# Contents

1 Matrox PowerStream Plus software ................................................................. 5  
  1.1 Before you begin .......................................................................................... 5  
  1.2 Installing your software ................................................................................. 6  
  1.3 Accessing Matrox PowerStream Plus ............................................................ 6  
  1.4 More information .......................................................................................... 7  

2 Getting started .................................................................................................. 8  
  2.1 Starting Matrox PowerStream Plus for the first time ....................................... 8  
  2.2 PowerStream Plus main interface .................................................................... 9  
  2.3 PowerStream Plus main menu ....................................................................... 10  
  2.4 PowerStream Plus basic functions .................................................................. 11  
  2.5 Understanding your Maevex environment ...................................................... 12  
  2.6 Understanding your Maevex devices ............................................................. 13  
  2.7 Opening the information dashboard ............................................................... 15  
  2.8 Understanding the status of your devices ....................................................... 16  

3 Adding devices to your environment ............................................................. 17  
  3.1 Network discovery ....................................................................................... 17  
  3.2 Manual device discovery .............................................................................. 18  

4 Managing users and passwords .................................................................... 19  
  4.1 Environment password .................................................................................. 19  
  4.2 Device password .......................................................................................... 19  
  4.3 Maevex 5100 Series .................................................................................... 19  
  4.4 Maevex 6100 Series .................................................................................... 20  

5 Encoding process overview ........................................................................... 24  

6 Maevex 6150 encoder settings ...................................................................... 25  
  6.1 Processing ...................................................................................................... 25  
  6.2 Network ......................................................................................................... 38  
  6.3 RS232 ............................................................................................................ 38  
  6.4 Date and time ............................................................................................... 40  
  6.5 Other ............................................................................................................ 40
7 Maevex 6120 encoder settings .............................................................. 42
  7.1 Processing ...................................................................................... 42
  7.2 Network ........................................................................................ 55
  7.3 RS232 .......................................................................................... 55
  7.4 Date and time ................................................................................ 57
  7.5 Other ............................................................................................. 57

8 Maevex 6100 encoder settings ............................................................ 59
  8.1 Processing ...................................................................................... 59
  8.2 Network ........................................................................................ 71
  8.3 Date and time ................................................................................ 72
  8.4 Other ............................................................................................. 72

9 Maevex 5150 encoder settings ............................................................ 73
  9.1 Processing ...................................................................................... 73
  9.2 Local output (for encoder) .............................................................. 79
  9.3 Network ........................................................................................ 82
  9.4 RS232 .......................................................................................... 83
  9.5 Date and time ................................................................................ 84

10 Maevex 5150 decoder settings .......................................................... 85
  10.1 Decoding ...................................................................................... 85
  10.2 Local output (for decoder) ............................................................ 88
  10.3 Network ...................................................................................... 90
  10.4 RS232 ......................................................................................... 91
  10.5 Date and time ................................................................................ 92
  10.6 Failsafe ......................................................................................... 92

11 Managing your configurations .......................................................... 94

12 Adjusting the date and time of your device ........................................ 96
  12.1 Setting the date and time .............................................................. 96
  12.2 Setting the time zone .................................................................... 97

13 Troubleshooting ................................................................................ 98
  13.1 What to do if you have a problem ............................................... 98
  13.2 Common problems and solutions ............................................... 98
14 Notes and limitations .................................................................................... 111
   14.1 General ........................................................................................................... 111
   14.2 Audio .............................................................................................................. 112
   14.3 Recording ........................................................................................................ 112
   14.4 Playback ......................................................................................................... 112
   14.5 Date and time ................................................................................................. 112
   14.6 Network .......................................................................................................... 112

15 Appendix – Firewall requirements ............................................................... 114
   15.1 PowerStream Plus software .......................................................................... 114
   15.2 Firmware updater .......................................................................................... 114
   15.3 Maevex devices ............................................................................................. 115
   15.4 Accessing your Windows Firewall settings .................................................. 115
   15.5 Adding rules to your Windows Firewall settings ........................................... 116

16 Customer support ......................................................................................... 118
   16.1 Matrox web ................................................................................................... 118
   16.2 Technical support .......................................................................................... 118
   16.3 Firmware package ......................................................................................... 118
   16.4 View your warranty information .................................................................... 118
   16.5 View the third party software notices ......................................................... 119
   16.6 Register your Matrox product ....................................................................... 119
1 Matrox PowerStream Plus software

Matrox PowerStream Plus software enables you to remotely control, manage, and configure your Maevex encoders and decoders from a controller system in your Maevex environment.

**Note:** This guide describes all Matrox PowerStream Plus features and controls. However, the support and availability of some of the Matrox features and controls detailed in this document depends on your product and software version.

1.1 Before you begin

To get the most out of your product:

- Make sure you connect your product *before* configuring PowerStream Plus software. For more information on the connection setup of your product, see the user guide for your Matrox hardware.
- Make sure all of your devices are using the latest version of the Matrox Maevex firmware.
- Install the latest version of Matrox PowerStream Plus software.
- You may need administrator rights to install or uninstall certain software. For more information, see Windows documentation or contact your system administrator.
- To assign an initial IP address to your encoders and decoders, a DHCP (Dynamic Host Configuration Protocol) server is required.
- **Windows Server 2019, Server 2016, and Server 2008 R2** – Make sure the SSDP Discovery service, network discovery, and file sharing options are enabled.

1.1.1 Software versions and mismatches

- Make sure all of your Maevex devices are using the latest version of the Maevex firmware. Also, all Maevex devices must use the *same version* of the firmware package.
- The version of your firmware package must match the version of your PowerStream Plus software package. If a mismatch is detected, your device won’t be detected.
1.1.2 Supported operating systems

Matrox PowerStream Plus supports the following operating systems:

- Windows® Server® 2019
- Windows® Server® 2016
- Windows® 10 (64-bit)
- Windows® 7
- Windows® Server® 2008 R2

1.1.3 Supported Matrox hardware

Matrox PowerStream Plus supports the following Matrox hardware:

- Maevex 6100 Series –
  - Maevex 6150 encoders
  - Maevex 6120 encoders
  - Maevex 6100 encoders
- Maevex 5100 Series –
  - Maevex 5150 encoders
  - Maevex 5150 decoders

1.1.4 Obtaining Matrox PowerStream Plus

Matrox makes the latest PowerStream Plus software available on the Matrox web site (www.matrox.com/maevexsw).

1.2 Installing your software

To install the software for your Maevex product, run the installation program for your software package. Follow the on-screen instructions.
1.3 Accessing Matrox PowerStream Plus

Windows 10/7 – To access the main interface of PowerStream Plus:

- Windows 10 – Click Start → All apps* → Matrox PowerStream Plus* → Matrox PowerStream Plus. (* Depending on your configuration of Windows, this part may not be necessary.)

- Windows 7 – Click Start → All Programs (or Programs) → Matrox PowerStream Plus* → Matrox PowerStream Plus. (* Depending on your version and configuration of Windows, this part may not be necessary.)

1.4 More information

This guide assumes your Matrox product is properly connected. For more information on the connection setup of your product, see the user guide for 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.
2 Getting started

This section describes the main menu and basic functions of Matrox PowerStream Plus software. It also provides an overview of your Maevex environment and devices.

2.1 Starting Matrox PowerStream Plus for the first time

Maevex 6100 Series only – When you install and start PowerStream Plus software for the first time, you’ll be asked if you’re a Maevex environment administrator.

- If you’re a Maevex environment administrator, click Yes. You’ll be prompted to enter your user name and device password.
- If you’re not a Maevex environment administrator, click No. Contact your Maevex environment administrator to obtain a user name and device password. Once you’ve obtained a user name and password, go to the main menu, click Log in, and enter that information.
2.2 PowerStream Plus main interface

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Main menu</td>
<td>The PowerStream Plus main menu contains options for managing users and passwords. For more information, see “2.3 - PowerStream Plus main menu”, page 12.</td>
</tr>
<tr>
<td>B</td>
<td>Device groups</td>
<td>The Maevex devices (encoders and decoders) in your Maevex environment depicted as colored tiles and sorted into groups. For more information, see “2.6 - Understanding your Maevex devices”, page 15.</td>
</tr>
<tr>
<td>C</td>
<td>Device tiles</td>
<td>The Maevex devices (encoders and decoders) in your Maevex environment depicted as colored tiles. For more information, see “2.6 - Understanding your Maevex devices”, page 15.</td>
</tr>
<tr>
<td>D</td>
<td>Information dashboard</td>
<td>The dashboard provides information for a device (such as the device type, serial number, firmware version, name, IP address, date, time, and status). For more information, see “2.7 - Opening the information dashboard”, page 17.</td>
</tr>
<tr>
<td>E</td>
<td>Device filtering</td>
<td>The devices are filtered by status, permissions, and type. For more information, see &quot;2.6.3 - Filtering your device tiles&quot;, page 17.</td>
</tr>
<tr>
<td>F</td>
<td>Basic functions</td>
<td>These buttons provide the basic functions for PowerStream Plus software. For more information, see &quot;2.4 - PowerStream Plus basic functions&quot;, page 13.</td>
</tr>
</tbody>
</table>
2.3 **PowerStream Plus main menu**

The main menu of PowerStream Plus contains the following options.

<table>
<thead>
<tr>
<th>Manual device discovery</th>
<th>PowerStream Plus automatically detects and adds new devices to your Maevex environment. If devices aren’t automatically detected, you can manually add devices to your Maevex environment. For more information, see &quot;3.2 - Manual device discovery&quot;, page 20.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maevex 5100 Series</td>
<td>• <strong>Change password</strong> – Change the password for your Maevex 5100 Series products. For more information, see &quot;4 - Managing users and passwords&quot;, page 19.</td>
</tr>
</tbody>
</table>
| Maevex 6100 Series      | • **Change password** – Change the password for your Maevex 6100 Series products. For more information, see "4 - Managing users and passwords", page 19.  
                          • **Log in/Log out** – Log into your Maevex device by entering the user type (local user or domain user), user name, and password for your Maevex 6100 Series device. For more information, see "4.4.4 - Logging in and out", page 21.  
                          • **Manage users** – Manage the users for your Maevex 6100 Series products. For more information, see "4.4.5 - Managing your Maevex 6100 Series users", page 22. |
| About                   | Provides information specific to your PowerStream Plus software (such as the version). |

2.3.1 **PowerStream Plus shortcut menu**

To access the shortcut menu, right-click your device tile. The menu items available will vary depending on your product and setup. The menu items include:

<table>
<thead>
<tr>
<th>Reboot</th>
<th>Click this to reboot your device. This keeps all of your device settings, including the IP address and password. After rebooting your device, allowed connections are restored.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-device settings</td>
<td>Select multiple device tiles of the same type (for example, only 5100 Series devices or only 6100 Series devices), then click this to see the settings for those devices.</td>
</tr>
<tr>
<td>Wake-on-LAN control</td>
<td><strong>6150/6120 encoder only</strong> – Click this to wake up your Maevex device if it’s asleep.</td>
</tr>
<tr>
<td>Open settings</td>
<td>Click this to see the settings for your device. This opens the last page accessed.</td>
</tr>
<tr>
<td>Remove lost devices</td>
<td>Click this to remove a device that’s listed as <strong>Lost</strong> (dark grey) or <strong>Undetected</strong> (black).</td>
</tr>
</tbody>
</table>
2.4 PowerStream Plus basic functions

The following buttons provide basic functions for managing your PowerStream Plus software.

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move to group</td>
<td>To create a new tile group, right-click a tile, select Move to group &gt; Create a new device group, then enter a new Name. The tile used to create the new group moves to that new group. For more information, see &quot;2.6.1 - Device groups&quot;, page 16.</td>
</tr>
<tr>
<td>Reboot</td>
<td>Click this to reboot your device. This keeps all of your device settings, including the IP address and password. After rebooting a device already encoding or decoding, the device automatically restarts that process.</td>
</tr>
<tr>
<td>Apply / Cancel</td>
<td>Click Apply for your changes to take effect. Click Cancel to discard any changes that weren’t applied.</td>
</tr>
<tr>
<td>Back</td>
<td>Click this to return to the Maevex environment.</td>
</tr>
<tr>
<td>Open settings</td>
<td>Click this to see the settings for your device. This opens the last page accessed.</td>
</tr>
<tr>
<td>Multi-device settings</td>
<td>Select multiple device tiles of the same type (for example, only 5100 Series devices or only 6100 Series devices), then click this to see the settings for those devices.</td>
</tr>
</tbody>
</table>

2.4.1 Modify settings

To modify the settings for multiple devices at the same time:

1. From the PowerStream Plus main interface, press the [Ctrl] key, select the tiles of the devices you want to modify, then click Multi-device settings. The device tiles you select must be of the same type.

2. Enable the Modify settings option.

3. Select your preferred device, then make your changes.

4. When you’re done, click Apply. This applies the settings from the preferred device to the other selected devices.
### 2.5 Understanding your Maevex environment

Matrox Maevex devices work together to provide unicast (one-to-one) or multicast (one-to-many) streaming over an IP network. Using Matrox PowerStream Plus software, you can manage your entire Maevex network from a single system.

A Matrox Maevex environment can be made up of the following elements connected to a network:

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>A video source connected to the input of an encoder. A controller system can be used as a source.</td>
</tr>
<tr>
<td>Maevex 6150 encoder</td>
<td>An encoder appliance that supports four (4) inputs and can generate multiple streams and recordings. An encoder can stream to one or more decoders.</td>
</tr>
<tr>
<td>Maevex 6120 encoder</td>
<td>An encoder appliance that supports two (2) inputs and can generate multiple streams and recordings. An encoder can stream to one or more decoders.</td>
</tr>
<tr>
<td>Maevex 6100 encoder</td>
<td>An encoder with multiple input support that can generate multiple streams and recordings. An encoder can stream to one or more decoders.</td>
</tr>
<tr>
<td>Maevex 5150 encoder</td>
<td>An encoder with single input support that can generate a single stream or recording. An encoder can stream to one or more decoders.</td>
</tr>
</tbody>
</table>
2.6 Understanding your Maevex devices

In PowerStream Plus, the Maevex devices (encoders and decoders) in your Maevex environment are depicted as colored tiles and sorted into groups.

**Maevex 5150 decoder**
A decoder is needed for each stream from an encoder in your environment.

**Third-party decoder**
Third-party video players (such as VideoLAN® VLC® media player) can also be used to decode the signal from an encoder.

**Recording location**
The location (such as a Network Attached Storage (NAS) device or a network shared folder) used by a Maevex encoder to record a file.

**Controller system**
A system connected to the network and running Matrox PowerStream Plus. A controller system can be used as a source and as a recording location.

<table>
<thead>
<tr>
<th>Maevex 5150 decoder</th>
<th>A decoder is needed for each stream from an encoder in your environment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third-party decoder</td>
<td>Third-party video players (such as VideoLAN® VLC® media player) can also be used to decode the signal from an encoder.</td>
</tr>
<tr>
<td>Recording location</td>
<td>The location (such as a Network Attached Storage (NAS) device or a network shared folder) used by a Maevex encoder to record a file.</td>
</tr>
<tr>
<td>Controller system</td>
<td>A system connected to the network and running Matrox PowerStream Plus. A controller system can be used as a source and as a recording location.</td>
</tr>
</tbody>
</table>
2.6.1 Device groups

When PowerStream Plus is started for the first time, or whenever a new device is detected, the device or devices are added to the New devices group. These devices can then be sorted into groups.

Managing your device groups

- To collapse or expand the tile list under a group, click the arrow ( / ).

- To create a new tile group, right-click a tile, select Move to group → Create a new device group, then enter a new Name. The tile used to create the new group moves to that new group.

- To reorder your groups, right-click next to the group name, then select a location for that group in the group list.

- To rename a group, click the group name, then enter a new name for the group.

- To remove a group, move all the tiles out of a group.

2.6.2 Device tiles

The tile provides the following information about your device.

| A | Device type identified by icon: |
|   | • 🎞 – Maevex 6150 quad encoder |
|   | • 🎞 – Maevex 6120 dual encoder |
|   | • 🎞 – Maevex 6100 quad encoder |
|   | • 🎞 – Maevex 5150 encoder |
|   | • 🎞 – Maevex 5150 decoder |

| B | Device serial number. |

| C | Device name, device serial number, or IP address, depending on the status of the Maevex device. |

| D | Device status (tile color and border color). For more information, see "2.8 - Understanding the status of your devices", page 18. |
2.6.3 Filtering your device tiles

You can filter your devices by status, permissions, and device type. The number at the top indicates the total number of devices. The number in the colored tiles indicate the number of devices with that status.

To filter your devices, click the appropriate tile. You can select multiple tiles to view devices with a different status. While filtering is in effect, at least one tile is highlighted.

2.7 Opening the information dashboard

To see the current status and information of a device, select the device, then click the ( ) at the bottom of the PowerStream Plus main interface. This opens an information dashboard.

The dashboard provides information for a device (such as the device type, serial number, firmware version, name, IP address, date, time, and status).

The dashboard also enables you to copy the addresses of your streams to the clipboard.
### 2.8 Understanding the status of your devices

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

<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active</strong> (Green)</td>
<td>Device is active and working properly.</td>
</tr>
<tr>
<td><strong>Unresponsive</strong> (Yellow)</td>
<td>Device is unresponsive.</td>
</tr>
<tr>
<td><strong>Error detected</strong> (Red)</td>
<td>Device has encountered an error. The status and information of the device can't be updated by PowerStream Plus. To fix this, try rebooting your device.</td>
</tr>
<tr>
<td><strong>Detected</strong> (Light grey)</td>
<td>Device is present on the network but not initialized. When a device is present on the network, the IP address appears on the tile.</td>
</tr>
<tr>
<td><strong>Lost</strong> (Dark grey)</td>
<td>Device was once detected, but can no longer be detected by PowerStream Plus. When a device is no longer detected, the tile lists the last known IP address of that device.</td>
</tr>
<tr>
<td><strong>Undetected</strong> (Black)</td>
<td>Device can't be detected by PowerStream Plus. When a device is no longer detected, the tile lists the last known IP address of that device.</td>
</tr>
</tbody>
</table>

Depending on the write accesses to a device, the color of the tile border changes:

<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>View only</strong> (Red border)</td>
<td>Device can be accessed, and the settings of the device can be viewed but not modified. To modify the settings, you need a valid password and user name, depending on your Maevex product. Maevex 5100 Series devices must all use the same password. Maevex 6100 Series devices must be configured with your user name and password. For more information, see &quot;4 - Managing your Maevex 5100 Series passwords&quot;, page 21.</td>
</tr>
<tr>
<td><strong>Unknown</strong> (Grey border)</td>
<td>Device can be accessed but no password was created. You're prompted for a password when you click Apply. Once a password is provided, the status becomes View only or Modify settings.</td>
</tr>
<tr>
<td><strong>Modify settings</strong> (Black border)</td>
<td>Device can be accessed and the settings can be modified. A valid password is provided.</td>
</tr>
</tbody>
</table>
3 Adding devices to your environment

PowerStream Plus automatically detects and adds new devices to your Maevex environment. If devices aren’t detected, PowerStream Plus can scan one or more specific IP addresses or a range of IP addresses for Maevex devices.

3.1 Network discovery

3.1.1 Dynamic IP addressing

PowerStream Plus automatically detects all the Maevex products in the same subnet as your controller system through the UPnP (Universal Plug and Play) protocol.

3.1.2 Static IP addressing

Once PowerStream Plus has detected an encoder or a decoder, you can manually assign a static IP address to your device through the Network settings of your Maevex product.

For more information on assigning a static IP address, contact your network administrator.
3.2 Manual device discovery

If PowerStream Plus doesn’t automatically detect the encoders and decoders on the same subnet as your controller system, you can add them manually.

3.2.1 Scanning one or more IP addresses


2. Select Scan a list of IP addresses, and then select the IP version to scan (IPv4 or IPv6).

3. Enter the IP address of the device you want to add.

4. Click Add to scan list.

5. Repeat steps 3 and 4 for all the addresses you want to add to the list.

6. When you’re done, click Scan list.

If a new device is found at an IP address provided, that device is added to the New devices group.

3.2.2 Scanning a range of IP addresses (IPv4 only)

| Note: This option is supported only with IPv4. |


2. Select Scan a range of IP addresses (IPv4 only).

3. Enter the starting and ending IP addresses of the range you want to scan.

4. Enter the subnet mask to use when scanning for IP addresses. For more information on the subnet mask to use, contact your network administrator.

