Matrox ConvertIP

Installation and User Guide

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Contents

Chapter 5: Matrox ConvertIP Hardware Specifications

Appendix A: Providing adequate airflow to your ConvertIP device

Appendix B: ConvertIP LED status indicators and button functions

Appendix C: Matrox Software License Agreement

CHAPTER 1

Introduction

This chapter includes the following topics:

About Matrox ConvertIP

The Matrox ConvertIP family of products are standards-based transmitters and receivers that enable interoperable, cost-efficient, and scalable networks in Broadcast and Pro AV environments.

- **Broadcast and media applications:** Switching from SDI to IP broadcast networks can be costly and complex. Matrox ConvertIP is a stand-alone SMPTE ST 2110 converter engineered to help you easily transition to IP. Supporting multiple input/output connectivity options, ConvertIP is designed to effortlessly convert ST 2110 IP signals to or from SDI or HDMI. ConvertIP devices also support up to 25 Gbps connectivity allowing for the delivery of uncompressed 4K video over ST 2110.
- **Professional AV/IT applications:** Matrox ConvertIP is a series of standards-based, IPMX-ready encoders and decoders designed for maximum flexibility, scalability, and interoperability. ConvertIP provides multiple input/output connectivity options for converting SMPTE ST 2110 IP signals between HDMI, HDBaseT, or SDI. ConvertIP also supports compressed and uncompressed 4K over IP signal transmission, perfect for a variety of workflows—all from a single standalone device.

For more information on the Matrox ConvertIP family of products, see our *website* for a full description of the benefits and features.

Matrox safety information

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

Installation and operation

- Read and retain all instructions. Only use your Matrox product according to the instructions, operating ranges, and guidelines provided in the Matrox user guide and other related Matrox documentation. Failure to follow these instructions could result in damage to your product or injury to the user or installer.
- Don't expose your Matrox product to rain, water, condensation, or moisture.
- **Caution: Hot Surface, Do Not Touch**
  Your Matrox product can become hot while operating. Ensure that your computer cover is secured in place before turning it on.
  Always turn off your computer, unplug it, and then wait for it to cool before removing the cover of your computer to touch any of its internal parts or to install your Matrox card. Allow hot surfaces to cool before touching your Matrox unit.
- **Attention: Surface chaude, ne pas toucher**
  Votre produit Matrox peut devenir chaud durant son fonctionnement. Assurez-vous de bien fermer le couvercle de votre ordinateur avant de l'allumer.
  Éteignez votre ordinateur, débranchez-le et attendez qu'il refroidisse avant d'ouvrir son couvercle pour accéder à ses parties internes ou pour installer votre carte Matrox. Laissez les surfaces chaudes refroidir avant de toucher votre appareil Matrox.
- Static electricity can severely damage electronic parts. Before touching any electronic parts, drain static electricity from your body (for example, by touching the metal frame of your computer).
- When handling a card, carefully hold it by its edges and avoid touching its circuitry.
- Don't stack devices or place devices so close together that they're subject to recirculated or preheated air.
- Don't operate your system or Matrox product near a heat source or restrict airflow to your system, and make sure the ambient temperature doesn't exceed the maximum recommended temperatures. Don't block ventilation holes on your unit or system.

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

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

- Any AC-powered product must be connected to a grounded outlet installed by a licensed electrician. Don't defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug doesn't fit into your outlet, consult a licensed electrician to replace the obsolete outlet.
- Make sure that nothing rests on the power cables and that the cables aren't located where they can be stepped on, pinched, or tripped over.
- Don't use damaged power cables.
- Unplug your system or device during lightning storms or if unused for long periods of time.

If your product includes laser-based technology

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

If your product includes a battery

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

Repair

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

Supported web browsers and operating systems

Supported web browsers

Matrox ConvertIP currently supports Google Chrome only (on Windows and macOS). Other web browsers may work but have not been fully validated by Matrox.

Supported operating systems

Since you configure Matrox ConvertIP using your web browser (see *Supported web browsers*), there is no specific operating system requirement. The application Matrox ConvertIP Manager (see *Supported applications*) supports Microsoft Windows 11 and Windows 10 (x64).

Supported applications

The Matrox ConvertIP devices are a series of stand-alone transmitter and receiver devices, but they are also designed to work with other Matrox applications:

- **Matrox ConductIP:** Matrox ConductIP is a media routing appliance and software that gives you a real-time, comprehensive view of all media content on your IP network while allowing you to organize devices based on your unique setup.

  Designed to simplify content distribution in AV networks of any size, ConductIP enables you to manage video, audio, and ancillary data streams, whether they come from native IP devices or are converted from your existing broadcast and ProAV equipment.

- **Matrox ConvertIP Manager:** Matrox ConvertIP Manager is an executable utility application that allows you to manage multiple ConvertIP devices over your network. You can connect transmitters and receivers, update multiple ConvertIP devices simultaneously, and more.

You can use Matrox ConvertIP without these added applications, but using them will unlock a greater range of functionality for your transmitter/receiver workflow.

CHAPTER 2

Matrox ConvertIP Hardware Connections

This chapter includes the following topics:

Connecting your Matrox ConvertIP SRH

This section shows the basic button functions and connections for the Matrox ConvertIP SRH device.

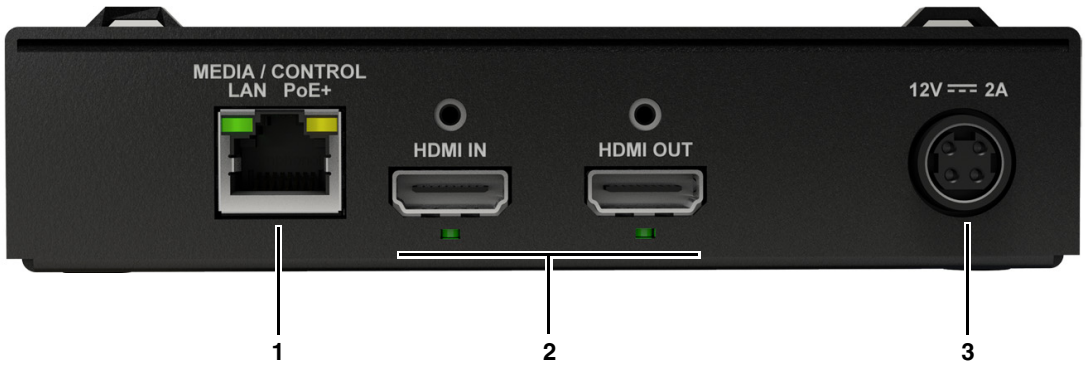
NOTE For complete information on LED behavior and button functions, see "*ConvertIP LED status indicators and button functions* on page *65*.

Front

	LEDs / Buttons	Description
1	**Main LEDs**	• **TX**: When green, indicates the ConvertIP is in Transmitter (TX) mode. • **Status:** When flashing green, the device is encoding or decoding depending on what mode it is in. When solid green, the device is powered on, but idle. • **RX**: When green, indicates the ConvertIP is in Receiver (RX) mode. When ConvertIP is powered up for the first time, it will be in RX mode.
2	**Test**	In TX mode, press and hold for 5 seconds and release to output a valid multicast stream at the settings specified in the ConvertIP user interface. An input does not need to be connected. In RX mode, press and hold for 5 seconds and release to ensure the HDMI or SDI cable is good and the connection between ConvertIP and the monitor or downstream device is valid. A valid network connection is not needed to use this. When finished, press the button for one second to return to standard operation.
3	**Mode**	Press and hold simultaneously with the **Reset** button for one second to switch the ConvertIP from transmitter to receiver and vice-versa. ConvertIP will reboot to switch modes.

	LEDs / Buttons	Description
4	**Reset**	Reboots the ConvertIP with a short press, or resets to factory default settings with a long press of about five seconds (until the **Status** light flashes green).

Rear



	Connections	Description
1	**MEDIA / CONTROL LAN PoE+**	Connect to your media network. You can also power the ConvertIP from this port (Power over Ethernet).
2	**HDMI IN**	• **In TX mode:** Connect an HDMI video source to this connector when in transmitter mode. • **In RX mode:** Connection is not used in receiver mode.
	HDMI OUT	• **In TX mode:** Not used. • **In RX mode:** Connect an HDMI monitor to show the received ST 2110 or IPMX video signal.
4	**Power**	If you do not want your ConvertIP to be powered over the Ethernet connection, connect your 12V DC power supply to this port (sold separately).

Connecting your Matrox ConvertIP DRH

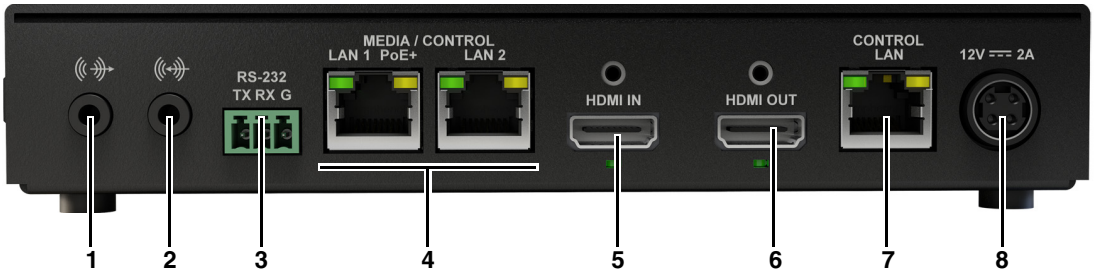
This section shows the basic button functions and connections for the Matrox ConvertIP DRH device.

NOTE For complete information on LED behavior and button functions, see "*ConvertIP LED status indicators and button functions* on page *65*.

