settings (**Server**, **Port**, **User name**, and **Password**) for your system.

For more information, contact your network administrator.

Proxy configuration

Set a proxy

Server:

Port:

User name:

Password:

Date and time The default NTP server name is *time.matrox.com*. If you have your own NTP server, enter the name of your server.

Date and time

NTP server:

To apply your changes, click **OK**. To discard the last changes made, click **Cancel**.

Updating your devices

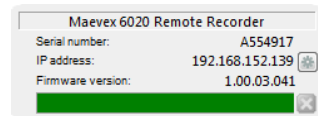
Select the devices you want to update. If the utility detects a device that has an older firmware version, that device is automatically selected to be updated.

You can only select the devices that have been authenticated (see “Authenticate the devices found”, page 23). Authenticated devices have a green status bar. Unauthenticated devices have an orange status bar.

Device settings

To access additional settings for your device:

- 1 From the list of detected Maevox 6020 devices, select the tile of the device you want to modify.
- 2 Click the **Settings** button (⚙️) next to the **IP address**.



Getting your device logs

The device logs contain information on your Maevox 6020 device. This information is useful for troubleshooting purposes.

To download the logs for your device, click **Get device logs**.

Hardware version: 7505-03
Subsys ID: 0x0203102B
Product XML file: Maevox6020.xml
TLS certificate expiration: 2023-05-23 09:32:16



Get device logs

Format SSD

Formatting the SSD

To format the internal solid state drive (SSD) on your device, click **Format SSD**.

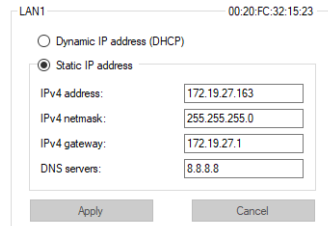


WARNING: Formatting the SSD permanently erases all recordings from this device. Any recordings that haven't been uploaded to the Panopto server will be lost.

Assigning a static IP address to your device

By default, your Matrox device is configured to use a **Dynamic IP address (DHCP)**. You can manually assign a static IP address to your device through the network settings of your MaeveX product.

- 1 Click the **Network** tab.
- 2 Select **Static IP address**, then specify the **IPv4 address**, **IPv4 netmask**, **IPv4 gateway**, and **DNS servers** for your MaeveX device.
- 3 When you're done, click **Apply**.



LAN1 00:20:FC:32:15:23

Dynamic IP address (DHCP)

Static IP address

IPv4 address:

IPv4 netmask:

IPv4 gateway:

DNS servers:


For your devices to be detected, you may need to search for the devices again.

More information on network settings

- **IPv4 address** – An IP address between 192.168.0.0 and 192.168.255.255 (recommended). Also, we recommend you assign an IP address within the subnet of your network.
- **IPv4 netmask** – The subnet mask defining group of IP addresses in your subnet. By default, the subnet mask is 255.255.255.0.
- **IPv4 gateway** – The gateway is often the same as your IP address, but the last byte may be 0 or 1.
- **DNS servers** – The address of your DNS (Domain Name System) server or servers. If you're entering multiple addresses, separate each address with a space.

For more information on assigning a static IP address, contact your network administrator.

Verifying your Panopto settings


- 1 Sign in to the Panopto server as an administrator.
- 2 Click **System** →  **Remote Recorders**, then configure your remote recorder settings.

For more information, go to <http://support.panopto.com>, search for *remote recorders*, and look for the article titled *Remote Recorder Configuration and Quality Settings*.

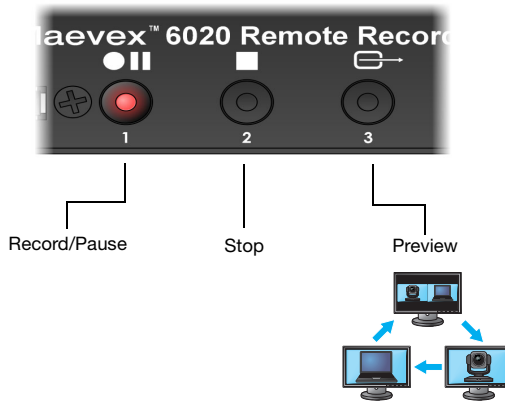
After configuring your MaeveX remote recorder, you can start recording (see “[Managing your recordings](#)”, page 28).




Managing your recordings

Starting a recording manually

 **Note:** To schedule a recording or manage live streaming, see your Panopto documentation.

Your Maevox device enables you to manually start a recording. Use the three (3) buttons on the front of the device to manually control the recording process.