5. Click Scan range. If the starting or ending addresses are invalid, the Scan range button is disabled.

If a new device is found, that device is added to the New devices group.
4 Managing users and passwords

In a Maevex environment, your Matrox PowerStream Plus software, Maevex encoder, and Maevex decoder use passwords for secure communication.

4.1 Environment password

A Maevex environment has a single password that allows PowerStream Plus to access the encoders and decoders in that environment.

When you start PowerStream Plus for the first time, you need to provide the environment password.

- In a new environment, the environment password is used for all the encoders and decoders detected by PowerStream Plus.
- In an established environment, use the password already entered for that environment.

4.2 Device password

Each device has a unique password. When a new encoder or decoder is added to the environment, the device password needs to be updated to match the environment password.

If the environment password doesn’t match a device password, that device is listed as View only. Also, you won’t be able to access the settings of that device.

4.3 Maevex 5100 Series

Note: Maevex 5100 Series – Passwords are case-sensitive and can be between 6 and 8 alphanumeric characters long.

To manage your Maevex 5150 encoder and decoder, PowerStream Plus uses two types of passwords: “Environment password” and “Device password”.

4.3.1 Changing your environment password

If an encoder or a decoder in your environment is listed as View only, you need to update the device password to the environment password. To change the password for one device, click the Change password icon in the upper margin of the device tile.
If all the encoders and decoders in your environment are listed as View only, you need to change your environment password. To change the password for all of your devices, open the Settings panel, then click Change password.

For active encoders and decoders, changing the environment password also updates the device password to the new environment password.

### 4.3.2 Changing your Maevex 5100 Series device password

If the status of a device is View only, you need to update its password to match the environment password.

To update a device password, select the device tile and click the Change password icon on the tile. If a device doesn't have a password (for example, new devices or devices reset to factory default), you must enable Update devices that have no password. If a device has a password, you need to enable Update devices that have an existing password and provide the current device password for the change to take effect.

After the device password is changed, the status of the device is updated to Modify settings. For more information, see “2.8 - Understanding the status of your devices”, page 16.

### 4.4 Maevex 6100 Series

Note: Maevex 6100 Series – Passwords are case-sensitive and must be at least 6 alphanumeric characters long.

To access or modify the settings of your Maevex 6150, 6120, or 6100 device, you need to define a user name for a device, and the device password for that user must match the password used in PowerStream Plus. Your Maevex environment administrator creates an environment password and assigns that password to the Maevex 6150, 6120, or 6100 devices. The Maevex environment administrator can then add users to a device and give them permissions for a given device.

Note: To obtain a user name and device password (or if you’ve forgotten your user name or device password) contact your Maevex environment administrator.
4.4.1 Adding local users

Local users are defined by the Maevex administrator and managed through PowerStream Plus.

To obtain a local user name and device password for a local user (or if you’ve forgotten your user name or device password), contact your Maevex administrator. To change your current password, see “4.4.3 - Changing your Maevex 6100 Series password”, page 21.

4.4.2 Adding domain users

Domain users are defined by your network administrator and managed through an Active Directory® network. Maevex software and hardware use Active Directory to authenticate the user name and password of domain users.

PowerStream Plus supports user groups. A domain user who’s also part of a user group is granted the highest privilege available (as a user group member or as an individual user). For more information, contact your network administrator.

To obtain a user name and password for a domain user (or if you’ve forgotten your domain user name or password), contact your network administrator.

4.4.3 Changing your Maevex 6100 Series password

Note: Maevex 6100 Series – Passwords are case-sensitive and must be at least 6 alphanumeric characters long.

If the status of a device is View only, you need to change the device password to match the environment password. To update a device password, click Change password from the PowerStream Plus main menu.

After the device password is changed, the status of the device is updated to Modify settings. For more information, see “2.8 - Understanding the status of your devices”, page 16.

4.4.4 Logging in and out

To modify the settings of your Maevex 6100 Series device, you need to log into PowerStream Plus:

1. From the PowerStream Plus main menu, click Log in.

2. Specify if you’re a Local user or a Domain user:
   - Local user – Enter your user name and password. For more information, see “4.4.1 - Adding local users”, page 21.
4.4.5 Managing your Maevex 6100 Series users

4.4.5.1 Adding yourself as a device administrator

To add yourself as an administrator to a device:

1. Click Manage users.
2. Select the devices to which to add yourself as an administrator, then click Add user.
3. When you’re done, click Apply.

4.4.5.2 Adding users

To add a user to a device:

1. Enter a New user name, then click Add user. Click Add user, then enter a user name. Specify if you’re adding a Local user or a Domain user.
2. When you’re done, click OK.
3. Click the Add ( + ) icon for each device you want to add a user to, then select the permissions (Administrator, Apply changes, Edit users, and Reboot devices) for each user.
4. Repeat step 1 to step 3 for each user you want to add.

3. When you’re done, click Apply.

To log out, click Log out from the main menu of PowerStream Plus.

- Domain user – Enter your user name, the domain name of the server, and your network password. For more information, see “4.4.2 - Adding domain users”, page 21.
5 When you’re done, click Apply. This creates a Summary of the users created and generates a device password.
   To copy the summary to the clipboard, click Copy to clipboard ( Ctrl+C ).
6 To close the dialog box, click OK.
7 Repeat step 2 to step 4 for each user you want to add.

4.4.5.3 Deleting users

To delete a user from a device:

1 Select the user you want to delete, then click Delete user.
2 When you’re done, click Apply.

4.4.5.4 Overwriting a password

To overwrite the existing password of a local user:

1 Select the user whose password you want to overwrite, then click Overwrite password.
2 Enter the new password, confirm the password entered, then click Change. (We recommend you take note of the new password.)
3 When you’re done, click Apply.
5 Encoding process overview

Maevex 6100 Series only – The following outlines the encoding process of your Maevex 6100 Series encoder.

<table>
<thead>
<tr>
<th></th>
<th>Inputs</th>
<th>Enable the input signal to be captured and used as a source.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Processing</td>
<td>Specify one or more inputs as a source that are encoded to output a stream or record a file. You can add or remove processes. An encoder must have at least one process.</td>
</tr>
<tr>
<td>3</td>
<td>Sources</td>
<td>Add one or more sources to be able to generate an encoding.</td>
</tr>
<tr>
<td>4</td>
<td>Encoding</td>
<td>Define how the source is encoded to create a stream or a recording. By default, an encoding is created to use one stream. You can add or remove encoding processes.</td>
</tr>
<tr>
<td>5</td>
<td>Stream</td>
<td>Configure the settings of a stream. An encoding must have at least one stream. You can add or remove streams with different protocols. Only one stream with a particular protocol is supported for each encoding. To have multiple streams with the same protocol, the streams must be the output of separate encodings. These encodings may be generated from the same processing.</td>
</tr>
<tr>
<td>6</td>
<td>Recording</td>
<td>Enable recording and specify a recording location (such as to a Network Attached Storage (NAS) device or a network shared folder). You can add or remove recordings.</td>
</tr>
</tbody>
</table>
6 Maevex 6150 encoder settings

This enables you to view, configure, and manage settings specific to a Maevex 6150 Quad encoder.

**Note:** Don’t change input or network connections while your Maevex device is turned on. If connections are changed while your Maevex device is turned on, your video sources or recordings will be lost.

### 6.1 Processing

#### 6.1.1 Inputs/Outputs

An input box contains the following information about the video and audio signal detected by your encoder.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Input number</td>
<td>Identifies the input (1, 2, 3, and 4).</td>
</tr>
<tr>
<td>B</td>
<td>Input name</td>
<td>Lists the name of the input, as specified by the user.</td>
</tr>
<tr>
<td>C</td>
<td>Video signal</td>
<td>Detects the resolution and refresh rate of the video signal. If no signal is detected, this reads as <em>(no video)</em>.</td>
</tr>
<tr>
<td>D</td>
<td>Audio signal</td>
<td>Detects the HDMI audio signal. If no signal is detected, this reads as <em>(no audio)</em>. If audio is disabled, this reads as <em>(audio disabled)</em>.</td>
</tr>
<tr>
<td>E</td>
<td>Status</td>
<td>Indicates if the input is enabled or disabled for capture.</td>
</tr>
<tr>
<td>F</td>
<td>Pixel format</td>
<td>Defines the quality of the image captured.</td>
</tr>
<tr>
<td>G</td>
<td>EDID pass through</td>
<td>Outputs the video and audio signals of your source directly to your monitor and audio output device.</td>
</tr>
<tr>
<td>H</td>
<td>Connection status</td>
<td>Detects if an analog audio device is connected. If no device is connected, this reads as <em>(no connection detected)</em>.</td>
</tr>
<tr>
<td>I</td>
<td>Sample rate</td>
<td>Lists the sample rate of the analog audio signal.</td>
</tr>
<tr>
<td>J</td>
<td>Volume</td>
<td>Detects the volume level of your device.</td>
</tr>
</tbody>
</table>
You can configure the following settings for your inputs and outputs.

<table>
<thead>
<tr>
<th>Enable input</th>
<th>To use an input as a source, you need to enable it. HDMI inputs are enabled by default.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign button</td>
<td>Assign a module (HDMI input, Streams, Local preview, or Recordings) to a button on your Maevex 6150 device (Button 1, Button 2, Button 3, or Button 4). Note: Before assigning a module, make sure that module is set to Enable. If you don’t want to assign a button, select None.</td>
</tr>
<tr>
<td>Input name</td>
<td>Enter a name for each input.</td>
</tr>
<tr>
<td>Pixel format</td>
<td>The pixel format defines the quality of the image captured. YUV refers to the color format used to receive each block of bits in the video signal. The format is followed by the pixel depth used for each color in the image format. A higher YUV format and pixel depth provides a higher quality image and requires more resources to process.</td>
</tr>
<tr>
<td>Expected audio quality</td>
<td>The audio quality expected for your stream after a signal loss. Note: When enabling this option, make sure to also select Continue streaming on signal loss for your stream (see “6.1.2 - Processing”, page 26).</td>
</tr>
<tr>
<td>Disable EDID pass through</td>
<td>Output the video and audio signals of your source directly to your monitor and audio output device. To disable this feature, enable the Disable EDID pass through option.</td>
</tr>
<tr>
<td>Sample format</td>
<td>Specify the sampling rate, in kHz, and bit depth for your analog audio device.</td>
</tr>
<tr>
<td>Gain</td>
<td>Increase or decrease the amplitude, in dB (decibels), of your microphone.</td>
</tr>
<tr>
<td>Volume</td>
<td>Increase or decrease the volume, in dB (decibels), of your headphones.</td>
</tr>
</tbody>
</table>

6.1.2 Processing

Note: To view and edit the settings of a processing module, click that module. The information appears on the right side of the panel.

Note: Depending on your configuration (for example, if you’re using a single source layout), certain settings may not be available.
Select a processing to configure its source.

<table>
<thead>
<tr>
<th><strong>Audio source</strong></th>
<th>The source of the audio signal to use.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layout</strong></td>
<td>The layout (picture in picture or picture by picture) and the number of sources to use.</td>
</tr>
<tr>
<td><strong>Synchronize frameloocked video input signal</strong></td>
<td>Enable this to maintain frame synchronization when compositing from multiple sources (inputs).</td>
</tr>
<tr>
<td><strong>Continue streaming on signal loss</strong></td>
<td>Enable this to make sure streaming isn’t interrupted if the source signal is switched or the connection to the device is lost. You can also set a background fill color for your composite layout. <strong>Note:</strong> When enabling this option, make sure to also select the <strong>Expected audio quality</strong> for your stream (see “6.1.1 - Inputs/Outputs”, page 25).</td>
</tr>
<tr>
<td><strong>Frame size</strong></td>
<td>The width and height, in pixels, of the source. If the layout of your sources uses a height or width that’s smaller than your frame size, black borders may appear on both sides, or on the top and bottom, of the frame. The width ranges from 64 to 4096 and must be a multiple of 16. The height ranges from 64 to 4096 and must be an even number.</td>
</tr>
<tr>
<td><strong>Frame rate</strong></td>
<td>The frame rate, in FPS (frames per second), for the source.</td>
</tr>
<tr>
<td><strong>Background color</strong></td>
<td>The background color for your source. If the layout of your sources uses less height or width than your frame size, the borders will use the background color. If no video is captured for your source, the background color is shown instead.</td>
</tr>
<tr>
<td><strong>Pixel format</strong></td>
<td>The pixel format to define the quality of your image, and the pixel depth for each color in the image format. A higher YUV format and pixel depth provides a higher quality image and requires more resources to process. Only certain pixel formats may be available.</td>
</tr>
</tbody>
</table>
6.1.3 Source

**Input**
Select the input to use for your source.

**Capture rate**
Select the frame rate for video capture. Reducing the frame rate also reduces the frame rate of the stream or recording.

**Scaling**
Select how to scale your video:
- **Unscaled from top left** – The video is unscaled and positioned in the top left corner of the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.
- **Unscaled centered** – The video is unscaled and centered in the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.
- **Stretched to all edges** – The video is stretched to fit the entire display area without respecting the aspect ratio of the original video. If the aspect ratio of the video and the display area don’t match, the video may be distorted.
- **Scaled to all edges** – The video is scaled to fit the entire display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area don’t match, the video will be cropped.
- **Scaled to nearest edge** – The video is scaled to fit the display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area, black borders will appear on both sides of the video or above and below. The video isn’t cropped.

*Note:* Depending on your configuration (for example, if you’re using a single source layout), certain settings may not be available.
### 6.1.4 Encodings

These settings determine how your processor encodes, transmits, or records the video and audio signals.

<table>
<thead>
<tr>
<th>Pivot</th>
<th>Change the orientation of your source:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>0 degrees</strong> – No pivot is applied.</td>
<td></td>
</tr>
<tr>
<td>• <strong>90 degrees clockwise</strong> – The source is rotated 90 degrees clockwise.</td>
<td></td>
</tr>
<tr>
<td>• <strong>180 degrees</strong> – The source is rotated 180 degrees.</td>
<td></td>
</tr>
<tr>
<td>• <strong>90 degrees counterclockwise</strong> – The source is rotated 90 degrees counterclockwise.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flip</th>
<th>Select the plane along which the source is flipped:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>None</strong> – No flip is applied.</td>
<td></td>
</tr>
<tr>
<td>• <strong>Vertically</strong> – The source is flipped along the vertical plane. The top becomes the bottom.</td>
<td></td>
</tr>
<tr>
<td>• <strong>Horizontally</strong> – The source is flipped along the horizontal plane. The right side becomes the left.</td>
<td></td>
</tr>
<tr>
<td>• <strong>On both axes</strong> – The source is flipped along the vertical plane and the horizontal plane. This is visually similar to rotating 180 degrees.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opacity</th>
<th>Increase or decrease how opaque the source video appears. The default is 100%.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Brightness</th>
<th>Increase or decrease how light or dark the colors appear. The default is 500.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Contrast</th>
<th>Change the difference in brightness between the lightest and darkest colors. The default is 500.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Hue</th>
<th>Increase or decrease the tint or tone of colors. The default is 0.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Saturation</th>
<th>Increase or decrease the depth of the colors. The default is 500.</th>
</tr>
</thead>
</table>
6.1.4.1 Adding an encoding

To add an encoding:

- **Custom encoding** – Click the **Add** (añadir) icon, then click **To Custom**. Enter the information for the selected protocol. The default is **RTMP**.

- **Content delivery network (CDN)** – Click the **Add** (añadir) icon, then click a preset (Facebook Live, YouTube, Restream, Twitch, LiveScale, IBM Video Streaming, Vimeo, or Wowza Cloud). Enter the information for the selected protocol.

6.1.4.2 Include

Select the signals to include (Audio only, Video only, or Audio and video) in your encoding.

6.1.4.3 Force encoding size

Enable this to have PowerStream Plus increase or reduce the captured video size before it’s encoded.

<table>
<thead>
<tr>
<th>Frame size</th>
<th>Specify the width and height, in pixels, of the video up to the width and height of the original video input. If your video source uses a different size, your encoder scales the video to the specified size (image may be distorted). The width ranges from 64 to 4096 and must be a multiple of 16. The height ranges from 64 to 4096 and must be an even number.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Scaling</th>
<th>Select how to scale your video:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unscaled from top left</strong> – The video is unscaled and positioned in the top left corner of the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.</td>
<td></td>
</tr>
<tr>
<td><strong>Unscaled centered</strong> – The video is unscaled and centered in the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.</td>
<td></td>
</tr>
<tr>
<td><strong>Stretched to all edges</strong> – The video is stretched to fit the entire display area without respecting the aspect ratio of the original video. If the aspect ratio of the video and the display area don’t match, the video may be distorted.</td>
<td></td>
</tr>
<tr>
<td><strong>Scaled to all edges</strong> – The video is scaled to fit the entire display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area don’t match, the video will be cropped.</td>
<td></td>
</tr>
<tr>
<td><strong>Scaled to nearest edge</strong> – The video is scaled to fit to the display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area, black borders will appear on both sides of the video or above and below. The video isn’t cropped.</td>
<td></td>
</tr>
</tbody>
</table>
6.1.4.4 Force pixel format

The pixel format defines the quality of the image encoded. YUV refers to the color format used to receive each block of bits in the video signal. The format is followed by the pixel depth used for each color in the image format. A higher YUV format and pixel depth provides a higher quality image and requires more resources to process.

6.1.4.5 Encoding profile

<table>
<thead>
<tr>
<th>Encoding profile</th>
<th>Select an encoding profile for your signal. Changing the encoding profile may prevent your decoder from streaming. Select one of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>• Main • High • High, 10-bit • High, YUV 4:2:2 • High, YUV 4:4:4 Predictive • High, YUV 4:4:4 CAVLC + Intra</td>
</tr>
<tr>
<td>Target bit rate</td>
<td>The target bit rate, in Mb/s (Megabits per second), for encoding. The actual bandwidth used by your encoder varies according to your source and encoding method. The default is 15 Mb/s. A lower target bit rate may result in lower image quality. A higher target bit rate limit may result in lower performance, a higher bandwidth when streamed, and a larger file size when recorded.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pivot</th>
<th>Change the orientation of your source:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 degrees</td>
<td>No pivot is applied.</td>
</tr>
<tr>
<td>90 degrees clockwise</td>
<td>The source is rotated 90 degrees clockwise.</td>
</tr>
<tr>
<td>180 degrees</td>
<td>The source is rotated 180 degrees.</td>
</tr>
<tr>
<td>90 degrees counterclockwise</td>
<td>The source is rotated 90 degrees counterclockwise.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flip</th>
<th>Select the plane along which the source is flipped:</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>No flip is applied.</td>
</tr>
<tr>
<td>Vertically</td>
<td>The source is flipped along the vertical plane. The top becomes the bottom.</td>
</tr>
<tr>
<td>Horizontally</td>
<td>The source is flipped along the horizontal plane. The right side becomes the left.</td>
</tr>
<tr>
<td>On both axes</td>
<td>The source is flipped along the vertical plane and the horizontal plane. This is visually similar to rotating 180 degrees.</td>
</tr>
</tbody>
</table>
6.1.4.6 Encoding mode

<table>
<thead>
<tr>
<th>Bit rate control</th>
<th>Select one of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Use a variable bit rate</td>
</tr>
<tr>
<td></td>
<td>• Use a constant bit rate</td>
</tr>
</tbody>
</table>

| Maximum bit rate               | The maximum bit rate for encoding. When encoding, the processor attempts to use the target bit rate but may use up to the maximum bit rate specified. The default is 22.5 Mb/s. The maximum bit rate is 120 Mb/s. |

| Estimated H.264 level           | The estimated level of support for a profile required from the decoder. |

| Quantization parameters         | The range used to compress the various frames in your GOP. A high maximum increases the level of compression of the frame and should decrease the bit rate but may decrease the image quality. |

6.1.4.7 Force CAVLC entropy encoding

Enable this to force the use of context adaptive variable length coding (CAVLC) entropy encoding. Enabling this option overrides the default entropy encoding selection (CABAC).