Front

	LEDs / Buttons	Description
1	**Main LEDs**	• **TX:** When green, indicates the ConvertIP is in Transmitter (TX) mode. • **Status:** When flashing green, the device is encoding or decoding depending on what mode it is in. When solid green, the device is powered on, but idle. • **RX:** Indicates the ConvertIP is in Receiver (RX) mode. When ConvertIP is powered up for the first time, it will be in RX mode.
2	**Test**	In TX mode, press and hold for 5 seconds and release to output a valid multicast stream at the settings specified in the ConvertIP user interface. An input does not need to be connected. In RX mode, press and hold for 5 seconds and release to ensure the HDMI or SDI cable is good and the connection between ConvertIP and the monitor or downstream device is valid. A valid network connection is not needed to use this. When finished, press the button for one second to return to standard operation.
3	**Mode**	Press and hold simultaneously with the **Reset** button for one second to switch the ConvertIP from transmitter to receiver and vice-versa. ConvertIP will reboot to switch modes.
4	**Reset**	Reboots the ConvertIP with a short press, or resets to factory default settings with a long press of about five seconds (until the **Status** light flashes green).

Rear



	Connections	Description
1	**Audio Out**	To be supported in a future release.
2	**Line In**	To be supported in a future release.
3	**RS-232** **TX RX G**	To be supported in a future release.
4	**Media / Control** **LAN 1 PoE+** **LAN 2**	Connect **LAN 1 POE+** to your media network. You can also power the ConvertIP from this port (Power over Ethernet). Connect **LAN 2** to your redundant network (if available).
5	**HDMI IN**	• **In TX mode:** Connect an HDMI video source to this connector when in transmitter mode. • **In RX mode:** Connection is not used in receiver mode.
6	**HDMI OUT**	• **In TX mode:** Connect an HDMI monitor to view the HDMI IN video source content. • **In RX mode:** Connect an HDMI monitor to show the received ST 2110 or IPMX video signal.
7	**Control LAN**	If you want to have media and control on separate networks, connect **CONTROL LAN** to a network other than your media network. If your media network is static, connect this port to a DHCP-enabled network, and then log in to ConvertIP to set the static IP address.
8	**Power**	If you do not want your ConvertIP to be powered over the Ethernet connection, connect your 12V DC power supply to this port (sold separately).

Connecting your Matrox ConvertIP DSH

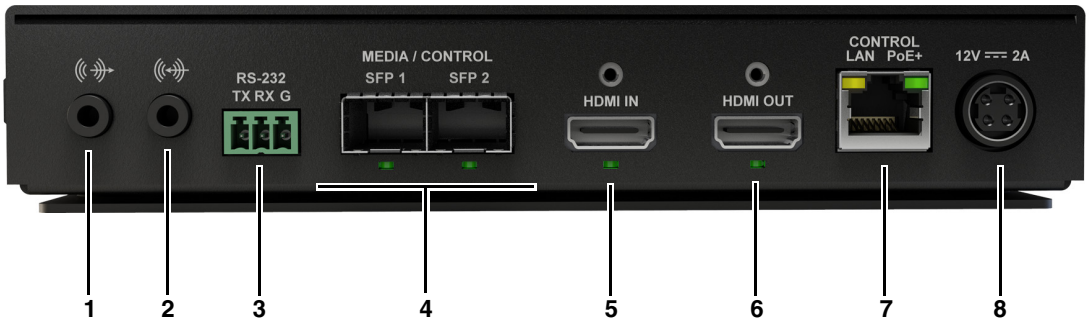
This section shows the basic button functions and connections for the Matrox ConvertIP DSH device.

NOTE For complete information on LED behavior and button functions, see "*ConvertIP LED status indicators and button functions*" on page *65*.

Front

	LEDs / Buttons	Description
1	**Main LEDs**	• **On = TX / Off = RX:** Indicates the ConvertIP mode. When on, the device is in Transmitter mode. When off, the device is in Receiver mode. • **Status:** When flashing, the device is encoding or decoding. When solid, the device is idle. • **On = Uncomp / Off = Comp:** Indicates the compression mode. When on, the device is streaming uncompressed content. When off, the device is streaming compressed content.
2	**Test**	In TX mode, press and hold for 5 seconds and release to output a valid multicast stream at the settings specified in the ConvertIP user interface. An input does not need to be connected. In RX mode, press and hold for 5 seconds and release to ensure the HDMI or SDI cable is good and the connection between ConvertIP and the monitor or downstream device is valid. A valid network connection is not needed to use this. When finished, press the button for one second to return to standard operation.
3	**Mode**	Press and hold simultaneously with the **Reset** button for one second to switch the ConvertIP from transmitter to receiver and vice-versa. ConvertIP will reboot to switch modes.
4	**Reset**	Reboots the ConvertIP with a short press, or resets to factory default settings with a long press of about five seconds (until the **Status** light flashes green).

Rear



	Connections	Description
1	**Audio Out**	To be supported in a future release.
2	**Line In**	To be supported in a future release.
3	**RS-232** **TX RX G**	To be supported in a future release.
4	**Media / Control** **SFP 1 SFP 2**	Connect **SFP 1** to your media network. Connect **SFP 2** to your redundant network (if available).
5	**HDMI IN**	• **In TX mode:** Connect an HDMI video source to this connector when in transmitter mode. • **In RX mode:** Connection is not used in receiver mode.
6	**HDMI OUT**	• **In TX mode:** Connect an HDMI monitor to view the HDMI IN video source content. • **In RX mode:** Connect an HDMI monitor to show the received ST 2110 or IPMX video signal.
7	**CONTROL LAN** **PoE+**	If you want to have media and control on separate IP addresses, connect **CONTROL LAN** to a network other than your media network. If your media network is static, connect this port to a DHCP-enabled network, and then log in to ConvertIP to set the static IP address.
8	**Power**	If you do not want your ConvertIP to be powered over the Ethernet connection, connect your 12V DC power supply to this port (sold separately).

Connecting your Matrox ConvertIP DRS

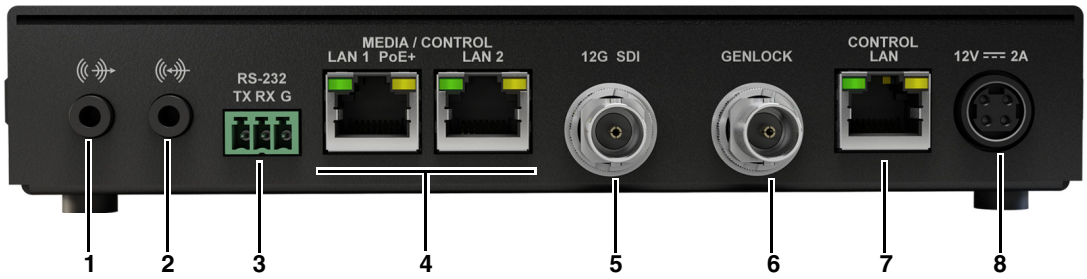
This section shows the basic button functions and connections for the Matrox ConvertIP DRS device.

NOTE For complete information on LED behavior and button functions, see "*ConvertIP LED status indicators and button functions*" on page *65*.

Front

	LEDs / Buttons	Description
1	**Main LEDs**	• **TX**: When green, indicates the ConvertIP is in Transmitter (TX) mode. • **Status**: When flashing green, the device is encoding or decoding depending on what mode it is in. When solid green, the device is powered on, but idle. • **RX**: Indicates the ConvertIP is in Receiver (RX) mode. When ConvertIP is powered up for the first time, it will be in RX mode.
2	**Test**	In TX mode, press and hold for 5 seconds and release to output a valid multicast stream at the settings specified in the ConvertIP user interface. An input does not need to be connected. In RX mode, press and hold for 5 seconds and release to ensure the HDMI or SDI cable is good and the connection between ConvertIP and the monitor or downstream device is valid. A valid network connection is not needed to use this. When finished, press the button for one second to return to standard operation.
3	**Mode**	Press and hold simultaneously with the **Reset** button for one second to switch the ConvertIP from transmitter to receiver and vice-versa. ConvertIP will reboot to switch modes.
4	**Reset**	Reboots the ConvertIP with a short press, or resets to factory default settings with a long press of about five seconds (until the **Status** light flashes green).

Rear



	Connections	Description
1	**Audio Out**	To be supported in a future release.
2	**Line In**	To be supported in a future release.
3	**RS-232** **TX RX G**	To be supported in a future release.
4	**Media / Control** **LAN 1 PoE+** **LAN 2**	Connect **LAN 1 POE+** to your media network. You can also power the ConvertIP from this port (Power over Ethernet). Connect **LAN 2** to your redundant network (if available).
5	**12G SDI**	• **In TX mode (in/out connector is green):** Connect an SDI video source to this connector when in transmitter mode. • **In RX mode (in/out connector is red):** Connect an SDI monitor to this connector to show the received ST 2110 or IPMX video signal when in receiver mode.
6	**Genlock**	To be supported in a future release.
7	**Control LAN**	If you want to have media and control on separate networks, connect **CONTROL LAN** to a network other than your media network. If your media network is static, connect this port to a DHCP-enabled network, and then log in to ConvertIP to set the static IP address.
8	**Power**	If you do not want your ConvertIP to be powered over the Ethernet connection, connect your 12V DC power supply to this port (sold separately).

Connecting your Matrox ConvertIP DSS

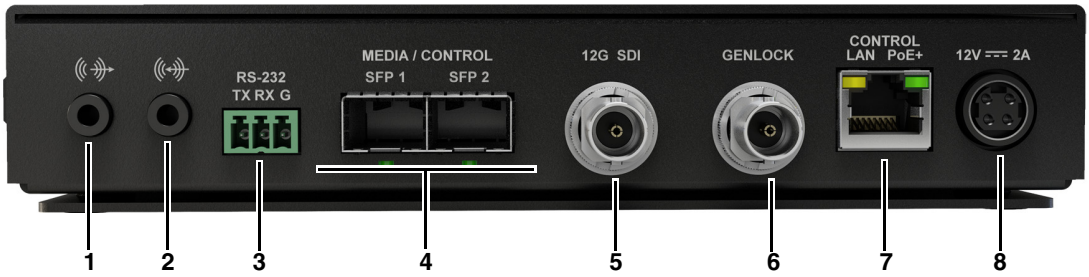
This section shows the basic button functions and connections for the Matrox ConvertIP DSS device.