Button	Description
 Record/Pause	<ul style="list-style-type: none">▪ Record – To start a recording, press this button. When the recording starts, the button LED turns solid red. While the recorded session is copying to USB, the button LED turns fast blinking red.▪ Pause/Unpause – To pause or unpause a recording, press this button again. When the recording is paused, the button LED turns blinking red.
 Stop	Press this to stop a recording that was started using the Record button.
 Preview	Press this to cycle through the preview modes. The preview modes enable you to view what's being recorded, your video source, or both. For more information, see “Choosing a preview mode” , page 29.

Locking the record button

You can use the *Matrox Maevox Remote Recorder Configuration and Firmware Utility* to lock the **Record** button on your Maevox device. Locking the record button prevents users from recording manually. For more information, see [“Configure devices”](#), page 26.

Scheduled recording rules

Scheduling a recording through Panopto software affects the functionality of the recording buttons on your MaeveX device:

Up to 15 minutes before the start of a scheduled recording	Only the Pause and Stop buttons work.
At the start of a scheduled recording	If a scheduled session is running, the current manual recording is stopped.
During a scheduled recording (session is running)	Only the Pause button works.

Choosing a preview mode

Your Matrox device supports the following three preview modes.

Primary preview The primary preview enables you to view what's being recorded.



Secondary preview The secondary preview enables you to view your video source information (for example, a slideshow or video).



Side-by-side preview The side-by-side preview enables you to view both the primary preview and secondary preview in a side-by-side view.



Viewing your device status information

When you cycle through the preview modes, certain status information may appear on your preview screen, such as the:

- **Preview mode selected** – Indicates if the primary, secondary, or side-by-side view is selected.
- **Serial number and IP address of the device** – Identifies the device by its serial number and IP address.
- **Recording notification** – A red circle indicates that the device is recording.

- **Volume meter** – Indicates the audio level of the output.
- **Internal SSD space used** – Indicates the amount of space used by the device’s internal Solid State Drive (SSD). If the internal buffer space is low or full, see “[Internal SSD buffer space is low or full](#)”, page 34.
- **Connection status** – Provides information on the registration and connection of your device to the Panopto server:
 - **No IP address:** Remote recorder IP address not available.
 - **Recorder not configured:** Invalid Panopto account information. No site name and/or recorder registration key.
 - **Recorder registration failed:** Maevox remote recorder registration has failed. Make sure you’re using the latest software version, your proxy is properly configured (if applicable), and your Panopto account information (site name and registration key) are correct. If the problem persists, contact your technical support representative.
 - **Recorder connection failed:** The connection to the Panopto server has failed.
 - **No site access:** Unable to reach the Panopto server.
 - **Recorder unexpected connection error:** Unknown connection error had occurred.
 - **RTMP bandwidth failure:** The remote recorder is connected to the Panopto server but encountering bandwidth issues with active RTMP sessions.
 - **Recorder connected:** The remote recorder is successfully connected to the Panopto server.

Kuando Busylight settings

Your Kuando Busylight provides a visual indicator of the status of your device:

No LED (off)	Nothing in progress.
Green (blinking)	Record button has been pushed, but recording hasn’t started.
Green (solid)	Recording in progress
Yellow	Remote recorder is paused.
Red	Error was encountered.

Uploading your sessions to the Panopto server



Note: The recording buffer of the internal SSD has a capacity of approximately 18 hours (before upload to the Panopto server) when the video quality settings are set to maximum values and the target resolution is 1920 × 1080 60 fps. If more recording time is required, we recommend reducing the primary and/or secondary video quality settings through your Panopto software. For more information on adjusting video quality settings, see Panopto documentation.

Once connected to the Panopto server, your Maevex remote recorder automatically uploads your recording sessions to the Panopto video platform.

Managing your sessions on the Panopto server

Use Panopto software to create, schedule, and manage your recording sessions. For more information, see your Panopto documentation.

Troubleshooting

What to do if you have a problem

If you experience problems with your Matrox product:

- Make sure your Matrox device is properly connected, you're using the correct connectors, and that all connectors are properly fastened.
- Make sure you have administrator rights on the system you want to use. For more information, see Windows documentation.
- Verify the LEDs on your Maevev device (see [“Description of status LEDs”](#), page 16).
- Review the status information of your Maevev device (see [“Viewing your device status information”](#), page 29).
- Try rebooting your device (see [“Powering your device on and off”](#), page 15). If rebooting your device doesn't work, you may need to perform a configuration reset of your device (see [“Resetting your device”](#), page 34).