6.1.4.8 Group of pictures (GOP)

<table>
<thead>
<tr>
<th>GOP length</th>
<th>The number of frames from one complete frame (I-frame) to another. A higher GOP length increases the compression level but may result in a lower quality image. The default is 90.</th>
</tr>
</thead>
</table>

| Insert P-frames every X frames | Enter the number of frames before a P-frame is inserted. All other frames are B-frames. A higher number of frames before inserting a P-frame increases the quality of the image but may result in a loss of performance. The minimum and default value is 1. The maximum value is 4. |
6.1.5 Audio

<table>
<thead>
<tr>
<th>Bit rate</th>
<th>Select the audio bit rate, in kbps, for your audio transmission. A higher bit rate produces a sound quality closer to the source quality, but requires more bandwidth. The value ranges from 32 to 576. The default is 128.</th>
</tr>
</thead>
</table>
| AAC encoder | Select one of the following:  
  - AAC LC – Allowed bit rate range is 32 to 576 kbps.  
  - AAC HEv1 – Allowed bit rate range is 32 to 288 kbps.  
  - AAC HEv2 – Allowed bit rate range is 32 to 144 kbps. |
| AAC quality | Force the use of encoding complexity (low to high) to improve the quality of compressed audio. Adjusting these settings doesn’t affect the audio sample rate, target bit rate, or latency.  
  - Low  
  - Medium  
  - High |
| Use temporal noise shaping | This reshapes the quantization noise over time to improve the quality of the audio signal. This option is enabled by default. |
| AAC format | Select one of the following:  
  - ADTS  
  - No container format |

6.1.6 Streams

To add a stream (RTP, RTMP, RTSP, SRT, MPEG-2 TS, or HLS), click the Add ( + ) icon.

Note: If you configured your encoder to use IPv4 and IPv6, you must enable one stream for IPv4 and one stream for IPv6.
**Note:** To receive an RTP stream, you need to create an SDP file. For more information, contact Matrox Technical Support.

**Note:** When applying settings to multiple devices, make sure static IP addresses and multicast addresses aren’t being duplicated. For more information, contact your network administrator.

**Note:** Depending on the stream selected, certain options aren’t available.

<table>
<thead>
<tr>
<th>Enable stream</th>
<th>Enable or disable your stream.</th>
</tr>
</thead>
</table>
| Assign button | Assign a module (HDMI input, Streams, Local preview, or Recordings) to a button on your Maevex 6150 device (Button 1, Button 2, Button 3, or Button 4).  
**Note:** Before assigning a module, make sure it’s set to Enable. If you don’t want to assign a button, select None. |
| Stream address | RTSP only – The URL (or stream address) of your RTSP stream. |
| Base port | The port number used to transmit your stream. |
| Destination location | RTMP only – The path of your RTMP stream. |
| Playlist file name | HLS only – Enter the name of your playlist file. |
| Name | Enter a name for your stream. |
| Network interface | The network interface (LAN1 or LAN2) to use for the stream. To use the first IP address the device finds, select Automatic IPv4 to use an IPv4 address or Automatic IPv6 to use an IPv6 address. |
| Encoding ladder configuration | HLS only – Select how to configure the encoding ladder:  
- **Manual** – Specify the bit rate and FPS (frames per second) decimation, then select the ladder to Enable for the HLS stream. To show resolutions that are automatically generated, enable **Show auto-generated resolutions from video signal**.  
- **Automatic** – Specify the **Number of steps** (1 to 6, with 1 being the highest bit rate) in the encoding ladder. |
| RTSP port | RTSP only – The RTSP port number used to transmit your stream. |
| Stream name/key | RTMP and RTSP only – Enter a suffix as part of your stream address. If you’re using a media player to decode your stream, the media player may require this as part of the stream address to connect to a stream. |
| Use authentication | RTMP and RTSP only – Enable this if you’re using an authentication server, then enter your credentials (**User name** and **Password**). |
6.1.7 Recordings

Use this option to record your video files on a network attached storage (NAS) device or an external storage device. The video files created are encoded with an H.264 video and AAC audio codec.

**Encryption**
- SRT only – The encryption level to secure your stream. Options include: **Unencrypted**, AES-128, AES-192, or AES-256.

**Passphrase**
- The passphrase used to generate the encryption key. We recommend a passphrase length of 16 characters (AES-128), 24 characters (AES-192), and 32 characters (AES-256). If **Unencrypted** is selected, there’s no passphrase to enter.

**Connection type**
- SRT only – Run SRT in **Caller**, **Listener**, or **Rendezvous** mode.

**Latency**
- SRT only – The target latency, in milliseconds (ms), for transmission. The default is 40 ms.

**Time to live (TTL)**
- The number of hops or network nodes (such as network switches or routers) through which a multicast signal can travel. Once the TTL number is reached, the receiving network node prevents the signal broadcast further down the network. The value ranges from 1 to 255. The default is 16.

**Routing scheme**
- **Unicast** – When selecting unicast, you need to specify the destination IP address of the stream. You can enter a valid IP address or host name.
- **Multicast** – Enter a **Multicast address**. Using multicast may require additional network configuration to support the transmission protocol (some network switches and routers can block multicast signals). For more information, contact your network administrator. To also allow unicast connections, enable the **Allow unicast connections** option.

**Note:** When starting a recording manually or through a scheduled recording, it may take a few seconds for your encoder to actually record video. When scheduling a recording, we recommend you start the recording earlier than the actual time required.
Enable recording

Enable this to be able to record from your device.

If Scheduled recording is enabled, this option isn’t available.

Assign button

Assign a module (HDMI input, Streams, Local preview, or Recordings) to a button on your Maevex 6150 device (Button 1, Button 2, Button 3, or Button 4).

Note: Before assigning a module, make sure it’s set to Enable.

If you don’t want to assign a button, select None.

File name prefix

The video file name is made up of two parts:

- First part – The name, which you enter.
- Second part – The timestamp of when the video file started, which your encoder defines.

The resulting file name is Prefix[YYYY-MM-DD_HH-MM-SS].mp4, where YYYY is the year, MM the month, DD the day, HH the hour (in a 24-hour format), MM the minutes, and SS the seconds.

A file name prefix can be up to 19 characters long.

File format

Select the format for your recording (MP4 or MOV).

To use fragmented MP4, enable the Use fragmented MP4 (fMP4) option. This option ensures your recorded file won’t be corrupted in the event your network connection is disrupted.

Maximum file block duration

Enter the recording time for each video file recorded. Once the recording time for a file is reached, PowerStream Plus creates a new file. A file can hold up to 8 hours of recording.

If the sampling rate (audio or video) changes, a new file is created, regardless of the file duration.
6.1.7.6 Recording location

Under **Record to**, provide the path to the existing network shared folder or select the external storage device where your video files will be stored.

*Note:* To make sure the network path is properly recognized by your device, we recommend you provide the full computer name or the IP address of the system where the shared folder is located. The full computer name is part of the Windows properties of the system. For example, the full computer name of networkserver may be `networkserver.domain.com`. For more information, contact your network administrator.

6.1.7.6.1 Add network shared folder

Enter the path to the existing network shared folder, then select how to connect to the shared folder:

- **Connect as guest** – If your network drive doesn’t require user identification, use this. When you’re done, click **OK**.
- **Connect with credentials** – If your network drive requires user identification, enter a **User name** and **Password**. When you’re done, click **OK**.

6.1.7.6.2 Manage network shared folders

Use this to review your list of credentials, and to remove user names and passwords that are no longer required.

6.1.7.6.3 Eject device

To safely remove an external storage device from your system, select the device you want to remove, then click the **Eject (⏏)** button.

6.1.7.7 Scheduled recording

Enable this to schedule a date, time, and duration for your encoder to record a video file.

<table>
<thead>
<tr>
<th>Start recording at</th>
<th>Enter the date and time to start recording.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop recording at</td>
<td>Enter the date and time to stop recording.</td>
</tr>
</tbody>
</table>
6.2 Network

This contains the network settings for the connection and IP address of your encoder.

6.2.1 Configuration

Select if you want to configure your device to support IPv4, IPv6, or IPv4 and IPv6.

6.2.2 IP address

Select how to assign an IP address to your encoder.

By default, Dynamic IP address (DHCP) is used. For information on manually assigning a Static IP address, see "3.1 - Network discovery", page 17.

6.3 RS232

Enable this to virtualize an RS232 (or serial) connection.
6.3.1 Enabling RS232 virtualization

To enable RS232 virtualization, select the type of RS232 connection to use.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>Disable RS232 to close the TCP port used for virtualization.</td>
</tr>
<tr>
<td>Relayed serial over IP</td>
<td>In a relayed connection, the RS232 controller must be connected to your encoder to send commands to an RS232 device that’s connected to a decoder. The RS232 connection is independent of any other connection between an encoder and a decoder. When using this option, the RS232 settings of your encoder are sent to the decoder. To establish a relayed connection, the encoder and the decoder must both use Relayed serial over IP.</td>
</tr>
<tr>
<td>Direct serial over IP</td>
<td>In a direct connection, an RS232 controller can send commands directly to the RS232 device connected to your encoder. The RS232 controller isn’t physically connected to a device. Any encoder that uses direct serial over IP receives the RS232 commands through an opened TCP port (for example, from a telnet session) and sends these commands to the RS232 device connected to it.</td>
</tr>
<tr>
<td>Local control</td>
<td>Select this to add local encoder device control through the RS232 interface.</td>
</tr>
</tbody>
</table>

6.3.2 Configuring RS232

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select decoder</td>
<td>If Relayed serial over IP is selected, select the decoder that’s connected to the RS232 device you want to communicate with. The RS232 connection is virtualized only between your encoder and this decoder. This setting isn’t available if Direct serial over IP is selected.</td>
</tr>
<tr>
<td>TCP port</td>
<td>If Direct serial over IP is selected, select which port will receive the RS232 commands. (Make sure the port number is available and not used by another service on your network.) The default is 11999. This setting isn’t available if Relayed serial over IP is selected.</td>
</tr>
</tbody>
</table>
6.4 Date and time

Use this to update the date, time, and time zone of your Maevex device. For more information on these settings, see “12 - Adjusting the date and time of your device”, page 96.

6.5 Other

| RS232 settings | If Relayed serial over IP is selected, the following settings are used by the encoder and the selected decoder.  
If Direct serial over IP is selected, the following settings are used only for the device connected to your encoder.  
- **Baud rate** – The speed, in bits per seconds (or baud), used for the RS232 connection. The default is 115200.  
- **Data bits** – The number of bits per block of data transmitted. The default is 8.  
- **Parity** – The type of parity bits (None, Odd, or Even) used for the data transmitted. The default is None.  
- **Stop bits** – The number of bits used to identify the end of a data block. The default is 1.  
- **Flow control** – The signal type (None or RTS/CTS) used to pause and resume data transmission. The default is None. |

| Local preview | To preview your sources on your console display, enable the **Enable local preview of input** option, then select a **Video source**:
- **Input** – Input stream appears full-screen.
- **Tile** – Input streams appear as a tile view.
- **Cycle** – Input streams cycle. Specify the **Cycle duration**, in seconds.
To assign the local preview to a button on your Maevex 6150 device (**Button 1**, **Button 2**, **Button 3**, or **Button 4**). If you don’t want to assign a button, select None. If the option is enabled, select an **Audio source** from the list. If no input is available, None appears. |

| Power recovery policy | Set up your Maevex device to start up after a power loss.
- **Never start** – Never start your Maevex device after a power loss.
- **Always start** – Always start your Maevex device after a power loss.
- **Restore last state** – Always start and restore the last state of your Maevex device after a power loss. |

<p>| Power button control | To prevent your device from shutting down, enable the <strong>Disable shutdown</strong> option. |</p>
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recording control</strong></td>
<td>To disable the recording module for a specific Maevex device, enable the <strong>Disable recording</strong> option. Your device will reboot for this change to take effect.</td>
</tr>
<tr>
<td><strong>Reboot control</strong></td>
<td>To remotely force a reboot of your device if it stops responding, enable the <strong>Enable force reboot</strong> option.</td>
</tr>
<tr>
<td><strong>Wake-on-LAN control</strong></td>
<td>6150/6120 encoder only – To remotely wake up a Maevex device if it’s asleep or turns off, enable the <strong>Enable Wake-on-LAN</strong> option.</td>
</tr>
<tr>
<td><strong>DNS update</strong></td>
<td>To update your DNS (Domain Name System) to use a friendly name instead of the device serial number, enable the <strong>Update DNS with friendly name</strong> option.</td>
</tr>
</tbody>
</table>
| **Logs**                | • **Download device logs** – Download the log files. This file contains information on your Maevex devices. This information is useful for troubleshooting purposes.  
                          | • **Erase device logs** – Erase the log files created for your Maevex devices.                                                        |
| **Audits**              | Download the audit file. When you click **Download device audits**, you’ll be prompted to enter a password. The password entered encrypts the audit file.  
                          | This file contains information on the user interactions with your Maevex devices. This information is used by your Maevex environment administrator. |
| **Troubleshooting**     | • **Audio** – To disable the audio on all of your Maevex 6100 Series devices, enable the **Disable audio** option. Your device will reboot for this change to take effect.  
                          | • **Debug configurations** – Get help and troubleshooting information for your configuration. For more information, contact Matrox Technical Support. |
7 Maevex 6120 encoder settings

This enables you to view, configure, and manage settings specific to a Maevex 6120 Dual encoder.

Note: Don’t change input or network connections while your Maevex device is turned on. If connections are changed while your Maevex device is turned on, your video sources or recordings will be lost.

7.1 Processing

7.1.1 Inputs/Outputs

An input box contains the following information about the video and audio signal detected by your encoder.

| A | Input number | Identifies the input (1 and 2). |
| B | Input name   | Lists the name of the input, as specified by the user. |
| C | Video signal | Detects the resolution and refresh rate of the video signal. If no signal is detected, this reads as (no video). |
| D | Audio signal | Detects the HDMI audio signal. If no signal is detected, this reads as (no audio). If audio is disabled, this reads as (audio disabled). |
| E | Status       | Indicates if the input is enabled or disabled for capture. |
| F | Pixel format | Defines the quality of the image captured. |
| G | EDID pass through | Outputs the video and audio signals of your source directly to your monitor and audio output device. |
| H | Connection status | Detects if an analog audio device is connected. If no device is connected, this reads as (no connection detected). |
| I | Sample rate  | Lists the sample rate of the analog audio signal. |
| J | Volume       | Detects the volume level of your device. |
You can configure the following settings for your inputs and outputs.

<table>
<thead>
<tr>
<th>Enable input</th>
<th>To use an input as a source, you need to enable it. HDMI inputs are enabled by default.</th>
</tr>
</thead>
</table>
| Assign button | Assign a module (HDMI input, Streams, or Recordings) to a button on your Maevex 6120 device (Button 1, Button 2, Button 3, or Button 4).  
  **Note:** Before assigning a module, make sure that module is set to **Enable**.  
  If you don’t want to assign a button, select **None**. |
| Input name | Enter a name for each input. |
| Pixel format | The pixel format defines the quality of the image captured. YUV refers to the color format used to receive each block of bits in the video signal. The format is followed by the pixel depth used for each color in the image format. A higher YUV format and pixel depth provides a higher quality image and requires more resources to process. |
| Expected audio quality | The audio quality expected for your stream.  
  **Note:** When enabling this option, make sure to also select **Continue streaming on signal loss** for your stream (see “7.1.2 - Processing”, page 43). |
| Disable EDID pass through | Output the video and audio signals of your source directly to your monitor and audio output device. To disable this feature, enable the **Disable EDID pass through** option. |
| Sample format | Specify the sampling rate, in kHz, and bit depth for your analog audio device. |
| Gain | Increase or decrease the amplitude, in dB (decibels), of your microphone. |
| Volume | Increase or decrease the volume, in dB (decibels), of your headphones. |

### 7.1.2 Processing

- **Note:** To view and edit the settings of a processing module, click that module. The information appears on the right side of the panel.

- **Note:** Depending on your configuration (for example, if you’re using a single source layout), certain settings may not be available.
Select a processing to configure its source.

<table>
<thead>
<tr>
<th>Audio source</th>
<th>The source of the audio signal to use.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layout</td>
<td>The layout (picture in picture or picture by picture) and the number of sources to use.</td>
</tr>
<tr>
<td>Synchronize framelocked video input signal</td>
<td>Enable this to maintain frame synchronization when compositing from multiple sources (inputs).</td>
</tr>
<tr>
<td>Continue streaming on signal loss</td>
<td>Enable this to make sure streaming isn’t interrupted if the source signal is switched or the connection to the device is lost. You can also set a background fill color for your composite layout. <strong>Note:</strong> When enabling this option, make sure to also select <strong>Expected audio quality</strong> for your stream (see “7.1.1 - Inputs/Outputs”, page 42).</td>
</tr>
<tr>
<td>Frame size</td>
<td>The width and height, in pixels, of the source. If the layout of your sources uses a height or width that’s smaller than your frame size, black borders may appear on both sides, or on the top and bottom, of the frame. The width ranges from 64 to 4096 and must be a multiple of 16. The height ranges from 64 to 4096 and must be an even number.</td>
</tr>
<tr>
<td>Frame rate</td>
<td>The frame rate, in FPS (frames per second), for the source.</td>
</tr>
<tr>
<td>Background color</td>
<td>The background color for your source. If the layout of your sources uses less height or width than your frame size, the borders will use the background color. If no video is captured for your source, the background color is shown instead.</td>
</tr>
<tr>
<td>Pixel format</td>
<td>The pixel format to define the quality of your image, and the pixel depth for each color in the image format. A higher YUV format and pixel depth provides a higher quality image and requires more resources to process. Only certain pixel formats may be available.</td>
</tr>
</tbody>
</table>
7.1.3 Source

![Diagram of PowerStream Plus User Guide](image)

**Note:** Depending on your configuration (for example, if you’re using a single source layout), certain settings may not be available.

<table>
<thead>
<tr>
<th>Input</th>
<th>Select the input to use for your source.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture rate</td>
<td>Select the frame rate for video capture. Reducing the frame rate also reduces the frame rate of the stream or recording.</td>
</tr>
</tbody>
</table>

**Scaling**

Select how to scale your video:

- **Unscaled from top left** – The video is unscaled and positioned in the top left corner of the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.

- **Unscaled centered** – The video is unscaled and centered in the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.

- **Stretched to all edges** – The video is stretched to fit the entire display area without respecting the aspect ratio of the original video. If the aspect ratio of the video and the display area don’t match, the video may be distorted.

- **Scaled to all edges** – The video is scaled to fit the entire display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area don’t match, the video will be cropped.

- **Scaled to nearest edge** – The video is scaled to fit to the display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area, black borders will appear on both sides of the video or above and below. The video isn’t cropped.
### 7.1.4 Encodings

These settings determine how your processor encodes, transmits, or records the video and audio signals.

<table>
<thead>
<tr>
<th>Pivot</th>
<th>Change the orientation of your source:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 degrees</td>
<td>No pivot is applied.</td>
</tr>
<tr>
<td>90 degrees clockwise</td>
<td>The source is rotated 90 degrees clockwise.</td>
</tr>
<tr>
<td>180 degrees</td>
<td>The source is rotated 180 degrees.</td>
</tr>
<tr>
<td>90 degrees counterclockwise</td>
<td>The source is rotated 90 degrees counterclockwise.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flip</th>
<th>Select the plane along which the source is flipped:</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>No flip is applied.</td>
</tr>
<tr>
<td>Vertically</td>
<td>The source is flipped along the vertical plane. The top becomes the bottom.</td>
</tr>
<tr>
<td>Horizontally</td>
<td>The source is flipped along the horizontal plane. The right side becomes the left.</td>
</tr>
<tr>
<td>On both axes</td>
<td>The source is flipped along the vertical plane and the horizontal plane. This is visually similar to rotating 180 degrees.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opacity</th>
<th>Increase or decrease how opaque the source video appears. The default is 100%.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brightness</td>
<td>Increase or decrease how light or dark the colors appear. The default is 500.</td>
</tr>
<tr>
<td>Contrast</td>
<td>Change the difference in brightness between the lightest and darkest colors. The default is 500.</td>
</tr>
<tr>
<td>Hue</td>
<td>Increase or decrease the tint or tone of colors. The default is 0.</td>
</tr>
<tr>
<td>Saturation</td>
<td>Increase or decrease the depth of the colors. The default is 500.</td>
</tr>
</tbody>
</table>
7.1.4.1 Adding an encoding

To add an encoding:

- **Custom encoding** – Click the Add ( ) icon, then click To Custom. Enter the information for the selected protocol. The default is RTMP.
- **Content delivery network (CDN)** – Click the Add ( ) icon, then click a preset (Facebook Live, YouTube, Restream, Twitch, LiveScale, IBM Video Streaming, Vimeo, or Wowza Cloud). Enter the information for the selected protocol.

7.1.4.2 Include

Select the signals to include (Audio only, Video only, or Audio and video) in your encoding.