NOTE For complete information on LED behavior and button functions, see "*ConvertIP LED status indicators and button functions*" on page *65*.

Front

	LEDs / Buttons	Description
1	**Main LEDs**	• **On = TX / Off = RX**: Indicates the ConvertIP mode. When on, the device is in Transmitter mode. When off, the device is in Receiver mode. • **Status**: When flashing, the device is encoding or decoding. When solid, the device is idle. • **On = Uncomp / Off = Comp**: Indicates the compression mode. When on, the device is streaming uncompressed content. When off, the device is streaming compressed content.
2	**Test.**	In TX mode, press and hold for 5 seconds and release to output a valid multicast stream at the settings specified in the ConvertIP user interface. An input does not need to be connected. In RX mode, press and hold for 5 seconds and release to ensure the HDMI or SDI cable is good and the connection between ConvertIP and the monitor or downstream device is valid. A valid network connection is not needed to use this. When finished, press the button for one second to return to standard operation.
3	**Mode**	Press and hold simultaneously with the **Reset** button for one second to switch the ConvertIP from transmitter to receiver and vice-versa. ConvertIP will reboot to switch modes.
4	**Reset**	Reboots the ConvertIP with a short press, or resets to factory default settings with a long press of about five seconds (until the Status light flashes green).

Rear



	Connections	Description
1	**Audio Out**	To be supported in a future release.
2	**Line In**	To be supported in a future release.
3	**RS-232** **TX RX G**	To be supported in a future release.
4	**Media / Control** **SFP 1 SFP 2**	Connect **SFP 1** to your media network. Connect **SFP 2** to your redundant network (if available).
5	**12G SDI**	• **In TX mode (in/out connector is green):** Connect an SDI video source to this connector when in transmitter mode. • **In RX mode (in/out connector is red):** Connect an SDI monitor to this connector to show the received ST 2110 or IPMX video signal when in receiver mode.
6	**Genlock**	To be supported in a future release.
7	**Control Lan PoE+**	If you want to have media and control on separate networks, connect **CONTROL LAN** to a network other than your media network. If your media network is static, connect this port to a DHCP-enabled network, and then log in to ConvertIP to set the static IP address. You can also power the ConvertIP from this port (Power over Ethernet).
8	**Power**	If you do not want your ConvertIP to be powered over the Ethernet connection, connect your 12V DC power supply to this port (sold separately).

CHAPTER 3

Getting started with Matrox ConvertIP

This chapter includes the following topics:

Initial setup overview

The following list is an overview of the tasks you'll need to perform to get started with Matrox ConvertIP. When needed, links to other topics are provided for more information.

Although this list is shown as a series of steps, you do not necessarily need to do all these tasks in the order described. For example, you can connect your video source before powering up the ConvertIP.

To get started with Matrox ConvertIP:

Step 1. **Connect the Matrox ConvertIP to a power source:** Matrox ConvertIP can be powered by an external power supply (sold separately) or by using PoE+ (Power Over Ethernet).

More info: See "*Matrox ConvertIP Hardware Connections*" on page *7*.

Step 2. **Connect your control network:** Use the network control port (**Control LAN**) or first media control port (e.g. **MEDIA / CONTROL LAN 1** or **MEDIA / CONTROL SFP 1**) to access your device's web interface for configuration and for NMOS support and control.

More info: See "*Matrox ConvertIP Hardware Connections*" on page *7*.

Step 3. **Connect your media network:** Depending on the ConvertIP model you have, use the **MEDIA / CONTROL LAN 1** or **MEDIA / CONTROL SFP 1** ports for your media content. The second LAN and SFP ports are used for redundancy. If your ConvertIP has only one network connector available, you can use **MEDIA / CONTROL LAN 1** for both control and media transport operations.

More info: See "*Matrox ConvertIP Hardware Connections*" on page *7*.

Step 4. **Access the Web interface:** When ConvertIP is connected to your network, it will boot in DHCP and broadcast in mDNS. This allows you to connect to the ConvertIP Command Center with your web browser (Google Chrome is recommended).

You can connect with your ConvertIP's IP address or, if your computer and ConvertIP are on the same subnet, go to *https://mtxcip-ConvertIP_serial*, where "ConvertIP_serial" is the serial number found on your device label (e.g. *https://mtxcip-ab12345/*).

More info: To find the IP address, you can use Matrox ConvertIP Manager, or initiate the ConvertIP's test signal feature to display the address on a connected monitor.

Step 5. **Log in and create an initial user account:** When you first log in to the ConvertIP Command Center, you will need to create the Administrator account (username and password).

More info: See "*Logging in to ConvertIP*" on page *21*.

Step 6. **Verify the status of your device:** Go to the *Status* page of the ConvertIP Command Center to display the device status. Make sure everything is working as needed.

More info: See "*Status*" on page *24*.

Step 7. **Configure settings:** Configure your ConvertIP devices as transmitters or receivers according to your streaming workflow. You can switch between modes easily from the **Maintenance** page.

More info:

- See "*Matrox ConvertIP Settings Reference*" on page *23*.
- See "*Maintenance*" on page *35*.

Step 8. **Start your streams:** Once you have configured your ConvertIP receiver and transmitter devices, you are ready to begin streaming. You can establish a single connection from one ConvertIP to another from the ConvertIP Command Center, or you can use the Matrox ConductIP and ConvertIP Manager applications to connect sender and receiver flows.

More info:

- See "*Routing (TX devices)*" on page *27*.
- See "*Stream settings (RX devices)*" on page *28*.

Result of this task: You are ready to use Matrox ConvertIP.

Logging in to ConvertIP

To access the ConvertIP user interface from a web browser:

Step 1. Open your web browser (Google Chrome is recommended).

Step 2. Do one of the following:

- Go to the IP address of your ConvertIP (e.g. https://192.168.12.345).
- Go to *https://mtxcip-ConvertIP_serial*, where "ConvertIP_serial" is the serial number found on your device label (your computer and ConvertIP must be on the same subnet). If your network is set up to use mDNS, this will take you to the ConvertIP login page.
- Use the Matrox ConvertIP Manager application to access one or more ConvertIP devices and log in to them. For more information, see the Matrox ConvertIP Manager embedded HTML help.

Step 3. Log in to the ConvertIP with your username and password.

More info: If this is the first time you are logging in to this ConvertIP you will instead be prompted to create a username and password to continue with initial setup.

Result of this task: You are logged in to your ConvertIP.

Modifying the ConvertIP user account

You create a single user account on ConvertIP when you log on for the first time. After that, you can add a first and last name to the account, and change the account password.

To modify the user account:

Step 1. Log on to ConvertIP (see "*Logging in to ConvertIP*" on page *21*).

Step 2. Go to **Account > Account management**.

Step 3. To add a first and last name to this username (shown in the **Username** field), enter the information where indicated.

Step 4. To change the password for this username, click **Change password** and follow the onscreen instructions to proceed.

Step 5. When finished click **Apply**.

Result of this task: Your changes are applied to your user account.

CHAPTER 4

Matrox ConvertIP Settings Reference

This chapter includes the following topics:

Status

This section describes the **Status** page in Matrox ConvertIP.

From the gray bar at the top of the page, you can edit the ConvertIP device name and see the operating mode (transmitter or receiver).

Click **Refresh** at any time to see the latest status for all settings.

NOTE The information displayed on this page will be different depending on whether your ConvertIP is in transmitter mode (TX) or in receiver mode (RX). In this section, the TX and RX settings are described together.

The **Status** page gives you a quick overall view of the status of your ConvertIP. The page includes information such as:

- Details about your ConvertIP hardware, such as the serial number, mode (TX or RX), and configuration type (e.g. codec support).
- Details about your ConvertIP's configuration. The device configuration represents the firmware that has been loaded on to the device and its capabilities.
- Details about the IP stream, such as whether or not it is active, the NMOS group, the resolution, and more.
- Details about your audio and video inputs/outputs, such as the video resolution, audio status, and whether or not there is a test signal being used.
- Details about your network, such as the IP addresses of your ConvertIP's different LAN ports (Control, Media 1, and Media 2).
- Additional status information about PTP lock, NMOS server registration, hardware temperature, and more.
- Details about the various services running on ConvertIP. Typically this information is used to troubleshoot ConvertIP along with technical support if needed.
  - **Web Server:** Shows if the server is functioning properly and all keys and certificates are valid.
  - **Video:** Shows if the video signal is found and active.
  - **Audio:** Shows if the audio signal is found and active.
  - **Auto Mode:** Shows if the ConvertIP receiver is in "Quick connect mode". If this shows "success" you can use ConvertIP in this mode.
  - **SDP Mode:** (ConvertIP Rx only), this shows if the ConvertIP is in SDP mode. If this shows "success" you can use ConvertIP in this mode.
  - **NTP:** Shows if NTP is enabled.
  - **PTP:** Shows if PTP is enabled.
  - **NMOS Server:** Shows if the NMOS server is online and can be used.
  - **Registry Server:** Shows if the registry server is online and can be used.

AV and Stream Configuration

This section describes the **AV and Stream Configuration** page in Matrox ConvertIP.

From the gray bar at the top of the page, you can edit the ConvertIP device name and see the operating mode (transmitter or receiver).