If your problem persists, contact Matrox. For more information, see [“Customer support”](#), page 41.

Common problems and solutions

This section addresses specific problems to your Matrox product that could prevent you from using your system or product.

Problem Maevev device can't connect to Panopto video platform

Cause Your Panopto user credentials are incorrect.

Solution Contact your Panopto administrator to verify the user credentials for your Panopto account.

Cause The firewall for your system or network may be enabled and may prevent communication with your Maevev devices.

Solution Make sure your firewall is properly configured to allow the necessary communication between your Maevev devices and the various networked components. For more information, see [“Appendix A – Firewall requirements”](#), page 38.

Problem **Maevex device not discovered on the network**

Cause Your Matrox product may not be properly connected or configured.

Solution Verify the status information of your Matrox product (see “Validating your Maevex setup”, page 16).

Cause Windows Server 2019/2016/2008 R2 only – The Windows SSDP Discovery service may be disabled on your system.

Solution Make sure the SSDP Discovery service is enabled on your system.

Cause Network discovery and file sharing may not be enabled on your system.

Solution Enable network discovery and file sharing on your system.

Cause The firewall for your system or for your network may be enabled and may prevent communication with your Maevex devices.

Solution Make sure your firewall is properly configured to allow the necessary communication between your Maevex devices and the various networked components. For more information, see “Appendix A – Firewall requirements”, page 38.

Problem **No audio**
(Can’t capture or play back audio)

Cause Your audio capture settings may be disabled or not properly selected.

Solution Verify your audio **Capture** settings through Panopto software. Make sure you enable your primary audio source (**Audio 1** or **Audio 2**). Depending on your settings, audio priority is given to the connectors in the following order:

Audio 1	<ul style="list-style-type: none">▪ Microphone▪ Line In 1▪ HDMI In 1
Audio 2	<ul style="list-style-type: none">▪ Microphone▪ Line In 2▪ HDMI In 2

For more information, see your Panopto software and documentation.

Problem Internal SSD buffer space is low or full

Cause The primary and/or secondary video quality settings are set to **1080p** (maximum value), with a target resolution of 1920 × 1080 60 fps.

Solution The recording buffer of the device's internal SSD has a capacity of approximately 18 hours (before upload to the Panopto server). To increase the total recording time, try reducing your video quality settings through Panopto software. For example, using **Ultra** quality settings increases the total recording time to 34 hours, and using **High** quality settings increases the total recording time to 48 hours. For more information on adjusting video quality settings, see Panopto documentation.

Problem RTMP bandwidth failure

Cause There may not be enough bandwidth available.

Solution Make sure your network and network equipment support the bandwidth required for your session. For more information, contact your network administrator.

Resetting your device

In some cases, you may need to perform a *configuration reset* of your Maevox 6020 device.



WARNING: A configuration reset restores the default settings of your Maevox 6020 device. This *resets all* of your device settings, including the IP configuration and password.

To restore the default settings of your Maevox 6020 device, press and hold the **Reset** button on your device with the tip of a paper clip for **5 seconds** (until the LED turns fast blinking green).

This reboots your device and restores the default settings of your device.



Product information

Specifications

	Maevex 6020 remote recorder
Product type	Standalone appliance
Form factor	1 RU, half width
System memory	2 GB
Video input connectors	2× HDMI Type A (with 16-bit stereo L-PCM audio)
Video output connectors	2× HDMI Type A (with 16-bit stereo L-PCM audio), and 1× DisplayPort (for console display)
Audio input connector (analog)	2× mini-stereo jacks
Audio output connector (headphone)	1× mini-stereo jack
Microphone input connector	1× mini-stereo jack
Networking interface	RJ45 Gigabit Ethernet
USB ports (Kuando™ Busylight support)	1× USB 2.0 (front), 1× USB 3.0 (back)
Supported resolutions (input and output)	Maximum 1920 × 1080 @ 60 Hz
Video encoding	H.264/MPEG-4 Part 10 (AVC), 4:2:0 (8-bit)
Streaming protocols	RTMP, RTMPS
Command protocols	UPnP, HTTP, HTTPS
Streaming to Panopto cloud	Up to 2× 1920 × 1080 RTMP live streams
Target total RTMP streaming bit rate	1.2 Mbps (Quality: Standard) / 6.7 Mbps (Quality: 1080p)
Target total recording bit rate (all resolutions)	2.5 Mbps (Quality: Standard) / 13 Mbps (Quality: 1080p)
Recording resolutions	Maximum 1920 × 1080 (2 native and up to 5 downscaled versions)
Recording format	Fragmented MP4 (fMP4)
Recording location	Panopto server (128 GB temporary local SSD buffer)
Power requirements	+12V DC, maximum 5A (5A fuse for overcurrent protection)
Power connector	DIN 4-pin female