7.1.4.3 Force encoding size

Enable this to have PowerStream Plus increase or reduce the captured video size before it's encoded.

<table>
<thead>
<tr>
<th>Frame size</th>
<th>Specify the width and height, in pixels, of the video up to the width and height of the original video input. If your video source uses a different size, your encoder scales the video to the specified size (image may be distorted). The width ranges from 64 to 4096 and must be a multiple of 16. The height ranges from 64 to 4096 and must be an even number.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaling</td>
<td>Select how to scale your video:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Unscaled from top left</strong> – The video is unscaled and positioned in the top left corner of the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Unscaled centered</strong> – The video is unscaled and centered in the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Stretched to all edges</strong> – The video is stretched to fit the entire display area without respecting the aspect ratio of the original video. If the aspect ratio of the video and the display area don’t match, the video may be distorted.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Scaled to all edges</strong> – The video is scaled to fit the entire display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area don’t match, the video will be cropped.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Scaled to nearest edge</strong> – The video is scaled to fit to the display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area, black borders will appear on both sides of the video or above and below. The video isn’t cropped.</td>
</tr>
</tbody>
</table>
7.1.4.4 Force pixel format

The pixel format defines the quality of the image encoded. YUV refers to the color format used to receive each block of bits in the video signal. The format is followed by the pixel depth used for each color in the image format. A higher YUV format and pixel depth provides a higher quality image and requires more resources to process.

7.1.4.5 Encoding profile

Select an encoding profile for your signal. Changing the encoding profile may prevent your decoder from streaming. Select one of the following:
- Baseline
- Main
- High
- High, 10-bit
- High, YUV 4:2:2
- High, YUV 4:4:4 Predictive
- High, YUV 4:4:4 CAVLC + Intra

Target bit rate

The target bit rate, in Mb/s (Megabits per second), for encoding. The actual bandwidth used by your encoder varies according to your source and encoding method. The default is 15 Mb/s. A lower target bit rate may result in lower image quality. A higher target bit rate limit may result in lower performance, a higher bandwidth when streamed, and a larger file size when recorded.
7.1.4.6 Encoding mode

<table>
<thead>
<tr>
<th>Bit rate control</th>
<th>Select one of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Use a variable bit rate</td>
</tr>
<tr>
<td></td>
<td>• Use a constant bit rate</td>
</tr>
<tr>
<td>Maximum bit rate</td>
<td>The maximum bit rate for encoding. When encoding, the processor attempts to use the target bit rate but may use up to the maximum bit rate specified. The default is 22.5 Mb/s. The maximum bit rate is 120 Mb/s.</td>
</tr>
<tr>
<td>Estimated H.264 level</td>
<td>The estimated level of support for a profile required from the decoder.</td>
</tr>
<tr>
<td>Quantization parameters</td>
<td>The range used to compress the various frames in your GOP. A high maximum increases the level of compression of the frame and should decrease the bit rate but may decrease the image quality.</td>
</tr>
</tbody>
</table>

7.1.4.7 Force CAVLC entropy encoding

Enable this to force the use of context adaptive variable length coding (CAVLC) entropy encoding. Enabling this option overrides the default entropy encoding selection (CABAC).

7.1.4.8 Group of pictures (GOP)

<table>
<thead>
<tr>
<th>GOP length</th>
<th>The number of frames from one complete frame (I-frame) to another. A higher GOP length increases the compression level but may result in a lower quality image. The default is 90.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert P-frames every X frames</td>
<td>Enter the number of frames before a P-frame is inserted. All other frames are B-frames. A higher number of frames before inserting a P-frame increases the quality of the image but may result in a loss of performance. The minimum and default value is 1. The maximum value is 4.</td>
</tr>
</tbody>
</table>
7.1.5 Audio

<table>
<thead>
<tr>
<th>Bit rate</th>
<th>Select the audio bit rate, in kbps, for your audio transmission. A higher bit rate produces a sound quality closer to the source quality, but requires more bandwidth. The value ranges from 32 to 576. The default is 128.</th>
</tr>
</thead>
</table>
| AAC encoder      | Select one of the following:  
|                  | • AAC LC – Allowed bit rate range is 32 to 576 kbps.  
|                  | • AAC HEv1 – Allowed bit rate range is 32 to 288 kbps.  
|                  | • AAC HEv2 – Allowed bit rate range is 32 to 144 kbps.  |
| AAC quality      | Force the use of encoding complexity (low to high) to improve the quality of compressed audio. Adjusting these settings doesn’t affect the audio sample rate, target bit rate, or latency.  
|                  | • Low  
|                  | • Medium  
|                  | • High  |
| Use temporal noise shaping | This reshapess the quantization noise over time to improve the quality of the audio signal. This option is enabled by default. |
| AAC format       | Select one of the following:  
|                  | • ADTS  
|                  | • No container format  |

7.1.6 Streams

To add a stream (RTP, RTMP, RTSP, SRT, MPEG-2 TS, or HLS), click the Add () icon.

Note: If you configured your encoder to use IPv4 and IPv6, you must enable one stream for IPv4 and one stream for IPv6.
Note: To receive an RTP stream, you need to create an SDP file. For more information, contact Matrox Technical Support.

Note: When applying settings to multiple devices, make sure static IP addresses and multicast addresses aren’t being duplicated. For more information, contact your network administrator.

Note: Depending on the stream selected, certain options aren’t available.

<table>
<thead>
<tr>
<th>Enable stream</th>
<th>Enable or disable your stream.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign button</td>
<td>Assign a module (HDMI input, Streams, or Recordings) to a button on your Maevex 6120 device (Button 1, Button 2, Button 3, or Button 4). Note: Before assigning a module, make sure it’s set to Enable. If you don’t want to assign a button, select None.</td>
</tr>
<tr>
<td>Stream address</td>
<td>RTSP only – The URL (or stream address) of your RTSP stream.</td>
</tr>
<tr>
<td>Base port</td>
<td>The port number used to transmit your stream.</td>
</tr>
<tr>
<td>Destination location</td>
<td>RTMP only – The path of your RTMP stream.</td>
</tr>
<tr>
<td>Playlist file name</td>
<td>HLS only – Enter the name of your playlist file.</td>
</tr>
<tr>
<td>Name</td>
<td>Enter a name for your stream.</td>
</tr>
<tr>
<td>Network interface</td>
<td>The network interface (LAN1 or LAN2) to use for the stream. To use the first IP address the device finds, select Automatic IPv4 to use an IPv4 address or Automatic IPv6 to use an IPv6 address.</td>
</tr>
<tr>
<td>Encoding ladder configuration</td>
<td>HLS only – Select how to configure the encoding ladder: - Manual – Specify the bit rate and FPS (frames per second) decimation, then select the ladder to Enable for the HLS stream. To show resolutions that are automatically generated, enable Show auto-generated resolutions from video signal. - Automatic – Specify the Number of steps (1 to 6, with 1 being the highest bit rate) in the encoding ladder.</td>
</tr>
<tr>
<td>RTSP port</td>
<td>RTSP only – The RTSP port number used to transmit your stream.</td>
</tr>
<tr>
<td>Stream name/key</td>
<td>RTMP and RTSP only – Enter a suffix as part of your stream address. If you're using a media player to decode your stream, the media player may require this as part of the stream address to connect to a stream.</td>
</tr>
<tr>
<td>Use authentication</td>
<td>RTMP and RTSP only – Enable this if you’re using an authentication server, then enter your credentials (User name and Password).</td>
</tr>
</tbody>
</table>
### Encryption

SRT only – The encryption level to secure your stream. Options include: **Unencrypted**, **AES-128**, **AES-192**, or **AES-256**.

### Passphrase

The passphrase used to generate the encryption key. We recommend a passphrase length of 16 characters (AES-128), 24 characters (AES-192), and 32 characters (AES-256). If **Unencrypted** is selected, there’s no passphrase to enter.

### Connection type

SRT only – Run SRT in **Caller**, **Listener**, or **Rendezvous** mode.

### Latency

SRT only – The target latency, in milliseconds (ms), for transmission. The default is 40 ms.

### Time to live (TTL)

The number of hops or network nodes (such as network switches or routers) through which a multicast signal can travel. Once the TTL number is reached, the receiving network node prevents the signal broadcast further down the network. The value ranges from 1 to 255. The default is 16.

### Routing scheme

- **Unicast** – When selecting unicast, you need to specify the destination IP address of the stream. You can enter a valid IP address or host name.
- **Multicast** – Enter a Multicast address. Using multicast may require additional network configuration to support the transmission protocol (some network switches and routers can block multicast signals). For more information, contact your network administrator. To also allow unicast connections, enable the **Allow unicast connections** option.

---

### 7.1.7 Recordings

Use this option to record your video files on a network attached storage (NAS) device or an external storage device. The video files created are encoded with an H.264 video and AAC audio codec.

---

**Note:** When starting a recording manually or through a scheduled recording, it may take a few seconds for your encoder to actually record video. When scheduling a recording, we recommend you start the recording earlier than the actual time required.
7.1.7.1 Enable recording

Enable this to be able to record from your device.

If Scheduled recording is enabled, this option isn’t available.

7.1.7.2 Assign button

Assign a module (HDMI input, Streams, or Recordings) to a button on your Maevex 6120 device (Button 1, Button 2, Button 3, or Button 4).

Note: Before assigning a module, make sure it’s set to Enable.

If you don’t want to assign a button, select None.

7.1.7.3 File name prefix

The video file name is made up of two parts:

- First part – The name, which you enter.
- Second part – The timestamp of when the video file started, which your encoder defines.

The resulting file name is Prefix[YYYY-MM-DD_HH-MM-SS].mp4, where YYYY is the year, MM the month, DD the day, HH the hour (in a 24-hour format), MM the minutes, and SS the seconds.

A file name prefix can be up to 19 characters long.

7.1.7.4 File format

Select the format for your recording (MP4 or MOV).

To use fragmented MP4, enable the Use fragmented MP4 (fMP4) option. This option ensures your recorded file won’t be corrupted in the event your network connection is disrupted.

7.1.7.5 Maximum file block duration

Enter the recording time for each video file recorded. Once the recording time for a file is reached, PowerStream Plus creates a new file. A file can hold up to 8 hours of recording.

If the sampling rate (audio or video) changes, a new file is created, regardless of the file duration.

Note: If your network is slow, congested, or experiencing high traffic, your recording may fail. For more information, contact your network administrator.
7.1.7.6 Recording location

Under **Record to**, provide the path to the existing network shared folder or select the external storage device where your video files will be stored.

**Note:** To make sure the network path is properly recognized by your device, we recommend you provide the full computer name or the IP address of the system where the shared folder is located. The full computer name is part of the Windows properties of the system. For example, the full computer name of networkserver may be `networkserver.domain.com`. For more information, contact your network administrator.

7.1.7.6.1 Add network shared folder

Enter the path to the existing network shared folder, then select how to connect to the shared folder:

- **Connect as guest** – If your network drive doesn’t require user identification, use this. When you’re done, click **OK**.

- **Connect with credentials** – If your network drive requires user identification, enter a **User name** and **Password**. When you’re done, click **OK**.

7.1.7.6.2 Manage network shared folders

Use this to review your list of credentials, and to remove user names and passwords that are no longer required.

7.1.7.6.3 Eject device

To safely remove an external storage device from your system, select the device you want to remove, then click the **Eject** (⏏) button.

7.1.7.7 Scheduled recording

Enable this to schedule a date, time, and duration for your encoder to record a video file.

<table>
<thead>
<tr>
<th>Start recording at</th>
<th>Enter the date and time to start recording.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop recording at</td>
<td>Enter the date and time to stop recording.</td>
</tr>
</tbody>
</table>
7.2 Network

This contains the network settings for the connection and IP address of your encoder.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>LAN1</th>
<th>LAN2</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPv4 and IPv6</td>
<td>sûr</td>
<td>sûr</td>
</tr>
</tbody>
</table>

7.2.1 Configuration

Select if you want to configure your device to support IPv4, IPv6, or IPv4 and IPv6.

7.2.2 IP address

Select how to assign an IP address to your encoder.

By default, Dynamic IP address (DHCP) is used. For information on manually assigning a Static IP address, see “3.1 - Network discovery”, page 17.

7.3 RS232

Enable this to virtualize an RS232 (or serial) connection.
7.3.1 Enabling RS232 virtualization

To enable RS232 virtualization, select the type of RS232 connection to use.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>Disable RS232 to close the TCP port used for virtualization.</td>
</tr>
<tr>
<td>Relayed serial over IP</td>
<td>In a relayed connection, the RS232 controller must be connected to your encoder to send commands to an RS232 device that’s connected to a decoder. The RS232 connection is independent of any other connection between an encoder and a decoder. When using this option, the RS232 settings of your encoder are sent to the decoder. To establish a relayed connection, the encoder and the decoder must both use <strong>Relayed serial over IP</strong>.</td>
</tr>
<tr>
<td>Direct serial over IP</td>
<td>In a direct connection, an RS232 controller can send commands directly to the RS232 device connected to your encoder. The RS232 controller isn’t physically connected to a device. Any encoder that uses direct serial over IP receives the RS232 commands through an opened TCP port (for example, from a telnet session) and sends these commands to the RS232 device connected to it.</td>
</tr>
<tr>
<td>Local control</td>
<td>Select this to add local encoder device control through the RS232 interface.</td>
</tr>
</tbody>
</table>

7.3.2 Configuring RS232

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select decoder</td>
<td>If <strong>Relayed serial over IP</strong> is selected, select the decoder that’s connected to the RS232 device you want to communicate with. The RS232 connection is virtualized only between your encoder and this decoder. This setting isn’t available if <strong>Direct serial over IP</strong> is selected.</td>
</tr>
<tr>
<td>TCP port</td>
<td>If <strong>Direct serial over IP</strong> is selected, select which port will receive the RS232 commands. (Make sure the port number is available and not used by another service on your network.) The default is 11999. This setting isn’t available if <strong>Relayed serial over IP</strong> is selected.</td>
</tr>
</tbody>
</table>
7.4 Date and time

Use this to update the date, time, and time zone of your Maevex device. For more information on these settings, see “12 - Adjusting the date and time of your device”, page 96.

7.5 Other

<table>
<thead>
<tr>
<th>RS232 settings</th>
<th>If Relayed serial over IP is selected, the following settings are used by the encoder and the selected decoder. If Direct serial over IP is selected, the following settings are used only for the device connected to your encoder.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baud rate</td>
<td>The speed, in bits per seconds (or baud), used for the RS232 connection. The default is 115200.</td>
</tr>
<tr>
<td>Data bits</td>
<td>The number of bits per block of data transmitted. The default is 8.</td>
</tr>
<tr>
<td>Parity</td>
<td>The type of parity bits (None, Odd, or Even) used for the data transmitted. The default is None.</td>
</tr>
<tr>
<td>Stop bits</td>
<td>The number of bits used to identify the end of a data block. The default is 1.</td>
</tr>
<tr>
<td>Flow control</td>
<td>The signal type (None or RTS/CTS) used to pause and resume data transmission. The default is None.</td>
</tr>
</tbody>
</table>

Local preview

To preview your sources on your console display, enable the Enable local preview of input option, then select your Video source:

- Input – Input stream appears full-screen.
- Tile – Input streams appear as a tile view.
- Cycle – Input streams cycle. Specify the Cycle duration, in seconds.

To assign the local preview to a button on your Maevex 6150 device (Button 1, Button 2, Button 3, or Button 4). If you don’t want to assign a button, select None. If the option is enabled, select an Audio source from the list. If no input is available, None appears.

Power recovery policy

Set up your Maevex device to start up after a power loss.

- Never start – Never start your Maevex device after a power loss.
- Always start – Always start your Maevex device after a power loss.
- Restore last state – Always start and restore the last state of your Maevex device after a power loss.

Power button control

To prevent your device from shutting down, enable the Disable shutdown option.
<table>
<thead>
<tr>
<th><strong>Recording control</strong></th>
<th>To disable the recording module for a specific Maevex device, enable the <strong>Disable recording</strong> option. Your device will reboot for this change to take effect.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reboot control</strong></td>
<td>To remotely force a reboot of your device if it stops responding, enable the <strong>Enable force reboot</strong> option.</td>
</tr>
<tr>
<td><strong>Wake-on-LAN control</strong></td>
<td>To remotely wake up a Maevex device if it’s asleep or turns off, enable the <strong>Enable Wake-on-LAN</strong> option.</td>
</tr>
<tr>
<td><strong>DNS update</strong></td>
<td>To update your DNS (Domain Name System) to use a friendly name instead of the device serial number, enable the <strong>Update DNS with friendly name</strong> option.</td>
</tr>
<tr>
<td><strong>Logs</strong></td>
<td>- <strong>Download device logs</strong> – Download the log files. This file contains information on your Maevex devices. This information is useful for troubleshooting purposes.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Erase device logs</strong> – Erase the log files created for your Maevex devices.</td>
</tr>
<tr>
<td><strong>Audits</strong></td>
<td>Download the audit file. When you click <strong>Download device audits</strong>, you’ll be prompted to enter a password. The password entered encrypts the audit file. This file contains information on the user interactions with your Maevex devices. This information is used by your Maevex environment administrator.</td>
</tr>
<tr>
<td><strong>Troubleshooting</strong></td>
<td>- <strong>Audio</strong> – To disable the audio on all of your Maevex 6100 Series devices, enable the <strong>Disable audio</strong> option. Your device will reboot for this change to take effect.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Debug configurations</strong> – Get help and troubleshooting information for your configuration. For more information, contact Matrox Technical Support.</td>
</tr>
</tbody>
</table>
8 Maevex 6100 encoder settings

This enables you to view, configure, and manage settings specific to a Maevex 6100 Quad encoder.

**Note:** Don’t change input or network connections while your Maevex device is turned on. If connections are changed while your Maevex device is turned on, your video sources or recordings will be lost.

8.1 Processing

8.1.1 Inputs

An input box contains the following information about the video and audio signal detected by your encoder.

<table>
<thead>
<tr>
<th></th>
<th>Input number</th>
<th>Identifies the input (1, 2, 3, and 4).</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Input name</td>
<td>Lists the name of the input, as specified by the user.</td>
</tr>
<tr>
<td>B</td>
<td>Video signal</td>
<td>Detects the resolution and refresh rate of the video signal. If no signal is detected, this reads as (no video).</td>
</tr>
<tr>
<td>C</td>
<td>Audio signal</td>
<td>Detects the audio signal. If no signal is detected, this reads as (no audio). If audio is disabled, this reads as (audio disabled).</td>
</tr>
<tr>
<td>D</td>
<td>Status</td>
<td>Indicates if the input is enabled or disabled for capture.</td>
</tr>
<tr>
<td>E</td>
<td>Pixel format</td>
<td>Defines the quality of the image captured.</td>
</tr>
</tbody>
</table>

You can configure the following settings for each input.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable input</td>
<td>To use an input as a source, you need to enable it. Inputs are enabled by default.</td>
</tr>
<tr>
<td>Input name</td>
<td>Enter a name for each input.</td>
</tr>
</tbody>
</table>
**8.1.2 Processing**

To view and edit the settings of a processing module, click that module. The information appears on the right side of the panel.

Note: Depending on your configuration (for example, if you're using a single source layout), certain settings may not be available.

Select a processing to configure its source.