NOTE The information displayed on this page may be different depending on whether your ConvertIP is in transmitter mode (TX) or in receiver mode (RX). In this section, the TX and RX settings are described together.

Setting	Description
Dashboard	
Master enable	Enable/disable to activate or deactivate the ConvertIP streaming operation. When first connected, this is disabled and must be enabled manually, or via an NMOS API call to route the signal.
Video Information	Provides information about your video stream such as its resolution, frame rate, compression type, and more. The video pixel depth is a scale from 0 to 4 of the quality of compressed video, given the current bitrate and resolution.
Audio Information	Provides information about your audio stream such as the input selection, number of channels, format, and more.
Bitrate information	Provides information about your bitrate and link usage..
Video SDP file URL	Includes the URL for SDP information. Click **Copy to clipboard** if you want to paste the URL elsewhere.
Audio SDP file URL	Includes the URL for SDP information. Click **Copy to clipboard** if you want to paste the URL elsewhere.
Monitor connected at output	Shows the monitor type connected to the ConvertIP's HDMI output.

Setting	Description
Video and Audio settings	
Video settings	**TX settings:** • **Use input format:** ConvertIP will detect and use the format connected to the ConvertIP. • **Set manually:** Specify the parameters manually to upscale, downscale, and color convert according to your desired workflow[1]. • **Enable compression:** Compress the video content and specify the parameters. Guidelines are provided to help you select the proper bitrate. **RX settings:** • **Use input format:** ConvertIP will detect and use the format connected to the stream input. • **Use the preferred format from EDID:** Uses the preferred format from the EDID of the monitor connected to the ConvertIP[1]. • **Set manually:** Specify the parameters manually to upscale, downscale, and color convert according to your desired workflow[1].
Audio settings	**TX settings:** • **Use embedded audio inputs:** Uses audio from embedded HDMI video. • **Channels to be streamed:** Select which audio channels to include in the stream. **RX settings:** • Displays audio status only.

Setting	Description
Test pattern settings[2]	Instead of video content, this forces a test pattern to stream when in TX mode, or streams the SDI or HDMI output when in RX mode. If you press the **Test** button on the ConvertIP device to output the test pattern, this option will appear as selected. The test pattern includes information about the ConvertIP you are using, such as the model, mode it is in (TX or RX), and IP address of the various LAN ports.
Lost signal settings	Specify what ConvertIP should do when a signal is lost. You can have ConvertIP show a message on screen, show black video, or not output anything at all (your monitor will show that there is no input signal).
Routing (TX devices)	
Video	Click **Include** to include video content in your stream. The destination IP address and UDP port will be populated automatically, but you can change them if specific addresses or ports are required. • **Enable redundancy:** Enables a second multicast IP address for video content. After enabling this option, you must enter your redundant network information where indicated. This option is typically used for network maintenance.
Audio	Click **Include** to include audio content in your stream. The destination IP address and UDP port will be populated automatically, but you can change them if specific addresses or ports are required. • **Enable redundancy:** Enables a second multicast IP address for audio content. After enabling this option, you must enter your redundant network information where indicated. This option is typically used for network maintenance.
Enable redundancy	Enables a second multicast IP address for video content. After enabling this option, you must enter your redundant network information where indicated. This option is typically used for network maintenance.

Setting	Description
Stream settings (RX devices)	
Connection method (Use custom settings)	If the ConvertIP routing is managed by an NMOS controller (such as Matrox ConductIP), ConvertIP will operate according to this method. You can also manually specify these settings if needed. This is ConvertIP's default option. • **Enable IPMX mode:** Enable this option when the incoming stream from a ConvertIP or third-party transmitter is using the IPMX protocol. If this is enabled, the incoming stream must be in IPMX, otherwise ConvertIP is expecting an ST 2110 stream. • **Enable redundancy:** Enables a second multicast IP address for video content. After enabling this option, you must enter your redundant network information where indicated. This option is typically used for network maintenance.
Connection method (Use quick connect mode)	Using this mode, a receiver can select to receive an A/V stream from any ConvertIP transmitter unit on the network, even if another receiver is consuming the stream. When you access this page, ConvertIP will automatically search for compatible ConvertIP transmitter devices on the same subnet. You can also click **Refresh list of ConvertIP devices on the network**. When ready, click on a ConvertIP from the list to connect to it. **NOTE** This connection will receive both video and audio content from the ConvertIP transmitter you choose. If you want video and audio from two different sources, you must **Use custom settings** or **SDP URLs** and configure your streams accordingly.

Setting	Description
Connection method (Use SDP URLs)	This mode allows for the details found in an SDP file to be automatically applied. Copy your SDP URLs from your transmitter device and paste them in the corresponding fields. For example, if you log into the **Dashboard** page of any ConvertIP that is ready to transmit, audio and video SDP URLs are available to copy to your clipboard, which you then paste in the SDP field of a ConvertIP in receiver mode.
Display EDID (RX devices)	
Select EDID to use	Select the EDID of the monitor connected to the HDMI OUT, or select an EDID file to use if the connected monitor does not provide a suitable EDID for your workflow. **NOTE** These EDID settings only apply when your video output parameters are set to **Use the preferred format from EDID** (see *Video settings*).
Manage the EDID file	Allows you to download or upload an EDID. • **Download** the EDID file of the monitor connected to the HDMI OUT, which you can then upload to another ConvertIP to optimize your workflow. • **Upload** an EDID file when the connected monitor's EDID is not available or cannot be read by ConvertIP. The uploaded EDID will then appear in **Select EDID to use** list. **NOTE** These EDID settings only apply when your video output parameters are set to **Use the preferred format from EDID** (see *Video settings*).

Setting	Description
EDID management (TX devices)	
Select EDID to use	Select the ConvertIP's internal EDID, or a different EDID that you have uploaded to ConvertIP using the **Export/Load the internal EDID** option. **NOTE** These EDID settings only apply when your video output parameters are set to **Use the preferred format from EDID** (see *Video settings*).
Export/Load the internal EDID	Allows you to upload or download an EDID, or use **Passthrough** to have the monitor connected on the HDMI output interface with the GPU that is sending the video to ConvertIP. **NOTE** These EDID settings only apply when your video output parameters are set to **Use the preferred format from EDID** (see *Video settings*).
IGMP	
IGMP version[3]	Select the IGMP version you want to use depending on your network. The ConvertIP will reboot to apply this change.

1. When video content is 1080i (i.e. interlaced), ConvertIP will not scale or convert the stream. The stream will be processed in its native format.
2. On ConvertIP DRH and DSH models in TX mode, the test pattern will be output from the HDMI OUT if a monitor is connected to that port.
3. To ensure proper functionality of IGMP, the following requirements must be met: a managed switch that supports IGMP with IGMP snooping enabled should be in place, and at least one device acting as an IGMP querier should be present to initiate group membership queries.

Network

This section describes the **Network** page in Matrox ConvertIP.

From the gray bar at the top of the page, you can edit the ConvertIP device name and see the operating mode (transmitter or receiver).

NOTE Since you can configure Matrox ConvertIP to be a transmitter (TX) or a receiver (RX), the information on this page may be different depending on the mode your ConvertIP is in. In this section, both the TX and RX settings are described together.

Setting	Description
Network configuration	
Control LAN	Set your **Control LAN** to **DHCP** or **Static**. If you set this to static, you'll need to specify the corresponding IP address and network information. This is the LAN that receives the control commands for ConvertIP settings. This is typically set to DHCP in most cases. • **Enable MDNS discovery:** Enable to broadcast the ConvertIP internal NMOS registry on the network under the multicast DNS protocol. This resolves hostnames to IP addresses within networks that do not include a domain name server. Multicast DNS publication only works with devices on the same subnet. • **Enable LLMNR discovery:** Enable Link-Local Multicast Name Resolution to allow an IPv4 host to perform name resolution for hosts on the same local link.
Media LAN 1	Set your **Media LAN 1** to **DHCP** or **Static**. If you set this to static, you'll need to specify the corresponding IP address and network information. This is the LAN that receives video/audio content. • **Enable MDNS discovery:** See *Control LAN*. • **Enable LLMNR discovery:** See *Control LAN*.

Setting	Description
Media LAN 2	Set your **Media LAN 2** to **DHCP** or **Static**. If you set this to static, you'll need to specify the corresponding IP address and network information. This is the LAN that receives video/audio content. • **Enable MDNS discovery:** See *Control LAN*. • **Enable LLMNR discovery:** See *Control LAN*. **Media LAN 2** is only used as a redundant connection for **Media LAN 1**. If you are only using one connection, use **Media LAN 1**.
NMOS	
NMOS interface	• **Enable:** Enable/disable NMOS on the port selected. • **LAN selection**[1]**:** Select the network connection on which to enable NMOS. • **Port:** Specify the port. • **Node and device name:** Specify the name for your ConvertIP device. You can also do this at the top of the page. This is the name that will appear in Matrox ConductIP, or in any third-party application that uses NMOS protocol for device identification. • **Node and device description:** Provide a description for your ConvertIP. This is the description that will appear in Matrox ConductIP, or in any third-party application that uses NMOS protocol for device identification. • **Group name:** A group is an NMOS signifier that identifies more than one media stream (such as one video and multiple audio tracks) as a single logical group. ConvertIP devices appear as natural NMOS groups (video, audio, and ancillary data) in applications such as Matrox ConductIP. This is the name of this device's group.

Setting	Description
NMOS registry	Select the NMOS registry broadcast settings. MDNS extends the Domain Name Service system to operate over link-local multicast. DNS-SD adds support needed to discover network services over DNS. If you choose manual, you must specify the corresponding settings.
PTP and NTP	
NTP settings	• **Enable NTP:** Enable the NTP time server to log ConvertIP activity (i.e. Event logs). • **LAN selection:** Select which LAN port supports NTP. Typically, the **Control LAN** is used for this. • **NTP server:** Specify the NTP server address.
PTP settings	• **Enable PTP:** Enable to allow this ConvertIP to be synchronized to a master clock on the network. • **Follower or BMC:** If you want ConvertIP to follow your network PTP, select **Follower** and specify the required information (default values recommended). If you want ConvertIP to be your PTP server, select **BMC** and specify the required information (default values recommended).