Maevox 6020 remote recorder

Power consumption*	Maximum: 38W Typical: 35W
Regulatory compliance	Class A: CE, FCC, ICES-3, KC, RCM, VCCI

* Excluding power drawn by external USB devices.

Product dimensions

Length	21.7 cm (8.53 inches)
Width/Depth	4.3 cm (1.68 inches)
Height	19.1 cm (7.52 inches)

External power supply

Input AC voltage range	100V to 240V AC
Input frequency	50 to 60 Hz
Input connector	IEC 60320-C13
Output voltage	+12V DC, 5A
Output connector	DIN 4-pin male with lock
Maximum power	60W

Environmental

Temperature, operational	0 to 45 °C (32 to 113 °F)
Temperature, non-operational storage and transportation	-40 to 70 °C (-40 to 158 °F)
Humidity, operational (indoor)	20% to 80% (non-condensing)
Humidity, non-operational storage and transportation	5% to 95% (non-condensing)
Atmospheric pressure, operational	660hPa (3,000 meters / 9,842 feet) to 1013hPa (0 meters / 0 feet)
Atmospheric pressure, non-operational and transportation	192hPa (12,000 meters / 39,370 feet) to 1020hPa (-50 meters / -164 feet)

Supported standards

HDMI version 1.4b compatible	✓
DVI 1.0 compatible (using HDMI to DVI-D adapter)	✓
EDID (Extended Display Identification Data) 1.3 and VESA E-EDID Standard Release A, Revision 1	✓
USB 2.0 compatible	✓
USB 3.0 compatible	✓
VESA DisplayPort Standard, version 1.1	✓

Notes and limitations

- While using a console display, certain limitations may occur (for example, poor image quality or black borders around the screen). Also, for the splash screen to appear properly, your DisplayPort monitor must support a resolution of 1280 × 720.

Appendix A – Firewall requirements

The following are the firewall requirements for your Maevox device and firmware updater.

Firmware updater and configuration utility

The following are the firewall requirements for a system running the Matrox Firmware Updater and Configuration Utility.

Network Port	Type	Inbound	Outbound	Functionality
20,21	TCP	—	✓	FTP: File upload
22*	TCP	✓	✓	SSH: Firmware update
80	TCP	—	✓	HTTP: Authentication and firmware update
443*	TCP	—	✓	HTTPS: Authentication and firmware update
1900*	UDP	✓	✓	UPnP: Microsoft SSDP for discovery of UPnP devices

* Minimum requirements.

Maevox 6020 devices

The following are the requirements for a network firewall present on a network with a Maevox environment.

Network Port	Type	Inbound	Outbound	Functionality
20,21	TCP	✓	—	FTP: File upload
22*	TCP	✓	✓	SSH: Firmware update
123	UDP	✓	✓	NTP: Network Time Protocol
161	UDP	✓	✓	SNMP: Network management (public community string)
443	TCP	—	✓	HTTPS: File transfer and upload
1900*	UDP	✓	✓	UPnP: Microsoft SSDP for discovery of UPnP devices
1935	TCP	—	✓	RTMP/RTMPS: Streaming

* Minimum requirements.

Adding rules to your Windows Firewall settings



Note: You may need administrator rights to modify your Windows Firewall settings. For more information, see Windows documentation or contact your system administrator.

You may need to add rules to your Windows Firewall settings. For more information on accessing and adding rules to your Windows Firewall settings, see your Windows documentation.

Appendix B – Providing adequate airflow to your Maevox device

Because your device disperses heat, it requires adequate airflow to ensure proper operation and to prevent damage. The following provides guidelines for effective airflow around your device.

- **Leave the proper amount of room around your device** – To prevent airflow restriction, we recommend allowing *at least* 0.75 inches (1.91 cm) of clearance around your device, and between the top of your device and anything above it. More space may be required depending on your environment.

When your device is resting on a plain surface, make sure your device is resting on the original rubber feet.