### Pixel format

| Pixel format | The pixel format defines the quality of the image captured. YUV refers to the color format used to receive each block of bits in the video signal. The format is followed by the pixel depth used for each color in the image format. A higher YUV format and pixel depth provides a higher quality image and requires more resources to process. |

### Expected audio quality

| Expected audio quality | The audio quality expected for your stream. Note: When enabling this option, make sure to also select **Continue streaming on signal loss** for your stream (see “8.1.2 - Processing”, page 60). |

**Audio source**

| Audio source | The source of the audio signal to use. |

**Layout**

| Layout | The layout (picture in picture or picture by picture) and the number of sources to use. |

**Synchronize framlocked video input signal**

<p>| Synchronize framlocked video input signal | Enable this to maintain frame synchronization when compositing from multiple sources (inputs). |</p>
<table>
<thead>
<tr>
<th>Continue streaming on signal loss</th>
<th>Enable this to make sure streaming isn’t interrupted if the source signal is switched or the connection to the device is lost. You can also set a background fill color for your composite layout. <strong>Note:</strong> When enabling this option, make sure to also select <em>Expected audio quality</em> for your stream (see “8.1.1 - Inputs”, page 59).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame size</td>
<td>The width and height, in pixels, of the source. If the layout of your sources uses a height or width that’s smaller than your frame size, black borders may appear on both sides, or on the top and bottom, of the frame. The width ranges from 64 to 4096 and must be a multiple of 16. The height ranges from 64 to 4096 and must be an even number.</td>
</tr>
<tr>
<td>Frame rate</td>
<td>The frame rate, in FPS (frames per second), for the source.</td>
</tr>
<tr>
<td>Background color</td>
<td>The background color for your source. If the layout of your sources uses less height or width than your frame size, the borders will use the background color. If no video is captured for your source, the background color is shown instead.</td>
</tr>
<tr>
<td>Pixel format</td>
<td>The pixel format to define the quality of your image, and the pixel depth for each color in the image format. A higher YUV format and pixel depth provides a higher quality image and requires more resources to process. Only certain pixel formats may be available.</td>
</tr>
</tbody>
</table>

### 8.1.3 Source

<table>
<thead>
<tr>
<th>Input</th>
<th>Select the input to use for your source.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture rate</td>
<td>Select the frame rate for video capture. Reducing the frame rate also reduces the frame rate of the stream or recording.</td>
</tr>
</tbody>
</table>

**Note:** Depending on your configuration (for example, if you’re using a single source layout), certain settings may not be available.
### Scaling
Select how to scale your video:
- **Unscaled from top left** – The video is unscaled and positioned in the top left corner of the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.
- **Unscaled centered** – The video is unscaled and centered in the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.
- **Stretched to all edges** – The video is stretched to fit the entire display area without respecting the aspect ratio of the original video. If the aspect ratio of the video and the display area don’t match, the video may be distorted.
- **Scaled to all edges** – The video is scaled to fit the entire display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area don’t match, the video will be cropped.
- **Scaled to nearest edge** – The video is scaled to fit to the display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area, black borders will appear on both sides of the video or above and below. The video isn’t cropped.

### Pivot
Change the orientation of your source:
- **0 degrees** – No pivot is applied.
- **90 degrees clockwise** – The source is rotated 90 degrees clockwise.
- **180 degrees** – The source is rotated 180 degrees.
- **90 degrees counterclockwise** – The source is rotated 90 degrees counterclockwise.

### Flip
Select the plane along which the source is flipped:
- **None** – No flip is applied.
- **Vertically** – The source is flipped along the vertical plane. The top becomes the bottom.
- **Horizontally** – The source is flipped along the horizontal plane. The right side becomes the left.
- **On both axes** – The source is flipped along the vertical plane and the horizontal plane. This is visually similar to rotating 180 degrees.

### Opacity
Increase or decrease how opaque the source video appears. The default is 100%.

### Brightness
Increase or decrease how light or dark the colors appear. The default is 500.
8.1.4 Encodings

These settings determine how your processor encodes, transmits, or records the video and audio signals.

### 8.1.4.1 Adding an encoding

To add an encoding:

- **Custom encoding** – Click the Add ( ) icon, then click To Custom. Enter the information for the selected protocol. The default is RTMP.

- **Content delivery network (CDN)** – Click the Add ( ) icon, then click a preset (Facebook Live, YouTube, Restream, Twitch, LiveScale, IBM Video Streaming, Vimeo, or Wowza Cloud). Enter the information for the selected protocol.

### 8.1.4.2 Include

Select the signals to include (Audio only, Video only, or Audio and video) in your encoding.
### 8.1.4.3 Force encoding size

Enable this to have PowerStream Plus increase or reduce the captured video size before it's encoded.

<table>
<thead>
<tr>
<th>Frame size</th>
<th>Specify the width and height, in pixels, of the video up to the width and height of the original video input. If your video source uses a different size, your encoder scales the video to the specified size (image may be distorted). The width ranges from 64 to 4096 and must be a multiple of 16. The height ranges from 64 to 4096 and must be an even number.</th>
</tr>
</thead>
</table>
| Scaling | Select how to scale your video:  
- **Unscaled from top left** – The video is unscaled and positioned in the top left corner of the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.  
- **Unscaled centered** – The video is unscaled and centered in the display area. If the display resolution of the video is bigger than the display area, the video will be cropped.  
- **Stretched to all edges** – The video is stretched to fit the entire display area without respecting the aspect ratio of the original video. If the aspect ratio of the video and the display area don't match, the video may be distorted.  
- **Scaled to all edges** – The video is scaled to fit the entire display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area don't match, the video will be cropped.  
- **Scaled to nearest edge** – The video is scaled to fit to the display area while respecting the aspect ratio of the original video. The video is centered in the display area. If the aspect ratio of the video and the display area, black borders will appear on both sides of the video or above and below. The video isn’t cropped. |
| Pivot | Change the orientation of your source:  
- **0 degrees** – No pivot is applied.  
- **90 degrees clockwise** – The source is rotated 90 degrees clockwise.  
- **180 degrees** – The source is rotated 180 degrees.  
- **90 degrees counterclockwise** – The source is rotated 90 degrees counterclockwise. |
8.1.4.4 Force pixel format

The pixel format defines the quality of the image encoded. YUV refers to the color format used to receive each block of bits in the video signal. The format is followed by the pixel depth used for each color in the image format. A higher YUV format and pixel depth provides a higher quality image and requires more resources to process.

8.1.4.5 Encoding profile

<table>
<thead>
<tr>
<th>Encoding profile</th>
<th>Select an encoding profile for your signal. Changing the encoding profile may prevent your decoder from streaming. Select one of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>• Main</td>
</tr>
<tr>
<td></td>
<td>• High</td>
</tr>
<tr>
<td></td>
<td>• High, 10-bit</td>
</tr>
<tr>
<td></td>
<td>• High, YUV 4:2:2</td>
</tr>
<tr>
<td></td>
<td>• High, YUV 4:4:4 Predictive</td>
</tr>
<tr>
<td></td>
<td>• High, YUV 4:4:4 CAVLC + Intra</td>
</tr>
<tr>
<td>Target bit rate</td>
<td>The target bit rate, in Mb/s (Megabits per second), for encoding. The actual bandwidth used by your encoder varies according to your source and encoding method. The default is 15 Mb/s. A lower target bit rate may result in lower image quality. A higher target bit rate limit may result in lower performance, a higher bandwidth when streamed, and a larger file size when recorded.</td>
</tr>
<tr>
<td>Bit rate control</td>
<td>Select one of the following:</td>
</tr>
<tr>
<td></td>
<td>• Use a variable bit rate</td>
</tr>
<tr>
<td></td>
<td>• Use a constant bit rate</td>
</tr>
<tr>
<td>Maximum bit rate</td>
<td>The maximum bit rate for encoding. When encoding, the processor attempts to use the target bit rate but may use up to the maximum bit rate specified. The default is 22.5 Mb/s. The maximum bit rate is 120 Mb/s.</td>
</tr>
</tbody>
</table>
8.1.4.6 Encoding mode

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated H.264 level</td>
<td>The estimated level of support for a profile required from the decoder.</td>
</tr>
<tr>
<td>Quantization parameters</td>
<td>The range used to compress the various frames in your GOP. A high maximum increases the level of compression of the frame and should decrease the bit rate but may decrease the image quality.</td>
</tr>
</tbody>
</table>

8.1.4.7 Force CAVLC entropy encoding

Enable this to force the use of context adaptive variable length coding (CAVLC) entropy encoding. Enabling this option overrides the default entropy encoding selection (CABAC).

8.1.4.8 Group of pictures (GOP)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOP length</td>
<td>The number of frames from one complete frame (I-frame) to another. A higher GOP length increases the compression level but may result in a lower quality image. The default is 90.</td>
</tr>
<tr>
<td>Insert P-frames every X frames</td>
<td>Enter the number of frames before a P-frame is inserted. All other frames are B-frames. A higher number of frames before inserting a P-frame increases the quality of the image but may result in a loss of performance. The minimum and default value is 1. The maximum value is 4.</td>
</tr>
</tbody>
</table>

8.1.5 Audio

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bit rate</td>
<td>Select the audio bit rate, in kbps, for your audio transmission. A higher bit rate produces a sound quality closer to the source quality, but requires more bandwidth. The value ranges from 32 to 576. The default is 128.</td>
</tr>
<tr>
<td>AAC encoder</td>
<td>Select one of the following:</td>
</tr>
<tr>
<td></td>
<td>• AAC LC – Allowed bit rate range is 32 to 576 kbps.</td>
</tr>
<tr>
<td></td>
<td>• AAC HEv1 – Allowed bit rate range is 32 to 288 kbps.</td>
</tr>
<tr>
<td></td>
<td>• AAC HEv2 – Allowed bit rate range is 32 to 144 kbps.</td>
</tr>
</tbody>
</table>
8.1.6 Streams

To add a stream (RTP, RTMP, RTSP, SRT, MPEG-2 TS, or HLS), click the Add ( ) icon.

<table>
<thead>
<tr>
<th>AAC quality</th>
<th>Force the use of encoding complexity (low to high) to improve the quality of compressed audio. Adjusting these settings doesn’t affect the audio sample rate, target bit rate, or latency.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Low \n</td>
</tr>
<tr>
<td>AAC format</td>
<td>Select one of the following:</td>
</tr>
<tr>
<td></td>
<td>- ADTS \n</td>
</tr>
</tbody>
</table>

**Note:** If you configured your encoder to use IPv4 and IPv6, you must enable one stream for IPv4 and one stream for IPv6.

**Note:** To receive an RTP stream, you need to create an SDP file. For more information, contact Matrox Technical Support.

**Note:** When applying settings to multiple devices, make sure static IP addresses and multicast addresses aren’t being duplicated. For more information, contact your network administrator.

**Note:** Depending on the stream selected, certain options aren’t available.
<table>
<thead>
<tr>
<th>Enable stream</th>
<th>Enable or disable your stream.</th>
</tr>
</thead>
</table>
| Assign button | Assign a module (HDMI input, Streams, or Recordings) to a button on your Maevex 6150 device (Button 1, Button 2, Button 3, or Button 4).  
**Note:** Before assigning a module, make sure it’s set to Enable.  
If you don’t want to assign a button, select None. |
| Stream address | RTSP only – The URL (or stream address) of your RTSP stream. |
| Base port | The port number used to transmit your stream. |
| Destination location | RTMP only – The path of your RTMP stream. |
| Playlist file name | HLS only – Enter the name of your playlist file. |
| Name | Enter a name for your stream. |
| Network interface | The network interface (LAN1 or LAN2) to use for the stream. To use the first IP address the device finds, select Automatic IPv4 to use an IPv4 address or Automatic IPv6 to use an IPv6 address. |
| Encoding ladder configuration | HLS only – Select how to configure the encoding ladder:  
• **Manual** – Specify the bit rate and FPS (frames per second) decimation, then select the ladder to Enable for the HLS stream. To show resolutions that are automatically generated, enable Show auto-generated resolutions from video signal.  
• **Automatic** – Specify the Number of steps (1 to 6, with 1 being the highest bit rate) in the encoding ladder. |
| RTSP port | RTSP only – The RTSP port number used to transmit your stream. |
| Stream name/key | RTMP and RTSP only – Enter a suffix as part of your stream address. If you’re using a media player to decode your stream, the media player may require this as part of the stream address to connect to a stream. |
| Use authentication | RTMP and RTSP only – Enable this if you’re using an authentication server, then enter your credentials (User name and Password). |
| Encryption | SRT only – The encryption level to secure your stream. Options include: Unencrypted, AES-128, AES-192, or AES-256. |
| Passphrase | The passphrase used to generate the encryption key. We recommend a passphrase length of 16 characters (AES-128), 24 characters (AES-192), and 32 characters (AES-256). If Unencrypted is selected, there’s no passphrase to enter. |
| Connection type | SRT only – Run SRT in Caller, Listener, or Rendezvous mode. |
| Latency | SRT only – The target latency, in milliseconds (ms), for transmission. The default is 40 ms. |
8.1.7 Recordings

Use this option to record your video files on a network attached storage (NAS) device. The video files created are encoded with an H.264 video and AAC audio codec.

Time to live (TTL)
The number of hops or network nodes (such as network switches or routers) through which a multicast signal can travel. Once the TTL number is reached, the receiving network node prevents the signal broadcast further down the network. The value ranges from 1 to 255. The default is 16.

Routing scheme
- **Unicast** – When selecting unicast, you need to specify the destination IP address of the stream. You can enter a valid IP address or host name.
- **Multicast** – Enter a **Multicast address**. Using multicast may require additional network configuration to support the transmission protocol (some network switches and routers can block multicast signals). For more information, contact your network administrator. To also allow unicast connections, enable the **Allow unicast connections** option.

**Note:** When starting a recording manually or through a scheduled recording, it may take a few seconds for your encoder to actually record video. When scheduling a recording, we recommend you start the recording earlier than the actual time required.

**Note:** If your network is slow, congested, or experiencing high traffic, your recording may fail. For more information, contact your network administrator.

8.1.7.1 Enable recording

Enable this to be able to record from your device.

If **Scheduled recording** is enabled, this option isn’t available.
8.1.7.2 File name prefix

The video file name is made up of two parts:

- First part – The name, which you enter.
- Second part – The timestamp of when the video file started, which your encoder defines.

The resulting file name is Prefix[YYYY-MM-DD_HH-MM-SS].mp4, where YYYY is the year, MM the month, DD the day, HH the hour (in a 24-hour format), MM the minutes, and SS the seconds.

A file name prefix can be up to 19 characters long.

8.1.7.3 File format

Select the format for your recording (MP4 or MOV).

To use fragmented MP4, enable the Use fragmented MP4 (fMP4) option. This option ensures your recorded file won’t be corrupted in the event your network connection is disrupted.

8.1.7.4 Maximum file block duration

Enter the recording time for each video file recorded. Once the recording time for a file is reached, PowerStream Plus creates a new file. A file can hold up to 8 hours of recording.

If the sampling rate (audio or video) changes, a new file is created, regardless of the file duration.

8.1.7.5 Recording location

Under Record to, provide the path to the existing network shared folder or select the external storage device where your video files will be stored.

- **Note:** To make sure the network path is properly recognized by your device, we recommend you provide the full computer name or the IP address of the system where the shared folder is located. The full computer name is part of the Windows properties of the system. For example, the full computer name of networkserver may be networkserver.domain.com. For more information, contact your network administrator.

8.1.7.5.1 Add network shared folder

Enter the path to the existing network shared folder, then select how to connect to the shared folder:

- **Connect as guest** – If your network drive doesn’t require user identification, use this. When you’re done, click OK.
- **Connect with credentials** – If your network drive requires user identification, enter a User name and Password. When you’re done, click OK.
8.1.7.5.2 Manage network shared folders
Use this to review your list of credentials, and to remove user names and passwords that are no longer required.

8.1.7.5.3 Eject device
To safely remove an external storage device from your system, select the device you want to remove, then click the Eject (⏏️) button.

8.1.7.6 Scheduled recording
Enable this to schedule a date, time, and duration for your encoder to record a video file.

<table>
<thead>
<tr>
<th>Start recording at</th>
<th>Enter the date and time to start recording.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop recording at</td>
<td>Enter the date and time to stop recording.</td>
</tr>
</tbody>
</table>

8.2 Network
This contains the network settings for the connection and IP address of your encoder.

8.2.1 Configuration
Select if you want to configure your device to support IPv4, IPv6, or IPv4 and IPv6.

8.2.2 IP address
Select how to assign an IP address to your encoder.
By default, Dynamic IP address (DHCP) is used. For information on manually assigning a Static IP address, see "3.1 - Network discovery", page 17.
### 8.3 Date and time

Use this to update the date, time, and time zone of your Maevex device. For more information on these settings, see “12 - Adjusting the date and time of your device”, page 96.

### 8.4 Other

<table>
<thead>
<tr>
<th>Reboot control</th>
<th>To remotely force a reboot of your device if it stops responding, enable the <strong>Enable force reboot</strong> option.</th>
</tr>
</thead>
</table>
| Logs           | • **Download device logs** – Download the log files. This file contains information on your Maevex devices. This information is useful for troubleshooting purposes.  
• **Erase device logs** – Erase the log files created for your Maevex devices. |
| Audits         | Download the audit file. When you click **Download device audits**, you’ll be prompted to enter a password. The password entered encrypts the audit file.  
This file contains information on the user interactions with your Maevex devices. This information is used by your Maevex environment administrator. |
| Troubleshooting| • **Audio** – To disable the audio on all of your Maevex 6100 Series devices, enable the **Disable audio** option. Your device will reboot for this change to take effect.  
• **Debug configurations** – Get help and troubleshooting information for your configuration. For more information, contact Matrox Technical Support. |
9 Maevex 5150 encoder settings

This enables you to view, configure, and manage settings specific to a Maevex 5150 encoder.

9.1 Processing

9.1.1 Modify settings

To modify the settings for multiple devices at the same time:

1. From the PowerStream Plus main interface, press the [Ctrl] key, select the tiles of the devices you want to modify, then click Multi-device settings. The device tiles you select must be of the same type.

2. Enable the Modify settings option.

3. Select your preferred device, then make your changes.

4. When you’re done, click Apply. This applies the settings from the preferred device to the other selected devices.

9.1.2 Enable processing

Click this to start or stop processing on your encoder.
9.1.3 Capture

These settings provide information for the video and audio signal received by your encoder and determine how these signals are processed for encoding.

9.1.3.1 Stop capture if no HDMI input

Enable this to stop capturing if a HDMI signal is no longer detected on the HDMI In connector of your encoder. When this feature is enabled, enter the minimum amount of time, in seconds, before the capture stops. Capture may take up to five (5) more seconds to stop once the HDMI signal is lost.

When capture stops, your encoder also stops streaming. The decoder connected to this encoder no longer receives a stream. The decoder can use the failsafe option (if enabled), or it can stop outputting to allow a monitor to enter power saving mode.

If this feature is disabled and the HDMI signal is lost, your encoder transmits a blank screen (blue) while no HDMI signal is received. The decoder connected to this encoder continues to receive a stream. In this case, the decoder can't use the failsafe option, so it will show a blank screen (blue), preventing a monitor from entering power saving mode.

Capture and streaming resume once the HDMI input is re-established.

9.1.3.2 Video

9.1.3.3 Audio

Select the audio source to use for audio capture (From HDMI or From analog input). You can also disable audio capture. By default, audio capture is set to From HDMI.

If you select analog audio, you also need to select the Sampling rate used to receive audio. By default, the audio sampling rate is 48.0 kHz.

9.1.4 Encoding

These settings determine how your encoder compresses and transmits the video and audio signals.

9.1.4.1 Use specific video size

Enable this to have PowerStream Plus reduce the size of the captured video before the video is encoded.
Specify the width and height, in pixels, of the video up to the width and height of the original video input. If your video source uses a different size, your encoder scales the video to the specified size (image may be distorted).

The width ranges from 128 to 1920 and must be a multiple of 16. The height ranges from 96 to 1200 and must be an even number.

### 9.1.4.2 Target bit rate

The bit rate in Mb/s (Megabits per second) at which your encoder should transmit the streaming signal. The actual bandwidth used by your encoder varies according to your source and encoding method.

The default is 15 Mb/s. The maximum bit rate is 25 Mb/s. A lower target bit rate may result in lower image quality. A higher target bit rate limit may result in lower performance.

### 9.1.4.3 Strategy

To determine the proper compression method, select if you want to favor speed or quality.

<table>
<thead>
<tr>
<th>Favor speed</th>
<th>Minimizes the bandwidth required. This is the default setting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favor quality</td>
<td>Maximizes the quality of the image transmitted.</td>
</tr>
</tbody>
</table>

### 9.1.4.4 Group of pictures (GOP)

<table>
<thead>
<tr>
<th>GOP length</th>
<th>The number of frames from one complete frame (I-frame) to another. A higher GOP length increases the compression level but may result in a lower quality image. The default is 90.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use constant bit rate (CBR)</td>
<td>Enable this to limit the bit rate used to the target bit rate. Using a constant bit rate may result in dropped frames if the complexity of the source is high. When using constant bit rate, your actual bit rate may be lower than the target bit rate. Enable Allow filling bits to sustain bit rate to maintain the target bit rate even if the simplicity of the source image would reduce the bit rate.</td>
</tr>
</tbody>
</table>
9.1.4.5 Audio bit rate

Select the audio bit rate, in kbps, for your audio transmission (96, 128, 192, or 256 kbps). A higher bit rate produces a sound quality closer to the source quality, but requires more bandwidth. The default is 192 kbps.