Setting	Description
Status	Shows the PTP connection status. • **Clock identity**: MAC address of the machine acting as the PTP clock. If ConvertIP is the PTP master, this will show the ConvertIP's MAC address. • **IsLocked**: Shows "True" if ConvertIP is locked to PTP clock. Shows "False" if not locked. • **Sync Interval**: Synchronization interval of packets per second for messages sent between master clock and follower. • **Offset from leader**: This value can help with troubleshooting network issues that prevent proper operation.

1. The difference between **Control LAN** and **Control LAN (if available)** is that, with the latter, NMOS will fall back to **Media LAN 1** if the control network does not have an NMOS server.

Device

This section describes the **Device** page in Matrox ConvertIP.

From the gray bar at the top of the page, you can edit the ConvertIP device name and see the operating mode (transmitter or receiver).

NOTE Since you can configure Matrox ConvertIP to be a transmitter (TX) or a receiver (RX), the information on this page may be different depending on the mode your ConvertIP is in. In this section, both the TX and RX settings are described together.

Setting	Description
Licenses	
Upload license	Click **Upload license** to browse to a folder on your computer and select a Matrox license file (*.lic*) that activates additional options (e.g. JPEG XS support). When a license is loaded, it will appear on this page as being present on the ConvertIP. This license is unique to the device and is permanent.
Maintenance	
Firmware update	Click **Update firmware** to browse to a folder on your computer and select the Matrox ConvertIP update file to update the ConvertIP. A firmware update package may contain up to three versions per ConvertIP model. Select the version corresponding to the desired workflow (e.g JPEG XS, PreAV codec or uncompressed/25G). All settings are preserved when updating to a new firmware version. You also use the firmware update to activate additional support for different codecs (e.g. JPEG XS). **NOTE** JPEG XS firmware can be loaded but will not work if a license file is not present. Also, Matrox ConvertIP Manager may be a more convenient method to upload or change firmware, particularly when managing multiple devices. For more information, see the Matrox ConvertIP Manager embedded HTML help.

Setting	Description
Operating mode	Select **Transmitter** or **Receiver** to switch ConvertIP into that mode. This will initiate a device reboot.
Reboot	Reboot the ConvertIP. This is a simple reboot of the device and not a factory reset.
Event logs	
Events	This is a list of the events that have occurred on this ConvertIP device over a given time period.
Log	You can download logs of the events (e.g. for Matrox Technical Support purposes). Select the type of log you want to download, then click **Download**.
Other	
Disable physical buttons on ConvertIP device	This prevents anyone from mistakenly pressing a physical button on the ConvertIP hardware and possibly disrupting an operation.
Locate device	This helps you locate the ConvertIP device in a rack or area with many units. Click **Locate** to make the LEDs on the devices blink rapidly. Click **Locate** again to turn off the LEDs.
Troubleshooting	Disables FEC (forward error correction) on ConvertIP DSH and DSS models. **NOTE** Some 25G network switches do not support FEC, but it is not recommended to operate a 25G network without FEC as packet errors can occur.

Account

This section describes the **Account** page in Matrox ConvertIP.

From the gray bar at the top of the page, you can edit the ConvertIP device name and see the operating mode (transmitter or receiver).

NOTE Since you can configure Matrox ConvertIP to be a transmitter (TX) or a receiver (RX), the information on this page may be different depending on the mode your ConvertIP is in. In this section, both the TX and RX settings are described together.

Setting	Description
Account management	
First name / Last name	Add a first name and last name to the current user account.
Change password	Change the password for the current user account.
Management tools	
Import user configuration	Imports ConvertIP settings from a *.bin* file on your computer.
Export user configuration	Exports ConvertIP settings as a .bin file that you can save to your computer. This file can be used to quickly reconfigure a ConvertIP when used in multiple settings. You can also share a configuration between devices.
Reset user configuration	Resets the ConvertIP settings to their factory default values.

Logout

This section describes the **Logout** page in Matrox ConvertIP.

It is recommended that you log out from your ConvertIP session when finished. If you close the browser window without properly logging out, other users trying to log in will receive a message saying that there is already a user connected, and they will be asked if they want to proceed. This may result in unnecessary confusion among different ConvertIP users.

About

This section describes the **About** page in Matrox ConvertIP.

This page displays the following:

- ConvertIP device firmware version.
- ConvertIP device serial number.
- Link to the Matrox website where you can download the official documentation.
- Link to the ConvertIP warranty.
- Link to the third-party licenses used with the ConvertIP.
- The official Matrox Software License Agreement.

CHAPTER 5

Matrox ConvertIP Hardware Specifications

This chapter includes the following topics:

Matrox ConvertIP SRH specifications

These are the hardware technical specifications for the Matrox ConvertIP SRH.

Matrox ConvertIP SRH	
Product	
Part Number	CIP-SRH
Form Factor	• Standalone appliance • Rack-mountable: 1U, 1/3 rack (horizontal)
Connectivity	
Video Input	1x HDMI
Video Input Resolutions	HD and 4K broadcast resolutions
Video Outputs	1x HDMI
Audio Input/Output	• Up to 8 channels of audio embedded in HDMI signal • Unbalanced analog stereo input via 1/8” (3.5mm) jack[1] • Line Level[1]
Network Connector	1x RJ45 LAN for Media/Control
Control and Management	Web browser-based UI, standalone utility (Matrox ConvertIP Manager)
Performance	
Maximum Video Resolutions	4096 x 2160 60p
Bit Depth and Color Space	• YCbCr 4:2:0 10-bit[2] and 8-bit[2] • YCbCr 4:2:2 10-bit • RGB 4:4:4 8-bit and 10-bit (less than 4Kp60) • SDR/HDR[2]
Video and Audio Processing	
Video Scaling	High Quality multi-tap 10-bit Up/Down Scaler

Matrox ConvertIP SRH	
Video Deinterlacing	Yes[1]
Color Space Conversion	Yes
HDCP Support	Yes[2]
Encoding Formats	
Video[3]	Default compressed bitrates: 200 Mbps for HD content, 820 Mbps for 4K content • Colibri codec included. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps • JPEG-XS codec upgrade required[4]. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps
Audio	Uncompressed PCM (~1 Mbps/ch)
Latency	Less than a 1/4 frame (<4 ms)
Network	
Network Standard	RJ45 providing 1 GbE or 2.5 GbE Base-T Ethernet
IP Addressing	• IPv4 • IPv6[2] • DHCP (default) and static IP
Supported Protocols	• SMPTE ST 2110 (-10, -20, -21, -22, -30, -31, and -40) • SMPTE ST 2059-2 • SMPTE ST 2022-7 • IPMX
Redundancy	Yes (ST 2022-7)
Command and Control	HTTPS over TCP
Discovery, Registration and Control	NMOS discovery and control according to standards IS-04 v1.3 and IS-05 v1.1
PoE+	Yes (IEEE 802.3at Type 2)
Physical	

Matrox ConvertIP SRH	
Product Dimensions	7.13 (D) x 5.5 (W) x 1.42 (H) inches 181 (D) x 138 (W) x 36 (H) mm
Unit Weight	1.44lbs / 655 g
Cooling	Fanless

Power	• Device: Input: 12 volts, max 18 Watts
	• PoE+
	• Optional PSU (sold separately)
	  • Line Voltage: 100-240 V a.c., 0.5A
	  • Frequency: 50-60 Hz
	  • Input: IEC320-C14
	  • Output: DIN4 locking power connector

Hardware and Software	
Hardware Included	ConvertIP SRH appliance
Optional Hardware	ConductIP NMOS-based routing solution (Part #: CDCTIP-MRA)
Accessories (sold separately)	• ConvertIP power supply unit (Part #: EPS40WKIT-NA, EPS40WKIT-EU, EPS40WKIT-UK, EPS40WKIT-AU, EPS40W-10PK)[5] • Rackmount kit[6] (Part #: RMK-19TR-A) • Angled bracket kit (Part #: RMK-6BRKT-A) • Secure cable solution for HDMI (Part #: SK-SLND-4) • NRG redundant power supply unit (Part #: NRG-5-1DB or NRG-5-2DB)
Software	• Matrox ConvertIP Command Center (Web UI) • Matrox ConvertIP Manager (Microsoft® Windows® 10 and 11)
Optional software	JPEG-XS codec license
Environmental	

Matrox ConvertIP SRH	
Operating Conditions	• Temperature: 0 to 45 degrees Celsius • Altitude: 650 hPa (3,580 m) to 1,013 hPa (0 m) • Humidity: 20% to 80% non-condensing
Storage Conditions	• Temperature: -40 to 70 degrees Celsius • Altitude: 192 hPa (12,000 m) to 1,020 hPa (-50 m) • Humidity: 5% to 95% non-condensing
General	
EMC/EMI Device Class	Class A
EMC/EMI Compliance	• CE (EU) • FCC (USA) • ICES-003 (Canada) • KC (Korea) • RCM (Aus/NZ)
Environmental Compliance	• China RoHS • EU RoHS • REACH
Warranty	Three-year limited warranty with free online or telephone support.

1. To be supported in a future release.
2. Available in a future software update.
3. Bitrate will be set according to resolution and desired quality.
4. For more information, contact your Matrox Video representative.
5. Part # EPS40W-10PK does not include IEC-C14 power cord. These cables must be sourced locally
6. Can fit up to three ConvertIP units in a 1RU space.