- **Operate your device in a well ventilated location** – Don't operate your device near a heat source or restrict airflow to your device (for example, by operating your device inside a desk cabinet).
- **Monitor your ambient temperatures** – Make sure the ambient temperature doesn't exceed the maximum recommended temperatures.

For more information on supported operating temperatures, see [“Environmental”](#), page 36.

Customer support

Matrox web

Our web site has product literature, press releases, technical material, a sales office list, trade show information, and other relevant material. Visit the Matrox Graphics web site at www.matrox.com/graphics.

View your warranty information

Matrox makes warranty information available on the Matrox site (www.matrox.com/graphics/en/support/warranty/).

View the third party software notices

Matrox makes third party software notices and/or additional terms and conditions available on the Matrox site (<https://thirdpartylicenses.matrox.com>).

Register your Matrox product

Please register online (www.matrox.com/graphics/en/registration) to be eligible for customer support, new product announcements, and information on special offers and upcoming events.

Hot surface Allow hot surfaces to cool before touching your Matrox unit.

Surface chaude Laissez refroidir les surfaces chaudes avant de toucher votre appareil Matrox.

Battery replacement The battery is non replaceable. To dispose of your product, see www.matrox.com/environment/weee.

Remplacement des piles La pile n'est pas remplaçable. Pour se défaire du produit, voir www.matrox.com/environment/weee.



USA

FCC Compliance Statement

Remark for the Matrox hardware products supported by this guide This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING Changes or modifications to this unit not expressly approved by the party responsible for the compliance could void the user's authority to operate this equipment. The use of shielded cables for connection of the monitor to the card is required to meet FCC requirements.

CANADA

(English) Innovation, Science and Economic Development Canada

Remark for the Matrox hardware products supported by this guide These digital apparatus does not exceed the Class A limits for radio noise emission from digital devices set out in the Radio Interference Regulation of Industry Canada.

(Français) Innovation, Sciences et Développement économique Canada

Remarque sur les produits matériels Matrox couverts par ce guide Ce présent appareil numérique n'émet aucun bruit radioélectrique dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par Industrie Canada.

JAPAN

VCCI Compliance Statement

Remark for the Matrox hardware products supported by this guide This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

KOREA

A 급 기기 (업무용 방송통신기자재)

이 기기는 업무용 (A 급) 전자파적합기기로서 판 매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

(English) European user's information – Declaration of Conformity



Remark for the Matrox hardware products supported by this guide These devices comply with EC Directive 2014/30/EU for a Class A digital device. They have been tested and found to comply with EN55032/CISPR32 and EN55024/CISPR24. In a domestic environment these products may cause radio interference in which case the user may be required to take adequate measures. To meet EC requirements, shielded cables must be used to connect the monitor and other peripherals to the card. These products have been tested in a typical class A compliant host system. It is assumed that these products will also achieve compliance in any class A compliant system.

(Français) Informations aux utilisateurs Européens – Déclaration de conformité

Remarque sur les produits matériels Matrox couverts par ce guide Ces unités sont conformes à la directive communautaire 2014/30/EU pour les unités numériques de classe A. Les tests effectués ont prouvé qu'elles sont conformes aux normes EN55032/CISPR32 et EN55024/CISPR24. Le fonctionnement de ces produits dans un environnement résidentiel peut causer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre les mesures appropriées. Pour respecter les impératifs communautaires, les câbles de connexion entre le moniteur ou autres périphériques et la carte doivent être blindés. Ces produits ont été testés dans un système hôte typique compatible classe A. On suppose qu'ils présenteront la même compatibilité dans tout système compatible classe A.

(Deutsch) Information für europäische Anwender – Konformitätserklärung

Anmerkung für die Matrox Hardware-Produktunterstützung durch dieses Handbuch Diese Geräte entsprechen EC Direktive 2014/30/EU für ein digitales Gerät Klasse A. Sie wurden getestet und entsprechen demnach EN55032/CISPR32 und EN55024/CISPR24. In einer Wohnumgebung können diese Produkte Funkinterferenzen erzeugen, und der Benutzer kann genötigt sein, entsprechende Maßnahmen zu ergreifen. Um EG-Anforderungen zu entsprechen, müssen zum Anschließen des Monitors und anderer Peripheriegeräte an die Karte abgeschirmte Kabel verwendet werden. Diese Produkte wurden in einem typischen, der Klasse A entsprechenden, Host-System getestet. Es wird davon ausgegangen, daß diese Produkte auch in jedem Klasse A entsprechenden System entsprechend funktionieren.