9.1.5 Streaming/Recording

These settings determine if the stream is transmitted on the network or saved to a file.

9.1.5.1 Stream to network

Enable this option to transmit the stream of your encoder on the network.

9.1.5.1.1 Stream address (Unicast and Multicast)

The URL of the stream for this encoder. This stream address is used for unicast and multicast connections. For more information, see "13.3 - Configuring multicast routing", page 103.

<table>
<thead>
<tr>
<th>Port</th>
<th>The port number used to transmit your stream. The default is 8554. For more information, see your network administrator.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folder</td>
<td>Enter a subfolder as part of your stream address. If you’re using a media player to decode your stream, the media player may require this to connect to a stream.</td>
</tr>
</tbody>
</table>
9.1.5.1.2 Multicast

**Note:** When applying settings to multiple devices, make sure static IP addresses and multicast addresses aren’t being duplicated. For more information, contact your network administrator.

| Multicast address | The IP address used to transmit the multicast stream. The IP address and corresponding port are transmitted by the encoder to a decoder requesting a multicast stream and any network switches or routers between the encoder and any connected decoder. To ensure that each decoder receives a single stream, each encoder should have a unique multicast address. IP addresses may range from 224.0.0.0 to 239.255.255.255. We recommend using an IP address between 224.2.0.1 and 224.2.255.255. The default is 224.2.0.1.
| Time to live (TTL) | The number of network nodes (such as network switches or routers) through which a multicast signal can travel. Once the TTL number is reached, the receiving network node prevents the signal broadcast further down the network. The value ranges from 1 to 255. The default is 16.

**Note:** Multicast may require additional network configuration to support the transmission protocol (some network switches and routers can block multicast signals). For more information, see your network administrator.

9.1.5.2 Record to network storage

Use this to record your capture to video files on a network drive. The video files created are encoded with an H.264 video and AAC audio codec in MP4 container format.

**Note:** When starting a recording manually or through a scheduled recording, it may take a few seconds before your encoder actually starts recording the video. When scheduling a recording, we recommend you start the recording earlier than the actual time required.

**Note:** If your network is slow, congested, or experiencing high traffic, your recording may fail. For more information, contact your network administrator.
9.1.5.2.1 Network shared folder

Provide the path to the existing network shared folder where your video files will be stored.

**Note:** To make sure the network path is properly recognized by your device, we recommend you provide the full computer name or the IP address of the system where the shared folder is located. The full computer name is part of the Windows properties of the system. For example, the full computer name of ‘networkserver’ may be `networkserver.domain.com`. For more information, see your network administrator.

If your network drive requires user identification, click **Change credentials** to provide a user name and password. You can also use this to remove user names and passwords that are no longer required.

9.1.5.2.2 File name prefix

The video file name is made up of two parts:

- **First part** – The name of the file, which you enter.
- **Second part** – The timestamp of when the video file started, which your encoder defines.

The resulting file name is `Prefix/YYYY-MM-DD_HH-MM-SS.mp4`, where YYYY is the year, MM the month, DD the day, HH the hour (in a 24-hour format), MM the minutes, and SS the seconds.

9.1.5.2.3 File duration

Enter the recording time for each video file recorded. Once the recording time for a file is reached, the encoder creates a new file.

If the sampling rate (audio or video) changes, a new file is created, regardless of the file duration.

9.1.5.2.4 Schedule recording

Enable this to schedule a date, time, and duration for your video recording.

<table>
<thead>
<tr>
<th>Start recording</th>
<th>Enter the date and time to start recording.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total duration</td>
<td>Enter the length of time to record video files.</td>
</tr>
</tbody>
</table>

When the recording starts, the encoder is listed as **Recording** for the total duration of the recording. When the recording ends, the encoder changes back to **Ready**.
9.2 Local output (for encoder)

This tab contains the local output settings of your encoder.

9.2.1 Selecting an output method

9.2.1.1 Use pass through

Output the video and audio signals of your source directly to your monitor and audio output device. You can use this option to see how your source video looks at the preferred display mode for your monitor and without transformations by the encoder.

While this is enabled:

- The source uses the EDID of the DVI or HDMI digital monitor connected to the HDMI OUT connector of your encoder to determine which display mode to use. If no EDID is detected, the source may disable its video output and capture is impossible.
- The encoder must support the display mode used by the source for capture, encoding, streaming, or recording to work.
- The output settings (such as Size and transformations and Image appearance) for your encoder have no effect and are disabled.
- If capture isn’t working on your encoder, the source video still plays on your monitor.
- No analog video signal is received, so there’s no video output on the VGA connector (analog video output).
- If the HDMI output device connected to your encoder doesn’t support audio output, your HDMI source may disable its audio output. Because no audio is received at input, there’s no audio for the encoder and all decoders connected to this encoder.
9.2.1.2 Use confidence preview (default)

Output the video signal as it's captured and transformed using the Capture and Local output (video and audio) settings of the encoder to your monitor and audio output device. Use confidence preview if no monitor is connected to your encoder. You can use this option to see the transformations configured through the output settings of your encoder.

While this is enabled:

- No monitor needs to be connected to your encoder. The source uses the EDID of the encoder to determine which display mode to use. The preferred display mode of the encoder is 1920 × 1080 @ 60 Hz.
- The output settings (such as Size and transformation and Image appearance) are used to output the video to the monitors.
- The transformations are done directly to the display mode received from the source, which may be different from the display mode of the encoded stream. For more information, see “9.1.4 - Encoding”, page 74.
- Your encoder can output to a DVI or HDMI digital monitor connected to the HDMI Out connector, to an analog monitor connected to the VGA connector, or to both.
- Your encoder outputs the same display mode to both the HDMI Out and VGA connector.
- For its output display mode, you can force a display mode, or you can let the encoder use the EDID of the monitor detected to determine which display mode to use. For more information, see “9.2.2.2.1 - Force display mode”, page 80.

9.2.2 Video

9.2.2.1 Video output type

Select the video type for your output (HDMI + VGA, HDMI, VGA, or No outputs). By default, video output is set to HDMI + VGA.

Selecting No outputs or VGA disables HDMI audio.

9.2.2.2 Size and transformations

This defines how the local output displays video.

9.2.2.2.1 Force display mode

When this option is enabled, the encoder uses the selected display mode for your monitor. The display mode is the combination of display resolution and refresh rate. Depending on your monitor and the display mode selected, black borders may appear above and below, on each side of, or around your video.
When this option is disabled:

- If a DVI or HDMI monitor is connected to the HDMI Out connector of your encoder, the encoder uses the EDID of that monitor to output. Each monitor has a preferred display mode defined in its EDID. If your device supports that display mode, both the encoder and the monitor use that mode. If the encoder doesn’t support that display mode, the encoder selects a display mode that both devices support. For more information, see your monitor documentation or contact your monitor manufacturer.

- If no monitor is connected to the HDMI Out connector, or if Video output type is set to VGA, the encoder uses its preferred display mode of 1920 × 1080 @ 60 Hz. If your analog monitor doesn’t support 1920 × 1080 @ 60 Hz, we recommend you enable Force a display mode and select a display mode your analog monitor supports.

This option is disabled by default.

### 9.2.2.2.2 Scaling

Select how the video appears in your display area.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center in display</td>
<td>The video appears in the center of the display area. If the video resolution is smaller than the output resolution, the video isn’t scaled. If the video resolution is larger than the output resolution, the video is scaled as if it was set to Fit in display. Black borders may appear around your video. By default, scaling is set to Center in display.</td>
</tr>
<tr>
<td>Stretch to display</td>
<td>The video is scaled to fit the entire display area. If the display area has a different aspect ratio than the display area, the image may be distorted.</td>
</tr>
<tr>
<td>Fit in display</td>
<td>The video is scaled to fit the display area without distorting the image. If the display area has a different aspect ratio than the display area, black borders appear either above and below or on each side of your video.</td>
</tr>
</tbody>
</table>

### 9.2.2.3 Image appearance

This enables you to adjust the color settings of your video output.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brightness</td>
<td>Increase or decrease how light or dark the colors appear. The default is 750.</td>
</tr>
</tbody>
</table>
9.2.3 Audio

The volume for the HDMI channel and Analog channel of your device. The default is 50.

Click Mute to disable audio output.

9.3 Network

This contains the network settings for the connection and IP address of your device.

9.3.1 Connection settings

Select the link speed and duplex mode used by your device. The connection settings you select depend on your network configuration. For more information, see your network administrator.

<table>
<thead>
<tr>
<th>Connection setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 1 Gbps / Full duplex</td>
<td>Device establishes the maximum link speed and the duplex mode to use on your network. This is the default setting.</td>
</tr>
<tr>
<td>100 Mbps / Full duplex</td>
<td>Device uses a link speed of 100 Mbps (Megabits per second) and a full-duplex mode. Some network configurations only support this setting.</td>
</tr>
<tr>
<td>100 Mbps / Half duplex</td>
<td>Device uses a link speed of 100 Mbps (Megabits per second) and a half-duplex mode. Some network configurations support only this setting.</td>
</tr>
</tbody>
</table>
9.3.2 IP address

Note: When the IP address or the method of assigning an IP address to a device changes, you need to reboot the device for the changes to take effect.

Select how to assign an IP address to your device.

By default, Use a dynamic IP address (DHCP) is used. For information on manually assigning a Static IP address, see "3.1 - Network discovery", page 17.

9.4 RS232

Enable this to virtualize an RS232 (or serial) connection.

9.4.1 Enabling RS232 virtualization

To enable RS232 virtualization, select the type of RS232 connection to use.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>Disable RS232 to close the TCP port used for virtualization.</td>
</tr>
<tr>
<td>Relayed serial over IP</td>
<td>In a relayed connection, the RS232 controller must be connected to your encoder to send commands to an RS232 device that's connected to a decoder. The RS232 connection is independent of any other connection between an encoder and a decoder. When using this option, the RS232 settings of your encoder are sent to the decoder. To establish a relayed connection, the encoder and the decoder must both use Relayed serial over IP.</td>
</tr>
<tr>
<td>Direct serial over IP</td>
<td>In a direct connection, an RS232 controller can send commands directly to the RS232 device connected to your encoder. The RS232 controller isn't physically connected to a device. Any encoder that uses direct serial over IP receives the RS232 commands through an opened TCP port (for example, from a telnet session) and sends these commands to the RS232 device connected to it.</td>
</tr>
</tbody>
</table>
9.4.2 Configuring RS232

Select decoder

| if Relayed serial over IP is selected, select the decoder that’s connected to the RS232 device you want to communicate with. The RS232 connection is virtualized only between your encoder and this decoder. This setting isn’t available if Direct serial over IP is selected. |

TCP port

| if Direct serial over IP is selected, select which port will receive the RS232 commands. (Make sure the port number is available and not used by another service on your network.) The default is 11999. This setting isn’t available if Relayed serial over IP is selected. |

RS232 settings

<table>
<thead>
<tr>
<th>if Relayed serial over IP is selected, the following settings are used by the encoder and the selected decoder. If Direct serial over IP is selected, the following settings are used only for the device connected to your encoder.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baud rate</strong> – The speed, in bits per seconds (or baud), used for the RS232 connection. The default is 115200.</td>
</tr>
<tr>
<td><strong>Data bits</strong> – The number of bits per block of data transmitted. The default is 8.</td>
</tr>
<tr>
<td><strong>Parity</strong> – The type of parity bits (None, Odd, or Even) used for the data transmitted. The default is None.</td>
</tr>
<tr>
<td><strong>Stop bits</strong> – The number of bits used to identify the end of a data block. The default is 1.</td>
</tr>
<tr>
<td><strong>Flow control</strong> – The signal type (None or RTS/CTS) used to pause and resume data transmission. The default is None.</td>
</tr>
</tbody>
</table>

9.5 Date and time

Use this to update the date, time, and time zone of your Maevex device. For more information on these settings, see “12 - Adjusting the date and time of your device”, page 96.
10 Maevex 5150 decoder settings

This enables you to view, configure, and manage settings specific to a Maevex 5150 decoder.

10.1 Decoding

These settings define how the streaming signal is processed by your decoder.

10.1.1 Modify settings

To modify the settings for multiple devices at the same time:

1. From the PowerStream Plus main interface, press the [Ctrl] key, select the tiles of the devices you want to modify, then click Multi-device settings. The device tiles you select must be of the same type.

2. Enable the Modify settings option.

3. Select your preferred device, then make your changes.

4. When you’re done, click Apply. This applies the settings from the preferred device to the other selected devices.

10.1.2 Enable decoding

Click this to start or stop decoding the streaming signal. This button is disabled until a Stream address is entered. If the Stream address is invalid, or if the stream isn’t transmitted, clicking Enable results in an error.

When you start decoding, it may take a few seconds before the video appears on your monitor.
10.1.3 Source

Select an encoder to use as a source. The icon next to the encoder name represents its current status. You can only select encoders listed as Ready ( ), Awaiting connection ( ), Recording ( ), or Encoding ( ).

When a stream is selected, PowerStream Plus uses the current URL as the stream address. When the source is set to Manual, PowerStream Plus uses the URL in Stream address to connect to a stream. If a stream isn’t compatible with your device, an ( ) icon appears.

To connect to a stream outside the subnet and not listed as a source, you need to manually enter the stream address for the encoder stream.

10.1.4 Stream address

This is the URL of the stream to be decoded. When you select a Source, PowerStream Plus automatically adds the stream address.

This control is disabled when the decoder is decoding.

10.1.5 Stream display mode

This is the display mode of the stream received by the decoder. A display mode is a combination of display resolution and vertical refresh rate.

10.1.6 Crop video

Enable this to define which area of the video is visible after decoding. To define the video area, adjust the following:

<table>
<thead>
<tr>
<th>Left</th>
<th>The number of pixels removed from the left side of the original video area. The value must be an even number. The default is 0.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>The number of pixels removed from the top of the original video area. The default is 0.</td>
</tr>
<tr>
<td>Width</td>
<td>The width, in pixels, of the resulting video area. The value must be an even number. The default is 64.</td>
</tr>
<tr>
<td>Height</td>
<td>The height, in pixels, of the resulting video area. The default is 64.</td>
</tr>
</tbody>
</table>
10.1.7 Routing scheme

Select the type of signal received by your decoder:

| Note: When applying settings to multiple devices, make sure static IP addresses and multicast addresses aren't being duplicated. For more information, contact your network administrator. |

| **UDP unicast** | A stream is created for each decoder connected to an encoder. No additional network configuration is required, because unicast establishes a direct connection between an encoder and a decoder. Since each decoder connected to an encoder increases the bandwidth used by that encoder, unicast may use more bandwidth. This is the default. |
| **UDP multicast** | A single stream is created by the encoder and all decoders connected to the same multicast group as the encoder receive that stream. When transmitting to multiple decoders, an encoder that's properly configured for multicast transmission uses less bandwidth. For more information, see "13.3 - Configuring multicast routing", page 103. |

| Note: The stream address for the encoder is the same, regardless of the routing scheme. |

10.1.8 Network latency

Network latency is the number of milliseconds (ms) before your decoder discards an improperly received frame and moves on to the next frame. With slow networks or high-traffic networks, a high network latency is recommended to reduce the possibility of dropping frames.

Latency and lateness are the delay between the time a frame is received and the time it’s ready to be shown.

The default is 160 ms.

10.1.9 Maximum decoding lateness

Maximum decoding lateness is the number of milliseconds (ms) your decoder has to decode a frame before it discards that frame. Lateness varies depending on how difficult a frame is to decode. When setting this value, consider that a stream with only audio is easier to decode than one with only video, and a stream with only video is easier to decode than one with both video and audio.
Latency and lateness are the delay between the time a frame is received and the time it’s ready to be shown.

The default is 160 ms.

10.1.10 Extra delay

Extra delay is the number of milliseconds (ms) between the moment a frame is ready to be shown and the moment it’s actually shown on screen. For example, extra delay enables you to configure multiple decoders connected to the same encoder to display a video at the same time regardless of their location.

The maximum value is 60000 ms. The default is 0 ms.

10.2 Local output (for decoder)

Decoders use the local output settings to output to a monitor.

Your decoder follows these guidelines:

- It uses the display mode of the video stream received by an encoder as its input.
- The display resolution of the video stream can be reduced by using the Crop video option in PowerStream Plus.
- The Output settings (such as Size and transformation and Image appearance) are used to send the video signal to the monitor connected to the decoder.
- It can force a display mode, or it can use the EDID of the monitor detected to determine which display mode to use.

10.2.1 Video

10.2.1.1 Video output type

Select the video type for your output (HDMI or No outputs). Selecting No outputs disables HDMI audio.

10.2.1.2 Size and transformations

This defines how the local output displays video.
10.2.1.2.1 Force display mode

Enable this option to have the decoder use the selected display mode to output the video signal. A display mode is the combination of display resolution and refresh rate.

If this option is disabled, your decoder uses the EDID of the digital monitor (DVI or HDMI) connected to its HDMI connector to determine which display mode to use to output the video signal. To determine the best display mode to use, each monitor has a preferred display mode defined in its EDID. If your decoder supports that display mode, both the decoder and the monitor use that mode. If the decoder doesn't support that display mode, the decoder selects a display mode that both the decoder and the monitor support. For more information, see your monitor documentation or contact your monitor manufacturer.

Depending on your monitor and the display mode used, black borders may appear (on the top and bottom of, on the right and left of, or around your video).

This option is disabled by default.

10.2.1.2.2 Scaling

Select how the video appears in your display area.

<table>
<thead>
<tr>
<th>Center in display</th>
<th>The video appears in the center of the display area. If the video resolution is smaller than the output resolution, the video isn’t scaled. If the video resolution is larger than the output resolution, the video is scaled as if it was set to Fit in display. Black borders may appear around your video. By default, scaling is set to Center in display.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stretch to display</td>
<td>The video is scaled to fit the entire display area. If the display area has a different aspect ratio than the display area, the image may be distorted.</td>
</tr>
<tr>
<td>Fit in display</td>
<td>The video is scaled to fit the display area without distorting the image. If the display area has a different aspect ratio than the display area, black borders appear either above and below or on each side of your video.</td>
</tr>
</tbody>
</table>

10.2.1.3 Image appearance

This enables you to adjust the color settings of your video output.

<table>
<thead>
<tr>
<th>Brightness</th>
<th>Increase or decrease how light or dark the colors appear. The default is 750.</th>
</tr>
</thead>
</table>

Matrox PowerStream Plus – User Guide 89
10.2.2 Audio

The volume for the HDMI channel and Analog channel of your device. The default is 50.

Click Mute to disable an audio output.

10.3 Network

This contains the network settings for the connection and IP address of your device.

10.3.1 Connection settings

Select the link speed and duplex mode used by your device. The connection settings selected depend on your network configuration. For more information, see your network administrator.

<table>
<thead>
<tr>
<th>Speed / Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 1 Gbps / Full duplex</td>
<td>Device establishes the maximum link speed and the duplex mode to use on your network. This is the default setting.</td>
</tr>
<tr>
<td>100 Mbps / Full duplex</td>
<td>Device uses a link speed of 100 Mbps (Megabits per second) and a full-duplex mode. Some network configurations only support this setting.</td>
</tr>
<tr>
<td>100 Mbps / Half duplex</td>
<td>Device uses a link speed of 100 Mbps (Megabits per second) and a half-duplex mode. Some network configurations support only this setting.</td>
</tr>
</tbody>
</table>

10.3.2 IP address

<table>
<thead>
<tr>
<th>IP address method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic IP address</td>
<td>Automatically assigns an IP address using DHCP.</td>
</tr>
<tr>
<td>Static IP address</td>
<td>Manually assigns an IP address using a static configuration.</td>
</tr>
</tbody>
</table>

Note: When the IP address or the method of assigning an IP address to a device changes, you need to reboot the device for the changes to take effect.

Select how to assign an IP address to your device.
By default, **Use a dynamic IP address (DHCP)** is used. For information on manually assigning a **Static IP address**, see “3.1 - Network discovery”, page 17.

### 10.4 RS232

Enable this to virtualize an RS232 (or serial) connection.