Matrox ConvertIP DRH specifications

These are the hardware technical specifications for the Matrox ConvertIP DRH.

Matrox ConvertIP DRH	
Product	
Part Number	CIP-DRH
Form Factor	• Standalone appliance • Rack-mountable: 1U, 1/2 rack (horizontal)
Connectivity	
Video Input	1x HDMI
Video Input Resolutions	HD and 4K broadcast resolutions
Video Outputs	1x HDMI (zero latency pass-through in TX mode)
Video Output Resolutions	HD and 4K broadcast resolutions
Audio Input/Output	• Up to 8 channels of audio embedded in HDMI signal • Unbalanced analog stereo input via 1/8” (3.5mm) jack[1] • Line Level[1]
Network Connector	3x RJ45 (LAN 1 for Media and Control with PoE, LAN 2 for Media and Control (redundant), Control LAN for Control data)
RS-232	Yes[2]
Control and Management	Web browser-based UI, standalone utility (ConvertIP Manager)
Performance	
Maximum Video Resolutions	4096 x 2160 60p
Bit Depth and Color Space	• YCbCr 4:2:0 10-bit[2] and 8-bit[2] • YCbCr 4:2:2 10-bit • RGB 4:4:4 8-bit • SDR/HDR[2]

Matrox ConvertIP DRH	
Video and Audio Processing	
Video Scaling	High Quality multi-tap 10-bit Up/Down Scaler
Video Deinterlacing	Yes[1]
Color Space Conversion	Yes
HDCP Support[2]	Yes
Encoding Formats	
Video[3]	Default compressed bitrates: 200 Mbps for HD content, 820 Mbps for 4K content • Colibri codec included. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps • JPEG-XS codec upgrade required[4]. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps
Audio	Uncompressed PCM (~1 Mbps/ch)
Latency	Less than a 1/4 frame (<4 ms)
Network	
IP Addressing	• IPv4 • IPv6[2] • DHCP (default) and static IP
Supported Protocols	• SMPTE ST 2110 (-10, -20, -21, -22,-30, -31, and -40) • SMPTE ST 2059-2 • SMPTE ST 2022-7
Redundancy	Yes (ST 2022-7)
Command and Control	HTTPS over TCP
Discovery, Registration and Control	NMOS discovery and control according to standards IS-04 v1.3 and IS-05 v1.1
PoE+	Yes (IEEE 802.3at Type 2)

Matrox ConvertIP DRH	
Physical	
Product Dimensions	7.13 (D) x 7.53 (W) x 1.42 (H) inches 181 (D) x 191 (W) x 36 (H) mm
Unit Weight	1.40 lbs / 635 g
Cooling	Fanless

Power	• Device: Input: 12 volts, max 18 Watts
	• PoE+
	• Optional PSU (sold separately)
	  • Line Voltage: 100-240 V a.c., 0.5A
	  • Frequency: 50-60 Hz
	  • Input: IEC320-C14
	  • Output: DIN4 locking power connector

Hardware and Software	
Hardware Included	ConvertIP DRH appliance
Optional Hardware	ConductIP NMOS-based routing solution (Part #: CDCTIP-MRA)
Accessories (sold separately)	• ConvertIP power supply unit (Part #: EPS40WKIT-NA, EPS40WKIT-EU, • EPS40WKIT-UK, EPS40WKIT-AU, EPS40W-10PK)[5] • Rackmount kit[6] (Part #: RMK-19TR-A) • Angled bracket kit (Part #: RMK-6BRKT-A) • Secure cable solution for HDMI (Part #: SK-SLND-4) • NRG redundant power supply unit (Part #: NRG-5-1DB or NRG-5-2DB)
Software	• Matrox ConvertIP Command Center (Web UI) • Matrox ConvertIP Manager (Microsoft® Windows® 10 and 11)
Optional software	JPEG-XS codec license

Matrox ConvertIP DRH	
Environmental	
Operating Conditions	• Temperature: 0 to 45 degrees Celsius • Altitude: 650 hPa (3,580 m) to 1,013 hPa (0 m) • Humidity: 20% to 80% non-condensing
Storage Conditions	• Temperature: -40 to 70 degrees Celsius • Altitude: 192 hPa (12,000 m) to 1,020 hPa (-50 m) • Humidity: 5% to 95% non-condensing
General	
EMC/EMI Device Class	Class A
EMC/EMI Compliance	• CE (EU) • FCC (USA) • ICES-003 (Canada) • KC (Korea) • RCM (Aus/NZ)
Environmental Compliance	• China RoHS • EU RoHS • REACH
Warranty	Three-year limited warranty with free online or telephone support

1. To be supported in a future release.
2. Available in a future software update.
3. Bitrate will be set according to resolution and desired quality.
4. For more information, contact your Matrox Video representative.
5. Part # EPS40W-10PK does not include IEC-C14 power cord. These cables must be sourced locally.
6. Can fit up to two ConvertIP units in a 1RU space.

Matrox ConvertIP DSH specifications

These are the hardware technical specifications for the Matrox ConvertIP DSH.

Matrox ConvertIP DSH	
Product	
Part Number	CIP-DSH
Form Factor	• Standalone appliance • Rack-mountable: 1U, 1/2 rack (horizontal)
Connectivity	
Video Input	1x HDMI
Video Outputs	1x HDMI (zero latency pass-through in TX mode)
Audio Input/Output	• Up to 8 channels of audio embedded in HDMI signal • Unbalanced analog stereo input via 1/8” (3.5mm) jack[1] • Line Level[1]
Network Connector	• 2x SFP28 cages for ST 2110 media and In-band control on LAN 1 and LAN 2 – 10 GbE IEEE 802.3ae (10GBASE-SR/LR) – 25 GbE IEEE 802.3by (25GBASE-SR/CR/CR-S) – 25 GbE IEEE 802.3cc (25GBASE-LR) • LAN2 for redundancy mode only • Dedicated RJ-45 management network interface for control (10/100 Mbps)
RS-232	Yes[2]
Control and Management	Web browser-based UI, standalone utility (Matrox ConvertIP Manager)

Matrox ConvertIP DSH	
Performance	
Maximum Video Resolutions	4096 x 2160 60p • All standard desktop GPU resolutions supported
Bit Depth and Color Space	• YCbCr 4:2:0 10-bit[2] and 8-bit[2] • YCbCr 4:2:2 10-bit • RGB 4:4:4 8-bit • SDR/HDR[2]
Video and Audio Processing	
Video Scaling	High Quality multi-tap 10-bit Up/Down Scaler
Video Deinterlacing	Yes[1]
Color Space Conversion	Yes
HDCP Support[2]	Yes
Encoding Formats	
Video[3]	Uncompressed: • HD 3Gbps and 4K 12Gbps Default compressed bitrates: 200 Mbps for HD content, 820 Mbps for 4K content • Colibri codec included. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps • JPEG-XS codec upgrade required[4]. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps
Audio	Uncompressed PCM (~1 Mbps/ch)
Latency	Less than a 1/4 frame (<4 ms)
Network	
IP Addressing	• IPv4 • IPv6[2] • DHCP (default) and static IP

Matrox ConvertIP DSH	
Supported Protocols	• SMPTE ST 2110 (-10, -20, -21, -22, -30, -31, and -40) • SMPTE ST 2059-2 • SMPTE ST 2022-7
Redundancy	Yes (ST 2022-7)
Command and Control	HTTPS over TCP
Discovery, Registration and Control	NMOS discovery and control according to standards IS-04 v1.3 and IS-05 v1.1
PoE+	Yes (IEEE 802.3at Type 2)
Physical	
Product Dimensions	7.13 (D) x 7.53 (W) x 1.42 (H) inches 181 (D) x 191 (W) x 36 (H) mm
Unit Weight	1.66 lbs / 755 g
Cooling	Fanless

Power	• Device: Input: 12 volts, max 18 Watts
	• PoE+
	• Optional PSU (sold separately)
	  • Line Voltage: 100-240 V a.c., 0.5A
	  • Frequency: 50-60 Hz
	  • Input: IEC320-C14
	  • Output: DIN4 locking power connector

Hardware and Software	
Hardware Included	ConvertIP DSH appliance
Optional Hardware	ConductIP NMOS-based routing solution (Part #: CDCTIP-MRA)

Matrox ConvertIP DSH	
Accessories (sold separately)	• ConvertIP power supply unit (Part #: EPS40WKIT-NA, EPS40WKIT-EU, EPS40WKIT-UK, EPS40WKIT-AU, EPS40W-10PK)[5] • Rackmount kit[6] (Part #: RMK-19TR-A) • Angled bracket kit (Part #: RMK-6BRKT-A) • Secure cable solution for HDMI (Part #: SK-SLND-4) • NRG redundant power supply unit (Part #: NRG-5-1DB or NRG-5-2DB)
Software	• Matrox ConvertIP Command Center (Web UI) • Matrox ConvertIP Manager (Microsoft® Windows® 10 and 11)
Optional software	JPEG-XS codec license
Environmental	
Operating Conditions	• Temperature: 0 to 45 degrees Celsius • Altitude: 650 hPa (3,580 m) to 1,013 hPa (0 m) • Humidity: 20% to 80% non-condensing
Storage Conditions	• Temperature: -40 to 70 degrees Celsius • Altitude: 192 hPa (12,000 m) to 1,020 hPa (-50 m) • Humidity: 5% to 95% non-condensing
General	
EMC/EMI Device Class	Class A
EMC/EMI Compliance	• CE (EU) • FCC (USA) • ICES-003 (Canada) • KC (Korea) • RCM (Aus/NZ)
Environmental Compliance	• China RoHS • EU RoHS • REACH
Warranty	Three-year limited warranty with free online or telephone support.