(Italiano) Informazioni per gli utenti europei – Dichiarazione di conformità

Nota per i prodotti hardware Matrox supportati da questa guida Questi dispositivi sono conformi alla direttiva CEE 2014/30/EU relativamente ai dispositivi digitali di Classe A. Sono stati provati e sono risultati conformi alle norme EN55032/CISPR32 e EN55024/CISPR24. In un ambiente domestico, questi prodotti possono causare radiointerferenze, nel qual caso all'utente potrebbe venire richiesto di prendere le misure adeguate. Per soddisfare i requisiti CEE, il monitor e le altre periferiche vanno collegati alla scheda grafica con cavi schermati. Questi prodotti sono stati provati in un tipico sistema host conforme alla classe A. Inoltre, si dà per scontato che questi prodotti acquisiranno la conformità in qualsiasi sistema conforme alla classe A.

(Español) Información para usuarios europeos – Declaración de conformidad

Observación referente a los productos de hardware de Matrox apoyados por este manual Estos dispositivos cumplen con la directiva de la CE 2014/30/EU para dispositivos digitales de Clase A. Dichos dispositivos han sido sometidos a prueba y se ha comprobado que cumplen con las normas EN55032/CISPR32 y EN55024/CISPR24. En entornos residenciales, estos productos pueden causar interferencias en las comunicaciones por radio; en tal caso el usuario deberá adoptar las medidas adecuadas. Para satisfacer las disposiciones de la CE, deberán utilizarse cables apantallados para conectar el monitor y demás periféricos a la tarjeta. Estos productos han sido sometidos a prueba en un típico sistema anfitrión que responde a los requisitos de la clase A. Se supone que estos productos cumplirán también con las normas en cualquier sistema que responda a los requisitos de la clase A.

(English) European user's information – Directive on Waste Electrical and Electronic Equipment (WEEE)



Please refer to the Matrox Web site (www.matrox.com/environment/en/weee) for recycling information.

(Français) Informations aux utilisateurs Européens – Règlementation des déchets d'équipements électriques et électroniques (DEEE)

Se référer au site Web de Matrox (www.matrox.com/environment/en/weee) pour l'information concernant le recyclage.

(Deutsch) Information für europäische Anwender – Europäische Regelungen zu Elektro- und Elektronikgeräten (WEEE)

Bitte wenden Sie sich an der Matrox-Website (www.matrox.com/environment/en/weee) für Recycling-Informationen.

(Italiano) Informazioni per gli utenti europei – Direttiva sui rifiuti di apparecchiature elettriche ed elettroniche (RAEE)

Si prega di riferirsi al sito Web Matrox (www.matrox.com/environment/en/weee) per le informazioni di riciclaggio.

FRANCE

Avertissement sur l'épilepsie

À lire avant toute utilisation d'un jeu vidéo par vous-même ou votre enfant Certaines personnes sont susceptibles de faire des crises d'épilepsie ou d'avoir des pertes de conscience à la vue de certains types de lumières clignotantes ou d'éléments fréquents dans notre environnement quotidien. Ces personnes s'exposent à des crises lorsqu'elles regardent certaines images télévisées ou qu'elles jouent à certains jeux vidéo. Ces phénomènes peuvent apparaître alors même que le sujet n'a pas d'antécédent médical ou n'a jamais été confronté à une crise d'épilepsie.

Si vous-même ou un membre de votre famille avez déjà présenté des symptômes liés à l'épilepsie (crise ou perte de conscience) en présence de stimulations lumineuses, veuillez consulter votre médecin avant toute utilisation.

Nous conseillons aux parents d'être attentifs à leurs enfants lorsqu'ils jouent avec des jeux vidéo. Si vous-même ou votre enfant présentez un des symptômes suivants: vertige, trouble de la vision, contraction des yeux ou des muscles, perte de conscience, trouble de l'orientation, mouvement involontaire ou convulsion, veuillez immédiatement cesser de jouer et consultez un médecin.

Précautions à prendre dans tous les cas pour l'utilisation d'un jeu vidéo Ne vous tenez pas trop près de l'écran.

- Jouez à bonne distance de l'écran de TV et aussi loin que le permet le cordon de raccordement.
- Utilisez de préférence les jeux de vidéo sur un écran de petite taille.
- Évitez de jouer si vous êtes fatigué ou si vous manquez de sommeil.
- Assurez-vous que vous jouez dans une pièce bien éclairée.
- En cours d'utilisation, faites des pauses de dix à quinze minutes toutes les heures.

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