#### 10.4.1 Enabling RS232 virtualization

To enable RS232 virtualization, select the type of RS232 connection to use.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>Disable RS232 to close the TCP port used for virtualization.</td>
</tr>
<tr>
<td>Relayed serial over IP</td>
<td>A relayed connection requires the RS232 controller to be connected to your Maevex 5150 encoder to send commands to an RS232 device connected to a decoder. The RS232 connection is independent of any other connection between an encoder and a decoder. When using relayed serial over IP, the RS232 settings of your encoder are sent to the decoder. To establish a relayed connection, the encoder and the decoder must both use relayed serial over IP. While using <strong>Relayed serial over IP</strong>, the <strong>TCP port</strong> setting isn’t available.</td>
</tr>
<tr>
<td>Direct serial over IP</td>
<td>A direct connection allows an RS232 controller to send commands directly to the RS232 device connected to your decoder. The RS232 controller isn’t physically connected to a decoder. A decoder that uses direct serial over IP receives the RS232 commands through an opened <strong>TCP port</strong> (for example, from a telnet session) and sends these commands to the RS232 device connected to it. While using <strong>Direct serial over IP</strong>, select the <strong>TCP port</strong> that will receive the RS232 commands. When selecting a port, make sure the port number is available and not used by another service on your network.</td>
</tr>
</tbody>
</table>
### 10.4.2 Configuring RS232

For more information on the RS232 settings to use, see the documentation for your RS232 devices.

| TCP port | While using **Direct serial over IP**, select which port will receive the RS232 commands. When selecting a port, make sure the port number is available and not used by another service on your network. The default is 11999. While using **Relayed serial over IP**, this setting isn’t available. |
| RS232 settings | While using **Relayed serial over IP**, these settings are used by the Maevex 5150 encoder and the selected decoder. While using **Direct serial over IP**, these settings are used only for the device connected to your encoder.  
- **Baud rate** – The speed in bits per seconds (or baud) used for the RS232 connection. The default is 115200.  
- **Data bits** – The number of bits per block of data transmitted. The default is 8.  
- **Parity** – The type of parity bits (**None, Odd, Even**). The default is None.  
- **Stop bits** – The number of bits used to identify the end of a data block. The default is 1.  
- **Flow control** – The signal type (**None or RTS/CTS**) used to pause and resume data transmission. The default is None. |

### 10.5 Date and time

Use this to update the date, time, and time zone of your Maevex device. For more information on these settings, see “12 - Adjusting the date and time of your device”, page 96.

### 10.6 Failsafe

This feature enables you to show an image or a video file stored on your decoder when the decoder isn’t receiving a stream.

| Local failsafe file | The name of your failsafe file. |
| Disable failsafe | This disables failsafe on your decoder. To delete an image or a video file currently on your decoder, enable **Remove failsafe file from decoder**. If your decoder doesn’t have a failsafe file, this option is disabled. |
10.6.1 Failsafe requirements

The video or image files supported require the following:

- The width ranges from 128 to 1920 and must be a multiple of 16.
- The height ranges from 96 to 1200 and must be an even number.
- A video file must be encoded with the H.264 video codec and the AAC audio codec in MP4 container format.
- A video file can only use mono or stereo audio format.
- The maximum size for the failsafe file is 3.4 GB.

---

<table>
<thead>
<tr>
<th>Enable failsafe</th>
<th>This enables failsafe on your decoder.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Activate failsafe</strong> – Adjust the amount of time, in seconds (up to 300), it will take to display the failsafe file on your decoder after the decoder stops receiving a stream.</td>
</tr>
<tr>
<td></td>
<td><strong>Upload the failsafe file</strong> – Browse to the video (mp4) or image (jpg) file you want to upload to your decoder. This failsafe file is stored on your decoder and appears when the decoder isn’t receiving a stream.</td>
</tr>
</tbody>
</table>

For more information, see "10.6.1 · Failsafe requirements", page 93.
11 Managing your configurations

Maevex 6100 Series only – To save, export, and edit the configurations of your Maevex 6100 Series devices, select a device, then click Manage Configurations.

Note: This option is available only with Maevex 6150, Maevex 6120, and Maevex 6100 products.

11.0.1 Saving a configuration
To save a configuration:

1. Click Manage Configurations, then click Save.
2. Enter a Name and Description for your configuration, then click Save.

11.0.2 Selecting a configuration
To select a configuration:

1. Click Manage Configurations, then click Select.
2. From the list select the Default configuration or a User Defined configuration.
3. Choose how to affect the settings (Processing, Network, and Date and time).
4. When you’re done, click Select.

11.0.3 Editing a saved configuration

11.0.3.1 Renaming
To rename a configuration:

1. Click Manage Configurations, then click Edit.
2. From the list, select a configuration, then click Rename.
3. Enter a new Name or Description, then click Save Close.

11.0.3.2 Deleting
To delete a configuration:

1. Click Manage Configurations, then click Edit.
2 From the list, select a configuration, then click Delete.

### 11.0.3.3 Opening file location

To open the configuration file (.fav) in Explorer:

1 Click Manage Configurations, then click Edit.
2 From the list, select a configuration, then click Open file location.

### 11.0.4 Importing and exporting configurations

#### 11.0.4.1 Importing

To import a configuration:

1 Click Manage Configurations, then click Import → Select folder.
2 When prompted, browse to the folder where your .fav file was saved, select that folder, then click Select Folder.
3 From the list, select the configuration, then click Import.

#### 11.0.4.2 Exporting

To export a configuration:

1 Click Manage Configurations, then click Export → Folder.
2 When prompted, browse to the folder where you want to save your .fav file, then click Select Folder.
3 From the list, select the configuration, then click Export.
12 Adjusting the date and time of your device

Use this to update the date, time, and time zone of your Maevex device.

![image]

The current time settings are listed in the grey box. PowerStream Plus updates this information every two (2) seconds.

**Note:** After applying new settings, it may take some time for the changes to take effect.

12.1 Setting the date and time

Select how to set the date and time for your device.

<table>
<thead>
<tr>
<th>Use current date and time settings of the device</th>
<th>Keep the current date, time, and NTP (Network Time Protocol) synchronization settings for your devices. This is the default.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use date and time of the current system</td>
<td>Use the date and time of your controller system to update your devices. This setting uses the time zone of the controller system. If your controller system and your device are using different time zones, the date and time will differ. This setting disables synchronization with an NTP server.</td>
</tr>
<tr>
<td>Use the following date and time</td>
<td>Use the date and time specified to update your devices. This setting doesn't use the time zone of your controller system. You can use the arrow keys to change the date and time specified. This setting disables synchronization with an NTP server.</td>
</tr>
</tbody>
</table>
12.2 Setting the time zone

Select the time zone to use for your device. When using an NTP server, we recommend setting the time zone of your device.

| Enable synchronization with an NTP server | Use an NTP server to update the date and time for your device at regular intervals. You must provide the NTP server URL, even if one is already stored on your device. For more information on using NTP, contact your network administrator. |
| Disable synchronization with an NTP server | Stop using an NTP server to update the date and time for your device. Disabling NTP keeps the current date and time of the device, but it won’t update the devices at regular intervals. |

| Use current time zone of the device | Use the time zone currently set for your devices. This is the default. |
| Use the following time zone | Change the time zone for your devices to the one selected. Changing the time zone may adjust the date and time for a device. |
13 Troubleshooting

13.1 What to do if you have a problem

If you experience problems with your Matrox product:

- Make sure you’re using the correct connectors, and that all connectors are properly fastened. For more information on the connection setup of your product, see the user guide for your Matrox hardware.
- Review the documentation provided with your Matrox product, including the information in this section, to see if your problem is already addressed. For information on Matrox PowerStream Plus software features and options, see the help file included with your PowerStream Plus software.

If your problem persists, contact Matrox. For more information, see “16 - Customer support”, page 118.

13.2 Common problems and solutions

This section addresses common problems that could prevent you from using your devices.

Problem  Maevex device not discovered on the network

**Cause**  You may not be using the latest version of Matrox PowerStream Plus software, or your Matrox firmware may be out of date.

**Solution**  For your Maevex devices to be properly detected, make sure all Matrox software is up to date.

**Cause**  Your Matrox product may not be properly connected or may be on a different subnet.

**Solution**  Verify the connection and status LEDs on your Matrox product. Also, make sure your Matrox product is properly connected and that all connectors are properly fastened. For more information, see your Matrox Maevex Series User Guide.

**Cause**  Windows Server 2019/20016/2008 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.

1  Windows Server 2008 R2 – From the Start screen, click All Programs → Administrative Tools → Services*. (* You may need administrator rights to access Windows services.)
Windows Server 2019/2016 – Click Start → Administrative tools → Services*. ( * You may need administrator rights to access Windows services.)

2 Double-click SSDP Discovery.

3 Next to Startup type, select Manual or Automatic.

4 Click OK.

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

**Solution**  
Enable network discovery and file sharing on your system.

Windows 10/7 –

1 **Windows 10** – Click Start → Settings → Network & Internet → Ethernet.  
   **Windows 7** – Click Start → Settings* → Control Panel → Network and Internet*.  
   ( * Depending on your version and configuration of Windows, this part of the step may not be necessary.)

2 Click Network and Sharing Center → Change advanced sharing settings. ( * Depending on your version and configuration of Windows, this part of the step may not be necessary.)

3 Under your current profile, make sure the following options are selected:

   - Turn on network discovery
   - Turn on file and printer sharing

4 If you make changes to your current profile settings, click Save changes.

**Cause**  
The firewall for your controller 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 controller system and your Maevex devices. For more information, see "15 - Appendix – Firewall requirements", page 114.

**Problem**  
Can't access Maevex device through PowerStream Plus (listed as 'View only')

**Cause**  
The device may be a recent addition to your environment and has no password.

**Solution**  
Try changing the password for that device (see "4 - Managing users and passwords", page 19).
Cause  Maevex 5150 encoder or 5150 decoder – The device password doesn’t match your environment password.

Solution  Try a configuration reset of your Maevex device. For more information, see your Matrox Maevex Series User Guide.

Solution  Contact your Maevex environment administrator to obtain your device password, then change the device password to match your environment password in PowerStream Plus. For more information, see “4 - Managing users and passwords”, page 19.

Problem  No picture or output at all

Cause  The device may not have started encoding or decoding.

Solution  In PowerStream Plus, make sure the encoding or decoding process has started:

- Maevex 6150/6120/6100 encoder – Listed as Active. The stream you’re trying to connect to needs to be enabled.
- Maevex 5150 encoder – Listed as Awaiting connection or Encoding.
- Maevex 5150 decoder – Listed as Decoding. If the decoder isn’t decoding, verify that the correct URL is being used in the Stream address box. If the URL in Stream address doesn’t match the URL of an encoder, or if the encoder isn’t encoding, attempting to start decoding results in an error.

For more information, see “2.8 - Understanding the status of your devices”, page 16.

Cause  Maevex 5150 encoder – The Use pass through option is enabled, but your monitor is connected to the VGA connector on your encoder.

Solution  If the Use pass through option is enabled, make sure your monitor is connected to the HDMI Out connector.

Solution  In PowerStream Plus, change the local output of your encoder to Use confidence preview.

Cause  Maevex 5150 encoder – The local output settings of your device may be improperly set.

Solution  If the Use confidence preview option is enabled, adjust the following settings under the Output tab in PowerStream Plus:

- Make sure the video output type selected is valid (HDMI + VGA, HDMI, or VGA).
- Disable the Force display mode option.
- Check your Image appearance settings (brightness, contrast, and so on). Image appearance values that are too high or too low may cause the image to disappear.
Solution Decoder – In PowerStream Plus, adjust your local output settings:
   - Disable the Force display mode option.
   - Check your Image appearance settings (brightness, contrast, and so on). Image appearance values that are too high or too low may cause the image to disappear.

Cause Your monitor video controls may be improperly set.
Solution Adjust your monitor controls (brightness, contrast, and so on). For more information, see your monitor manual.

Causes Your monitor may not be properly connected (the connectors aren’t properly fastened or the monitor power cable isn’t firmly in place) or may have been disconnected.
Solution Make sure you’re using the correct connectors, that all connectors are properly fastened, and that all power cables are firmly in place.

Causes If your monitor supports multiple input sources (analog/digital), it may be configured to use the wrong source.
Solution Make sure your monitor is using the correct input source. For more information on selecting the input source for your monitor, see your monitor documentation.

Causes The HDMI cable may have been connected to your encoder or decoder output after the encoding or decoding process started.
Solution Stop, then start the encoding or decoding process again.

Problem Recording starts, then stops
(red dot blinks and then disappears)

Cause The path to the recording destination may be incorrect (for example, the network path is incorrect or unrecognized).
Solution Make sure the network path is correct and the full computer name is specified.
### Problem: Storage path error message when specifying a network shared folder for recording

**Cause:** The path for the network shared folder may be incorrect.

**Solution:** Make sure you’re using the full computer name of the system where the shared folder is located. The full computer name is part of the Windows properties of the system. For example, the full computer name of *networkserver* may be *networkserver.domain.com*. For more information, contact your network administrator.

**Cause:** The file sharing configuration for the system hosting the shared folder may prevent writing operations.

**Solution:** Make sure file sharing is enabled on your host system and that writing is permitted on that folder.

**Cause:** The credentials provided to your encoder may not have writing permissions on the system hosting the shared folder.

**Solution:** Make sure you’re using the proper user credentials (user name and password) for your encoder.

**Solution:** Make sure the permissions of the shared folder allow writing.

**Cause:** The firewall may be enabled on the system that hosts the shared folder.

**Solution:** Add rules to your Windows Firewall settings. For more information, see “15.5 - Adding rules to your Windows Firewall settings”, page 116.

### Problem: Wrong color balance

**Cause:** The local output settings of your encoder or decoder may be improperly set.

**Solution:** Adjust your PowerStream Plus settings. Check your **Image appearance** settings (brightness, contrast, and so on).

**Cause:** Your monitor video controls may be improperly set.

**Solution:** Adjust your monitor controls (brightness, contrast, and so on). For more information, see your monitor manual.

**Cause:** Your monitor may not be properly connected (the connectors aren’t properly fastened or the monitor power cable isn’t firmly in place) or may have been disconnected.

**Solution:** Make sure you’re using the correct connectors, that all connectors are properly fastened, and that all power cables are firmly in place.
Problem: Screen image is cropped, appears off-center, or uses a portion of the screen

Cause: You may be using a lower display resolution than what your monitor supports. If your monitor supports display scaling, the image on your screen may appear blurry. If display scaling isn’t supported, the display may use only a portion of your screen.

Solution: In PowerStream Plus, adjust Force display mode to use the highest display resolution available. This generally results in better image quality.

Problem: Using ‘pass through’, the screen is unusable (Maevex 5150 encoder only) (blank or blinking screen)

Cause: Your monitor may be incompatible with the display mode used by your source.

Solution: Make sure your monitor and your source support similar display modes. To validate the quality of your source, see your Matrox Maevex Series User Guide.

Solution: Change the display mode used by your source.

Solution: Try using a different monitor.

Cause: If your monitor and source aren’t properly synching, your screen may go blank for a few seconds.

Solution: In PowerStream Plus, change the local output of your encoder to Use confidence preview.

Solution: Try using a different monitor.

Solution: Make sure all Matrox software is up to date.
Problem: Decoder loses connection to the encoder

Cause: The encoder’s settings may have changed (for example, the streaming address or IP address). A change may occur dynamically or after a power failure.

Solution: Adjust your PowerStream Plus settings:
- Encoder – Manually change the IP address to the previous address used by your encoder.
- Decoder – Reselect the encoder in your Source box.
- Decoder – If Source is set to Manual, make sure the URL used in the Stream address box matches the stream address used by the encoder.

For more information, see “4.2 - Understanding the status of your devices”, page 13.

Cause: The encoder may have stopped transmitting.

Solution: Make sure your encoder is transmitting.

Problem: PowerStream Plus may be slow to start (several minutes)

Cause: Your controller system may not have access to a DNS (Domain Name System) server.

Solution: Configure your system to use a fixed IP address (such as local host – 127.0.0.1) as the DNS server.

Windows 10/7 –
1. Windows 10 – Click Start → Settings → Network & Internet → Ethernet.
2. Windows 7 – Click Start → Settings* → Control Panel → Network and Internet* → Network and Sharing Center. (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)
3. Click Change adapter settings.
4. Double-click the icon for your network adapter (such as Local Area Connection or Ethernet).
5. Click Properties → Yes*. (* Depending on your version and configuration of Windows, this part of the step may not be necessary.)
7. Select Use the following DNS server addresses.
8. Next to Preferred DNS server, enter 127.0.0.1.
9. Click OK → OK → Close.
Problem  PowerStream Plus stops responding

  Cause Your PowerStream Plus software or Maevex device may have encountered an error.
  Solution Try closing, then restarting Matrox PowerStream Plus software.
  Solution Restart your controller system.

Problem  Maevex device tile is listed as unresponsive (yellow device tile)

  Cause Your network may be slow, causing a delay in the response time from your Maevex device.
  Solution Wait a few minutes, then make sure the status of the device was properly updated.
  Cause Your PowerStream Plus software or device may have encountered an error.
  Solution Try closing, then restarting Matrox PowerStream Plus software.
  Solution If your device status is still listed as initializing, click Reboot to reboot your device.
  Solution Try a configuration reset of your device. For more information, see your Matrox Maevex Series User Guide.

Problem  ‘Web services fails’ message appears after attempting to change decoder settings

  Cause The decoding process may take all the decoder’s resources.
  Solution Stop the decoding process, make your changes, and restart the decoding process.
  Solution When making changes to multiple decoders connected to the same encoder, stop the encoder, make the changes on your decoders, then restart the encoder.

Problem  Black border appears around the video

  Cause The aspect ratio of your video source may not match the aspect ratio of your monitor.
  Solution Use PowerStream Plus software to adjust your Video settings (such as enabling Force display mode and selecting a Scaling option).
  Cause The border may be part of your video.
  Solution Crop your video source:
    1 Under your decoder settings, enable the Crop video option.
    2 Enter values to remove the borders.
Click Apply for your changes to take effect.

**Cause**  Your source uses a display resolution that’s higher than the resolution used to show the video.

**Solution**  Try configuring your source to use a different display resolution.

**Cause**  Your monitor doesn’t support display scaling.

**Solution**  Adjust your video settings:

1. Under **Size and Transformation** of the **Local output** settings of your Maevex device, try selecting **Stretch to display** for scaling.

2. Click **Apply** for your changes to take effect.

**Problem**  Video appears stretched or squished

**Cause**  There may be a problem with your video source.

**Solution**  Verify the quality of your source. For more information, see your Matrox Maevex Series User Guide.

**Cause**  You may be encoding at a resolution that has a different aspect ratio than what your source or output is using.

**Solution**  Try selecting a video size with the same aspect ratio as your source.

- **Maevex 6150/6120/6100 encoder** – Make sure **Force encoding size** is disabled.
- **Maevex 5150 encoder** – Make sure **Use specific video size** is disabled.

**Cause**  The aspect ratio of your source may not match the aspect ratio of your monitor.

**Solution**  Adjust your video settings:

1. Under **Size and Transformation** of the local output settings of your Maevex device, try selecting **Stretch to display** for scaling.

2. Click **Apply** for your changes to take effect.

**Solution**  If possible, set the display resolution of your source to match the aspect ratio of your monitor.

**Cause**  You may be using a lower display resolution than what your monitor supports.

**Solution**  In PowerStream Plus, make sure **Force display mode** is disabled to use the highest display resolution supported by your monitor. This generally results in better image quality.
5 Cause
PowerStream Plus may be configured to modify the size of the video source.

Solution
Adjust your PowerStream Plus settings:

- **Maevex 6150/6120/6100 encoder** – Enable the **Force encoding size** option, then specify the width and height of your video to match the aspect ratio of your source.
- **Maevex 5150 encoder** – Enable the **Use specific video size** option, then specify the width and height of your video to match the aspect ratio of your source.
- **Decoder** – Make sure the settings for **Crop video** are set to properly show the video.

**Problem** Image appears blurry

**Cause** You may be encoding at a different resolution than what your source is using.

**Solution**
- Try selecting a video size with the same aspect ratio as your source.
- If **Use specific video size** is enabled, try disabling it to avoid scaling by the encoder.

**Cause** You may be using a lower display resolution than what your monitor supports, or your monitor supports display scaling.

**Solution** In PowerStream Plus, adjust **Force display mode** to use the highest display resolution available. This generally results in better image quality.

**Problem** Poor video quality or video is jerky (skipping or dropping frames)

**Note:** Jerky video may be the result of slow recording. Slow recording causes frames to be dropped (frames aren’t recorded). If jerky video is caused by frames that were dropped during recording, the problem can only be fixed by recapturing the video under better conditions or with different video settings. For more information, see your Matrox Maevex Series User Guide.