1. To be supported in a future release.
2. Available in a future software update.
3. Bitrate will be set according to resolution and desired quality.
4. For more information, contact your Matrox Video representative.
5. Part # EPS40W-10PK does not include IEC-C14 power cord. These cables must be sourced locally.
6. Can fit up to two ConvertIP units in a 1RU space.

Matrox ConvertIP DRS specifications

These are the hardware technical specifications for the Matrox ConvertIP DRS.

Matrox ConvertIP DRS	
Product	
Part Number	CIP-DRS
Form Factor	• Standalone appliance • Rack-mountable: 1U, 1/2 rack (horizontal)
Connectivity	
Video Input	• TX mode: 12G SDI • RX Mode: No input
Video Input Resolutions	HD and 4K broadcast resolutions
Video Outputs	• TX mode: No output • RX mode: 12G SDI
Video Output Resolutions	HD and 4K broadcast resolutions
Genlock	Bi-Level and Tri-Level input support[1]
VANC ancillary data processing	Yes[1]
Audio Input/Output	• Up to 16 channels of audio embedded in SDI output signal • Unbalanced analog stereo input via 1/8“ (3.5mm) jack[1] • Line Level[1]
Network Connector	3x RJ45 (LAN 1 for Media and Control with PoE, LAN 2 for Media and Control (redundant), Control LAN for Control data)
RS-232	Yes[1]
Control and Management	Web browser-based UI, standalone utility (Matrox ConvertIP Manager)
Performance	
Maximum Video Resolutions	4096 x 2160 60p

Matrox ConvertIP DRS	
Bit Depth and Color Space	• YCbCr 4:2:0 10-bit[1] and 8-bit[1] • YCbCr 4:2:2 10-bit • RGB 4:4:4 8-bit • SDR/HDR[1]
Video and Audio Processing	
Video Scaling	High Quality multi-tap 10-bit Up/Down Scaler
Video Deinterlacing	Yes
Color Space Conversion	Yes
Encoding Formats	
Video[2]	Default compressed bitrates: 200 Mbps for HD content, 820 Mbps for 4K content • Colibri codec included. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps • JPEG-XS codec upgrade required[3]. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps
Audio	Uncompressed PCM (~1 Mbps/ch)
Latency	Less than a 1/4 frame (<4 ms)
Network	
Network Standard	RJ45 providing 1 GbE or 2.5 GbE Base-T Ethernet
IP Addressing	• IPv4 • IPv6[1] • DHCP (default) and static IP
Supported Protocols	• SMPTE ST 2110 (-10, -20, -21, -22, -30, -31, and -40) • SMPTE ST 2059-2 • SMPTE ST 2022-7
Redundancy	Yes (ST 2022-7)
Command and Control	HTTPS over TCP

Matrox ConvertIP DRS	
Discovery, Registration and Control	NMOS discovery and control according to standards IS-04 v1.3 and IS-05 v1.1
PoE+	Yes (IEEE 802.3at Type 2)
Physical	
Product Dimensions	7.13 (D) x 7.53 (W) x 1.42 (H) inches 181 (D) x 191 (W) x 36 (H) mm
Unit Weight	1.47lbs / 665g
Cooling	Fanless

Power	• Device: Input: 12 volts, max 18 Watts
	• PoE+
	• Optional PSU (sold separately)
	  • Line Voltage: 100-240 V a.c., 0.5A
	  • Frequency: 50-60 Hz
	  • Input: IEC320-C14
	  • Output: DIN4 locking power connector

Hardware and Software	
Hardware Included	ConvertIP DRS appliance
Optional Hardware	ConductIP NMOS-based routing solution (Part #: CDCTIP-MRA)
Accessories (sold separately)	• ConvertIP power supply unit (Part #: EPS40WKIT-NA, EPS40WKIT-EU, EPS40WKIT-UK, EPS40WKIT-AU, EPS40W-10PK)[4] • Rackmount kit[5] (Part #: RMK-19TR-A) • Angled bracket kit (Part #: RMK-6BRKT-A) • Secure cable solution for HDMI (Part #: SK-SLND-4) • NRG redundant power supply unit (Part #: NRG-5-1DB or NRG-5-2DB)
Software	• Matrox ConvertIP Command Center (Web UI) • Matrox ConvertIP Manager (Microsoft® Windows® 10 and 11)

Matrox ConvertIP DRS	
Optional software	JPEG-XS codec license
Environmental	
Operating Conditions	• Temperature: 0 to 45 degrees Celsius • Altitude: 650 hPa (3,580 m) to 1,013 hPa (0 m) • Humidity: 20% to 80% non-condensing
Storage Conditions	• Temperature: -40 to 70 degrees Celsius • Altitude: 192 hPa (12,000 m) to 1,020 hPa (-50 m) • Humidity: 5% to 95% non-condensing
General	
EMC/EMI Device Class	Class A
EMC/EMI Compliance	• CE (EU) • FCC (USA) • ICES-003 (Canada) • KC (Korea) • RCM (Aus/NZ)
Environmental Compliance	• China RoHS • EU RoHS • REACH
Warranty	Three-year limited warranty with free online or telephone support.

1. Available in a future software update.
2. Bitrate will be set according to resolution and desired quality.
3. For more information, contact your Matrox Video representative.
4. Part # EPS40W-10PK does not include IEC-C14 power cord. These cables must be sourced locally.
5. Can fit up to two ConvertIP units in a 1RU space.

Matrox ConvertIP DSS specifications

These are the hardware technical specifications for the Matrox ConvertIP DSS.

Matrox ConvertIP DSS	
Product	
Part Number	CIP-DSS
Form Factor	• Standalone appliance • Rack-mountable: 1U, 1/2 rack (horizontal)
Connectivity	
Video Input	• TX mode: 12G SDI • RX Mode: No input
Video Input Resolutions	HD and 4K broadcast resolutions
Video Outputs	• TX mode: No output • RX Mode: 12G SDI
Video Output Resolutions	HD and 4K broadcast resolutions
Genlock	Bi-Level and Tri-Level input support[1]
Ancillary Data Processing	Yes[1]
Audio Input/Output	• Up to 16 channels of audio embedded in SDI output signal • Unbalanced analog stereo input via 1/8” (3.5mm) jack[1] • Line Level[1]
Network Connector	• 2x SFP28 cages for ST 2110 media and In-band control on LAN 1 and LAN 2 – 10 GbE IEEE 802.3ae (10GBASE-SR/LR) – 25 GbE IEEE 802.3by (25GBASE-SR/CR/CR-S) – 25 GbE IEEE 802.3cc (25GBASE-LR) • LAN2 for redundancy mode only • Dedicated RJ-45 management network interface for control (1/2.5 GbE)

Matrox ConvertIP DSS	
RS-232	Yes[1]
Control and Management	Web browser-based UI, standalone utility (Matrox ConvertIP Manager)
Performance	
Maximum Video Resolutions	4096 x 2160 60p • All standard desktop GPU resolutions supported
Bit Depth and Color Space	• YCbCr 4:2:0 10-bit[1] and 8-bit[1] • YCbCr 4:2:2 10-bit • RGB 4:4:4 8-bit • SDR/HDR[1]
Video and Audio Processing	
Video Scaling	High Quality multi-tap 10-bit Up/Down Scaler
Video Deinterlacing	Yes
Color Space Conversion	Yes
Encoding Formats	
Video[2]	Uncompressed: • HD 3Gbps and 4K 12Gbps Default compressed bitrates: 200 Mbps for HD content, 820 Mbps for 4K content • Colibri codec included. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps • JPEG-XS codec upgrade required[3]. 4:2:2 10-bit YUV and 4:4:4 8-bit RGB, 100 to 2000 Mbps
Audio	Uncompressed PCM (~1 Mbps/ch)
Latency	Less than a 1/4 frame (<4 ms)
Network	
Network Standard	RJ45 providing 1 GbE or 2.5 GbE Base-T Ethernet

Matrox ConvertIP DSS	
IP Addressing	• IPv4 • IPv6[1] • DHCP (default) and static IP
Supported Protocols	• SMPTE ST 2110 (-10, -20, -21, -22, -30, -31, and -40) • SMPTE ST 2059-2 • SMPTE ST 2022-7
Redundancy	Yes (ST 2022-7)
Command and Control	HTTPS over TCP
Discovery, Registration and Control	NMOS discovery and control according to standards IS-04 v1.3 and IS-05 v1.1
PoE+	Yes (IEEE 802.3at Type 2)
Physical	
Product Dimensions	7.13 (D) x 7.53 (W) x 1.42 (H) inches 181 (D) x 191 (W) x 36 (H) mm
Unit Weight	1.70 lbs / 770 g
Cooling	Fanless

Power	• Device: Input: 12 volts, max 18 Watts
	• PoE+
	• Optional PSU (sold separately)
	  • Line Voltage: 100-240 V a.c., 0.5A
	  • Frequency: 50-60 Hz
	  • Input: IEC320-C14
	  • Output: DIN4 locking power connector

Hardware and Software	
Hardware Included	ConvertIP DSS appliance
Optional Hardware	ConductIP NMOS-based routing solution (Part #: CDCTIP-MRA)

Matrox ConvertIP DSS	
Accessories (sold separately)	• ConvertIP power supply unit (Part #: EPS40WKIT-NA, EPS40WKIT-EU, EPS40WKIT-UK, EPS40WKIT-AU, EPS40W-10PK)[4] • Rackmount kit[5] (Part #: RMK-19TR-A) • Angled bracket kit (Part #: RMK-6BRKT-A) • Secure cable solution for HDMI (Part #: SK-SLND-4) • NRG redundant power supply unit (Part #: NRG-5-1DB or NRG-5-2DB)
Software	• Matrox ConvertIP Command Center (Web UI) • Matrox ConvertIP Manager (Microsoft® Windows® 10 and 11)
Optional software	JPEG-XS codec license
Environmental	
Operating Conditions	• Temperature: 0 to 45 degrees Celsius • Altitude: 650 hPa (3,580 m) to 1,013 hPa (0 m) • Humidity: 20% to 80% non-condensing
Storage Conditions	• Temperature: -40 to 70 degrees Celsius • Altitude: 192 hPa (12,000 m) to 1,020 hPa (-50 m) • Humidity: 5% to 95% non-condensing
General	
EMC/EMI Device Class	Class A
EMC/EMI Compliance	• CE (EU) • FCC (USA) • ICES-003 (Canada) • KC (Korea) • RCM (Aus/NZ)
Environmental Compliance	• China RoHS • EU RoHS • REACH
Warranty	Three-year limited warranty with free online or telephone support.