**Cause** PowerStream Plus may not be configured to optimize video or audio quality.

**Solution** When adjusting your encoder or decoder settings, we recommend starting with the default values for all of your settings and modifying the settings as necessary.

**Cause** High network traffic may be degrading the quality of your stream.

**Solution** Make sure your network equipment supports the bandwidth required.
Solution Try using a dedicated network for your Maevex environment. For more information, contact your network administrator.

Solution Try using Matrox PowerStream Plus to increase the **Network latency** of your decoder.

**Cause** There may be too many video devices between your video source and destination, or one or more of the video devices may be degrading the quality of the stream. Adapters, long cables, cable extensions, and improper connections can all affect video signal quality.

Solution If possible, use fewer connections. For example, don’t use cable extensions.

**Problem** **Unstable audio detection** (audio signal undetected or unstable)

**Cause** Your audio driver may not be enabled to pass through HDMI.

**Solution** Test your playback devices:

1. In your Windows taskbar, right-click **Playback devices**.
2. Right-click each Maevex device listed, then click **Test**.

**Problem** **No sound or sound is distorted or too loud**

**Cause** Your capture settings may not match your audio input.

**Solution** Make sure your capture settings are set to capture the proper audio source.

**Cause** Audio cables may be loose, or the audio output device may not be properly connected.

**Solution** Make sure you’re using the correct connectors, all connectors are properly fastened, and that all power cables are firmly in place.

**Cause** There may be a problem with your audio source.

**Solution** Verify the quality of your source. For more information, see your Matrox Maevex Series User Guide.

**Cause** The PowerStream Plus **Audio** setting of your Maevex device may be too low, too high, or muted.

**Solution** Adjust your audio settings for the best performance.
Cause  Maevex 6150/6120/6100 encoder – You may not be using an audio source, or your audio source may not be included in your encoding process.

Solution  Adjust your audio settings:
- Processing – Make sure an Audio source is selected.
- Encoding – Make sure your signals is set to include audio (Audio only or Audio and video) in your encoding.

Cause  Maevex 5150 encoder – If you're using pass through, your HDMI source may disable its audio output if the HDMI output device connected to your encoder doesn't support audio output. This disables the audio output for the encoder and all decoders connected to this encoder.

Solution  Make sure the HDMI output device connected to your encoder supports audio output.

Solution  In PowerStream Plus, change the local output of your encoder to Use confidence preview.

Cause  Maevex 5150 encoder – If you're using pass through, your audio output device may be connected to a connector that has no corresponding input.

Solution  Make sure your audio output device is connected to the proper corresponding audio input connector (for example, HDMI to HDMI in, and Line out to Line in).

Solution  In PowerStream Plus, change the local output of your encoder to Use confidence preview.

Cause  Maevex 5150 encoder – Your source may disable its HDMI audio output when switching from confidence preview to pass through, or vice versa.

Solution  To re-enable the audio signal, try disconnecting and reconnecting your HDMI connector.

Problem  Inconsistent sound quality between video files

Cause  The audio level for the original video sources differs.

Solution  Resample the original video sources to normalize the audio output between sources.

Solution  Your source may be able to normalize audio levels automatically. For more information, see your source documentation.

Problem  Unable to record to LAN2

Cause  A unique IP address may not be specified for the recording location.

Solution  Create a unique IP address for the recording location. For more information, contact your network administrator.
Problem: Unable to decode a multicast stream using VLC media player

Cause: While using RTSP, the VLC media player defaults to using unicast.

Solution: Change your VLC configuration to force multicast.

1. Open VLC media player.
2. Click Tools → Preferences, then select Show settings for all.
4. Select RTP/RTSP, then enable Force multicast RTP via RTSP.
5. When you're done, save your changes.

Problem: Unable to record to network shared folder or Network Attached Storage (NAS)

Cause: An incorrect network path or IP address was specified.

Solution: To make sure the network path is properly recognized by your device, we recommend you provide the full computer name or the IP address of the system where the shared folder is located.

- The full computer name is part of the Windows properties of the system. For example, the full computer name of networkserver may be networkserver.domain.com.
- 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.

For more information, contact your network administrator.
14 Notes and limitations

14.1 General

- A maximum of ten (10) instances of Matrox PowerStream Plus software can be running simultaneously.
- While using a resolution of 3840x2160 at 60 Hz, capture and encoding are supported only in 4:2:0.
- Certain limitations may occur when using scaling or multi-input compositing. For more information, contact Matrox technical support.
- Maevex 6150 encoder, 6120 encoder, and 6100 encoder—10-bit capture is supported only with source resolutions up to 1920x1200p60.
- Maevex 6150 encoder, 6120 encoder, and 6100 encoder—Interlaced video input is converted to progressive mode before encoding. Only the local pass through output will be interlaced (same as input signal).
- Video capture and streaming of protected content isn't supported.
- Maevex 5150 encoder—Changing the display resolution of your monitors while your encoder or decoder are outputting to your monitors may cause your devices to fail.
- If an encoder isn’t properly disconnected, decoders connected to this encoder device may still attempt to connect to it.
- Maevex 5150 encoder—The analog audio volume on the decoder device may be higher than on the encoder device, even though the volume on both devices is set to the same level.
- Maevex 5150 encoder—An encoder supports up to 8 simultaneous streams (1080p at 15Mb/s). When counting streams, a multicast stream is a unique stream regardless of the number of decoders receiving that stream.
- Windows 10/7—If the settings window of a device is open when your controller system returns from sleep mode, you may receive an error message that a device is no longer active. Close and reopen the settings window of that device to view the device properties.
- Windows Server 2019, Server 2016, and Server 2008 R2—Make sure the SSDP Discovery service, network discovery, and file sharing are enabled.
14.2 Audio

- Maevex 6150 encoder – Using analog and digital (HDMI) audio simultaneously from the same input channel isn’t supported.

14.3 Recording

- Maevex 6150 encoder – When recording, make sure there’s enough available space on the destination device (USB memory or network drive) before starting to record. If the recorded file becomes larger than the available space, the recording file won’t be able to close and the data won’t be readable.

14.4 Playback

- Maevex 5150 encoder – Audio cuts out briefly when enabling or disabling the Use pass through option.
- Playback of content with different audio sampling rates may cause issues with third-party players (such as VLC).

14.5 Date and time

- PowerStream Plus updates the date and time information of your device every two (2) seconds.

14.6 Network

- If your network is slow, congested, or experiencing high traffic, your recording may fail. For more information, contact your network administrator.
- If a decoder uses a stream from an encoder located on a different subnet, the quality of the video output from the decoder may be degraded.
- When transmitting in multicast on a large network, we recommend using a router with multicast addressing support and switches with IGMP v2 support.
- Slow response from certain routers may cause a slow device detection in PowerStream Plus.
Windows 10/7 – If your controller system doesn't have access to a DNS (Domain Name System) server, or if response from its DNS server is slow, PowerStream Plus may take a long time to start up (several minutes). To avoid this delay, configure your controller system to use a fixed IP address (such as local host 127.0.0.1) as its DNS server. For more information, see “PowerStream Plus may be slow to start”, page 104.
15 Appendix – Firewall requirements

The following are the firewall requirements for your controller system and for a network with a Maevex environment.

15.1 PowerStream Plus software

The following are the firewall requirements for your controller system.

<table>
<thead>
<tr>
<th>Network Ports</th>
<th>Type</th>
<th>Inbound</th>
<th>Outbound</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>20, 21</td>
<td>TCP</td>
<td>—</td>
<td>✓</td>
<td>FTP: Failsafe file upload*</td>
</tr>
<tr>
<td>53</td>
<td>TCP</td>
<td>—</td>
<td>✓</td>
<td>DNS: DNS requests</td>
</tr>
<tr>
<td>443†</td>
<td>TCP</td>
<td>—</td>
<td>✓</td>
<td>HTTPS: PowerStream Plus commands</td>
</tr>
<tr>
<td>1900, 1910†</td>
<td>UDP</td>
<td>✓</td>
<td>✓</td>
<td>UPnP: Microsoft SSDP for discovery of UPnP devices</td>
</tr>
</tbody>
</table>

* Maevex 5150 decoder only.
† Minimum requirements.

Note: ICMP must be enabled (ping)

15.2 Firmware updater

The following are the firewall requirement for a system running the Matrox Firmware Updater.

<table>
<thead>
<tr>
<th>Network Ports</th>
<th>Type</th>
<th>Inbound</th>
<th>Outbound</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>20, 21</td>
<td>TCP</td>
<td>—</td>
<td>✓</td>
<td>FTP: Firmware file transfer to devices</td>
</tr>
<tr>
<td>22*</td>
<td>TCP</td>
<td>✓</td>
<td>✓</td>
<td>SSH: Firmware update commands</td>
</tr>
<tr>
<td>443*</td>
<td>TCP</td>
<td>—</td>
<td>✓</td>
<td>HTTPS: Authentication and firmware update commands</td>
</tr>
<tr>
<td>1900, 1910*†</td>
<td>UDP</td>
<td>✓</td>
<td>✓</td>
<td>UPnP: Microsoft SSDP for discovery of UPnP devices</td>
</tr>
</tbody>
</table>

* Minimum requirements.
15.3 Maevex devices

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

<table>
<thead>
<tr>
<th>Network Ports</th>
<th>Type</th>
<th>Inbound</th>
<th>Outbound</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>20, 21</td>
<td>TCP</td>
<td>✓</td>
<td>—</td>
<td>FTP: Failsafe file upload</td>
</tr>
<tr>
<td>22*</td>
<td>TCP</td>
<td>✓</td>
<td>✓</td>
<td>SSH: Firmware update commands</td>
</tr>
<tr>
<td>69</td>
<td>UDP</td>
<td>—</td>
<td>✓</td>
<td>DHCP: DHCP client</td>
</tr>
<tr>
<td>123</td>
<td>UDP</td>
<td>✓</td>
<td>✓</td>
<td>NTP: Network Time Protocol</td>
</tr>
<tr>
<td>161</td>
<td>UDP</td>
<td>✓</td>
<td>✓</td>
<td>SNMP: Network management (public community string)</td>
</tr>
<tr>
<td>443*</td>
<td>TCP</td>
<td>✓</td>
<td>—</td>
<td>HTTPS: PowerStream Plus commands, and authentication and firmware update</td>
</tr>
<tr>
<td>1900*</td>
<td>UDP</td>
<td>✓</td>
<td>✓</td>
<td>UPnP: Microsoft SSDP for discovery of UPnP devices</td>
</tr>
<tr>
<td>Ephemeral*</td>
<td>UDP</td>
<td>✓</td>
<td>✓</td>
<td>RTP/RTCP: Audio and video streams and control</td>
</tr>
<tr>
<td>8554 (Maevex 5150), 3049 (Maevex 6100)*</td>
<td>TCP</td>
<td>✓</td>
<td>✓</td>
<td>RTSP: Streaming (configurable)†</td>
</tr>
<tr>
<td>12000‡</td>
<td>TCP</td>
<td>✓</td>
<td>✓</td>
<td>RS232: RS232 virtualization§</td>
</tr>
</tbody>
</table>

* Minimum requirements.
† For more information, see “9.1.5.1 - Stream to network”, page 76.
‡ Fixed value when using the Relayed serial over IP feature in PowerStream Plus. User defined when using the Direct serial over IP feature in PowerStream Plus.
§ Maevex 5150 encoder and 5150 decoder only.

15.4 Accessing 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.

To access your Windows Firewall settings:

Windows 10/7 –

1. Windows 10 – Click **Start**  ➔ **Settings**  ➔ **Network & Internet**  ➔ **Ethernet**  ➔ **Windows Firewall.**
15.5 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.

### Windows 10/7

1. Windows 10 – Click **Start → Settings → Network & Internet → Ethernet → Windows Firewall**.
   
   Windows 7 – Click **Control Panel → Network and Internet → Network and Sharing Center**. (* Depending on your configuration, these steps may be unnecessary. *)

2. Windows 10 – In the left panel, click **Advanced Settings**.
   
   Windows 7 – In the left panel, click **Windows Firewall → Advanced Settings**.

3. Click **Inbound Rules**.

4. In the **Actions** panel, click **New Rule**. Configure the new rule with the following settings:
   
   - **Rule** – Select **Custom**.
   
   - **Program** – Select **All programs**.
   
   - **Protocol and Ports** – Next to **Protocol**, select TCP. Next to **Local port**, select **Specific ports**. For the port number, enter **445**. Next to **Remote port**, select **All Ports**.
   
   - **Scope** – Under the remote IP address, add the IP range you want to use for your encoders. You can use a range (such as **192.168.1.0/24**) or a single IP address (such as **192.152.168.62**).
   
   - **Action** – Select **Allow the connection**.
   
   - **Profile** – Select the network location of your system (**Domain**, **Private**, or **Public**).
   
   - **Name** – Enter the name for your rule (such as **Maevex Encoder Recording – TCP rule**).

5. In the **Actions** panel, click **New Rule**. Configure the new rule with the following settings:
   
   - **Rule type** – Select **Custom**.
   
   - **Program** – Select **All programs**.

- **Scope** – Under the remote IP address, add the IP range you want to use for your encoders. You can use a range (such as 192.168.1.0/24) or a single IP address (such as 192.152.168.62).

- **Action** – Select **Allow the connection**.

- **Profile** – Select the network location of your system (**Domain**, **Private**, or **Public**).

- **Name** – Enter the name for your rule (such as **Maevex Encoder Recording – ICMPv4 rule**).

For more information, see your network administrator.
16 Customer support

16.1 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.

16.2 Technical support

Matrox values your business and offers professional support for your Matrox product.

If your product was purchased through a Matrox dealer, contact your dealer for product support. This is the quickest and most effective method of technical assistance. Your dealer is familiar with your complete system.

If your product was purchased through Matrox, contact your Matrox representative or visit our technical support Web site at www.matrox.com/graphics/support.

16.2.1 Information we need

Please give a complete description of the problem, and include:

- Matrox product serial number, model number, revision number, and firmware number.
- Source specifications.
- Controller system (system running PowerStream) specifications.
- Specific PowerStream Plus options and features used.
- Decoding software and/or hardware.

16.3 Firmware package

A more recent firmware package may support more features and may offer increased capabilities. To obtain the latest firmware package, see the Matrox Web site (www.matrox.com/maevexsw).

16.4 View your warranty information

Matrox makes warranty information available on the Matrox site (www.matrox.com/graphics/en/support/warranty/).
16.5 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).

16.6 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.
**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。

**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.

**EUROPE**

(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.
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.

Information für europäische Anwender – Konformitätserklärung

Anmerkung für die Matrox Hardware-Produktunterstützung durch dieses Handbuch


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 relativa 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.

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.

EUROPE

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.

Informations aux utilisateurs Européens – Réglementation des déchets d’équipements électriques et électroniques (DEEE)


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


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

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. • Evitez 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.
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 B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: • Reorient or relocate the receiving antenna • Increase the separation between the equipment and receiver • Connect the equipment into an outlet on a circuit different from that to which the receiver is connected • Consult the dealer or an experienced radio/TV technician for help.

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.

Declaration of conformity of a Class B digital device according to the FCC rules

We, the Responsible Party Matrox, 2002 Ridge Road, Champlain, NY 12919 • Telephone: (514) 822-6000 (extension 2026) • Attention: Conformity Group Matrox

Declaration The Matrox hardware products supported by this guide comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) these devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation. Any question regarding this declaration should be forwarded to the above coordinates.

(English) Innovation, Science and Economic Development Canada

Remark for the Matrox hardware products supported by this guide These digital devices do not exceed the Class B 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 Ces appareils numériques n’émettent aucun bruit radioélectrique dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par Industrie Canada.

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.

(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.
**JAPAN**

VCCI Compliance Statement

Remark for the Matrox hardware products supported by this guide This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

```
この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。
```

**KOREA**

B 급 기기 (가정용 방송통신기자재) 이 기기는 가정용 (B 급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

**EUROPE**

(English) European user's information – Information on Conformity

Remark for the Matrox hardware products supported by this guide These devices comply with EC Directive 2014/30/EU for a Class B 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. These products have been tested in a typical class B compliant host system. It is assumed that these products will also achieve compliance in any class B compliant system.

(Français) Informations aux utilisateurs Européens – Informations sur la 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 B. 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. Ces produits ont été testés dans un système hôte typique compatible classe B. On suppose qu’ils présenteront la même compatibilité dans tout système compatible classe B.

(Deutsch) Information für europäische Anwender – Konformitäts-Informationen


(Italiano) Informazioni per gli utenti europei – Informazioni sulla 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 B. 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. Questi prodotti sono stati provati in un tipico sistema host conforme alla classe B. Inoltre, si dà per scontato che questi prodotti acquisiranno la conformità in qualsiasi sistema conforme alla classe B.

(Español) Información para usuarios europeos – Información sobre la 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 B. 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. Se supone que estos productos cumplirán también con las normas en cualquier sistema que responda a los requisitos de la clase B.

(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)

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

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

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.
Disclaimer

THE INFORMATION IN THIS GUIDE IS SUBJECT TO CHANGE AT ANY TIME AND WITHOUT NOTICE.

Matrox Graphics Inc. reserves the right to make changes in specifications at any time and without notice. The information provided by this document is believed to be accurate and reliable at the time it is written. However, no responsibility is assumed by Matrox Graphics Inc. for its use, for its reproduction and/or distribution, in whole or in part; nor for any infringements of patents or other rights of third parties resulting from its use.

Responsabilité

LES INFORMATIONS CONTENUES DANS CE MANUEL PEUVENT ÊTRE MODIFIÉES EN TOUT TEMPS ET CE SANS PRÉAVIS.

Les Graphiques Matrox Inc. se réserve le droit de modifier les spécifications en tout temps et ce sans préavis quelconque. Les informations contenues dans ce manuel sont reconnues comme étant précises et fiables à la date de rédaction. Cependant, Matrox Graphics Inc. n’assume aucune responsabilité concernant leur utilisation, leur reproduction et/ou distribution, en tout ou en partie, ni leur contrefaçon de brevets ou de tout autre droit appartenant à des tiers résultant de leur utilisation. Aucune licence n’est accordée sur aucun brevet ou droit d’exploiter un brevet de Matrox Graphics Inc.

Haftungsablehnungserklärung

DIE IN DIESEM HANDBUCH ENTHALTENEN ANGABEN UND DATEN KÖNNEN OHNE VORHERIGE ANKÜNDIGUNG GEÄNDERT WERDEN.

Die Matrox Graphics Inc. behält sich das Recht vor, jederzeit und ohne Ankündigung technische Daten zu ändern. Zum Zeitpunkt der Erstellung dieses Handbuchs sind die Inhalte korrekt und verlässlich. Weiterhin übernimmt Matrox Graphics Inc. keinerlei Verantwortung für die Benutzung dieses Handbuchs, die Vervielfältigung und/oder Verteilung im Ganzen oder zum Teil; weder für Verstöße gegen Patentrechte noch für andere Rechte Dritter, die aus seinem Gebrauch resultieren mögen. Es werden keinerlei Lizenzrechte gewährt für sämtliche Patente oder Patentrechte der Matrox Graphics Inc.

Discrezionalità

LE INFORMAZIONI CONTENUTE NEL PRESENTE DOCUMENTO SONO SOGGETTE A MODIFICHE IN QUALUNQUE MOMENTO E SENZA PREAVVISO.

Matrox Graphics Inc. si riserva il diritto di apportare variazioni di qualunque tipo alle specifiche tecniche in qualunque momento e senza alcun preavviso. Le informazioni contenute in questa documentazione sono ritenute corrette e attendibili al momento della pubblicazione. In ogni caso, non è imputabile a Matrox Graphics Inc. nessuna responsabilità per il loro utilizzo, per la loro distribuzione e/o riproduzione completa o in parte, come nessuna violazione a brevetti o diritti di altri produttori derivante dal loro utilizzo.

Renuncia

LA INFORMACION QUE CONTIENE EL PRESENTE MANUAL ESTA SUJETA A CAMBIOS SIN PREVIO AVISO EN CUALQUIER MOMENTO.

Matrox Graphics Inc. se reserva el derecho de realizar modificaciones en cualquier momento y sin previo aviso. La información facilitada en este documento se considera que es exacta y fiable hasta la fecha de publicación. Sin embargo, Matrox Graphics Inc. no asume ninguna responsabilidad por su uso, por su reproducción y/o distribución parcial o total; ni por cualquier infracción de patentes u otros derechos de terceras partes derivados de su uso. No se concede ninguna licencia bajo cualesquiera patentes o derechos de patentes de Matrox Graphics Inc.