1. Available in a future software update.
2. Bitrate will be set according to resolution and desired quality.
3. For more information, contact your Matrox Video representative.
4. Part # EPS40W-10PK does not include IEC-C14 power cord. These cables must be sourced locally
5. Can fit up to two ConvertIP units in a 1RU space.

Appendix A

Providing adequate airflow to your ConvertIP device

This appendix includes the following topics:

Matrox ConvertIP airflow recommendations

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

- Leave the proper amount of room around your device. To prevent airflow restriction, we recommend allowing *at least* 0.75 inches (1.91 cm) of clearance between the top of your device and anything above it. More space may be required depending on your environment.
- When your device is resting on a good insulator like wood or cardboard, make sure your device is resting on the original rubber feet. If installed on a metal tray, or on a rack, the rubber feet can be removed.
- Operate your device in a well ventilated location. Don't operate your device near a heat source or restrict airflow to your device (for example, by operating your device inside a desk cabinet).
- Monitor your ambient temperatures. Make sure the ambient temperature doesn't exceed the maximum recommended temperatures. For more information on supported operating temperatures, see "*Matrox ConvertIP Hardware Specifications* on page 40.

Appendix B

ConvertIP LED status indicators and button functions

This appendix includes the following topics:

ConvertIP LED status indicators

The tables below describe the behavior of the LEDs on the various ConvertIP models.

ConvertIP SRH

LED	Colors	What it means
Front of ConvertIP		
TX / RX	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	**TX lit:** ConvertIP is in TX mode and operating normally. **RX lit:** ConvertIP is in RX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
Status	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up or, if already booted, ConvertIP is in the process of sending or receiving.
	Green (solid)	ConvertIP is idle but operating normally.
	Orange (flashing)	Test signal being sent or firmware being updated.
	Orange (flashing quickly)	DHCP network not found.
	Orange (solid)	Warning condition.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.

LED	Colors	What it means
Rear of ConvertIP		
HDMI IN	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	ConvertIP is in TX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
HDMI OUT	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	ConvertIP is in RX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.

ConvertIP DRH

LED	Colors	What it means
Front of ConvertIP		
TX / RX	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	**TX lit:** ConvertIP is in TX mode and operating normally. **RX lit:** ConvertIP is in RX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP "locate" option has been started.
	Red (solid)	ConvertIP is experiencing a fatal error.
Status	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up or, if already booted, ConvertIP is in the process of sending or receiving.
	Green (solid)	ConvertIP is idle but operating normally.
	Orange (flashing)	Test signal being sent or firmware being updated.
	Orange (flashing quickly)	DHCP network not found.
	Orange (solid)	Warning condition.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
Rear of ConvertIP		
HDMI IN	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	ConvertIP is in TX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	Red/green/orange (flashing).	The ConvertIP "locate" option has been started.

LED	Colors	What it means
HDMI OUT	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	ConvertIP is in RX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.

ConvertIP DSH

LED	Colors	What it means
Front of ConvertIP		
On = TX / Off = RX	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	ConvertIP is in TX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
Status	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up or, if already booted, ConvertIP is in the process of sending or receiving.
	Green (solid)	ConvertIP is idle but operating normally.
	Orange (flashing)	Test signal being sent or firmware being updated.
	Orange (flashing quickly)	DHCP network not found.
	Orange (solid)	Warning condition.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.

LED	Colors	What it means
On = Uncomp / Off = Comp	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up or, if already booted, is in uncompressed 25G mode and operating normally (TX or RX).
	Green (solid)	ConvertIP is in uncompressed mode and operating normally (TX or RX).
	Black (LED not lit)	ConvertIP is in compressed mode and operating normally (TX or RX).
	Orange (flashing)	A firmware update is in progress.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
Rear of ConvertIP		
HDMI IN	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	ConvertIP is in TX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
HDMI OUT	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	ConvertIP is in RX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
SFPs	Green (flashing)	Link with activity.
	Green (solid)	Link with no activity.
	Black (LED not lit)	No SFP connected.
	Yellow (solid)	No link.

ConvertIP DRS

LED	Colors	What it means
Front of ConvertIP		
TX / RX	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	ConvertIP is in TX mode and operating normally.
	Black (LED not lit)	ConvertIP is in RX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
Status	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up or, if already booted, ConvertIP is in the process of sending or receiving.
	Green (solid)	ConvertIP is idle but operating normally.
	Orange (flashing)	Test signal being sent or firmware being updated.
	Orange (flashing quickly)	DHCP network not found.
	Orange (solid)	Warning condition.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
Rear of ConvertIP		
12G SDI	Red (solid)	ConvertIP is in RX mode and operating normally.
	Green (solid)	ConvertIP is in TX mode and operating normally.

ConvertIP DSS

LED	Colors	What it means
Front of ConvertIP		
On = TX / Off = RX	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up.
	Green (solid)	ConvertIP is in TX mode and operating normally.
	Black (LED not lit)	ConvertIP is in RX mode and operating normally.
	Orange (flashing)	A firmware update is in progress.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
Status	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up or, if already booted, ConvertIP is in the process of sending or receiving.
	Green (solid)	ConvertIP is idle but operating normally.
	Orange (flashing)	Test signal being sent or firmware being updated.
	Orange (flashing quickly)	DHCP network not found.
	Orange (solid)	Warning condition.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.

LED	Colors	What it means
On = Uncomp / Off = Comp	Red (solid)	ConvertIP is experiencing a fatal error.
	Green (flashing)	ConvertIP is booting up or, if already booted, is in uncompressed 25G mode and operating normally (TX or RX).
	Green (solid)	ConvertIP is in uncompressed mode and operating normally (TX or RX).
	Black (LED not lit)	ConvertIP is in compressed mode and operating normally (TX or RX).
	Orange (flashing)	A firmware update is in progress.
	All LEDs Orange (solid)	ConvertIP physical buttons are disabled.
	Red/green/orange (flashing).	The ConvertIP “locate” option has been started.
Rear of ConvertIP		
SFPs	Green (flashing)	Link with activity.
	Green (solid)	Link with no activity.
	Black (LED not lit)	No SFP connected.
	Yellow (solid)	No link.
12G SDI	Red (solid)	ConvertIP is in RX mode and operating normally.
	Green (solid)	ConvertIP is in TX mode and operating normally.

ConvertIP button functions

The table below describes the behavior of the **Test**, **Mode**, and **Reset** buttons on the ConvertIP.

Button	Action	What it does
Test	Press and hold for 5 seconds. Repeat action for 1 second to stop.	Sends a test signal to the output.
	Press and hold for 1 second.	Clears warning LED.
Mode	Press and hold for 10 seconds. Repeat action to stop.	Starts the "locate device" function where the ConvertIP LEDs flash repeatedly so you can find it.
	Press and hold with **Reset** button for 1 second.	Toggle between TX and RX modes.
Reset	Press and hold for 1 second.	Reboots the ConvertIP.
	Press and hold for 10 seconds.	Resets ConvertIP to factory default settings.

Appendix C

Matrox Software License Agreement

This appendix includes the following topics:

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Compliance Statements

USA

FCC Compliance Statement
Remark for the Matrox hardware products supported by this guide

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

WARNING

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

Canada

(English) Innovation, Science and Economic Development Canada
CAN ICES-3 (A)/NMB-3 (A)
Remark for the Matrox hardware products supported by this guide

These digital devices do not exceed the Class A limits for radio noise emission from digital devices set out in the Radio Interference Regulation of Innovation, Science and Economic Development Canada.

(Français) Innovation, Sciences et Développement économique Canada
CAN ICES-3 (A)/NMB-3 (A)
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 A prescrites dans le Règlement sur le brouillage radioélectrique édicté par Innovation, Sciences et Développement économique Canada.

Europe

CE

(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 equipment and other peripherals. These products have been tested in a typical Class A compliant host system. It is assumed that these products will also achieve compliance in any Class A compliant system.

(Français) Informations aux utilisateurs Européens – Déclaration de conformité
Remarque sur les produits matériels Matrox couverts par ce guide

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

(Deutsch) Information für europäische Anwender – Konformitätserklärung
Anmerkung für die Matrox Hardware-Produktunterstützung durch dieses Handbuch

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

(Italiano) Informazioni per gli utenti europei – Dichiarazione di conformità
Nota per i prodotti hardware Matrox supportati da questa guida

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

(Español) Información para usuarios europeos – Declaración de conformidad
Observación referente a los productos de hardware de Matrox apoyados por este manual

Estos dispositivos cumplen con la directiva de la CE 2014/30/EU para dispositivos digitales de Clase A. Dichos dispositivos han sido sometidos a prueba y se ha comprobado que cumplen con las normas EN55032/CISPR32 y EN55024/CISPR24. En entornos residenciales, estos productos pueden causar interferencias en las comunicaciones por radio; en tal caso el usuario deberá adoptar las medidas adecuadas. Para satisfacer las disposiciones de la CE, deberán utilizarse cables apantallados para conectar el equipo y demás periféricos. 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.

Korea

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