4K Multiviewer

QuadView® UHDx

QuadView® UHDx KVM

User Guide

November, 2020

RGB Spectrum
950 Marina Village Parkway
Alameda, CA 94501

DOCUMENT

- QuadView UHDx/UHDx KVM User Guide
- 350-12245-01
- November, 2020

This document describes the features and functions of the following products and software versions:

- QuadView UHDx firmware: 1.0.1.E
- QuadView UHDx Web Controller: 1.0.1.A
- QuadView UHDx KM version: 1.8.1.B

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- Read these instructions.
- Keep these instructions.
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- Do not block any of the ventilation openings.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
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- Clean only with a dry cloth.
- Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for the replacement of the obsolete outlet.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- Only use the attachments/accessories specified by the manufacturer.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
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North America

- **Safety:** UL 62368-1/CSA C22.2 No. 62368-1, 2nd Edition 2014
- **Electro-Magnetic Interference/Electro-Magnetic Compatibility (EMI/EMC):**
  - FCC CFR47, Part 15, Subpart B, CLASS 1; ANSI C63.4:2014
  - Industry Canada ICES-003 Issue 6, January 2016

European Union

- **EMI/EMC (Electro-Magnetic Compatibility Directive 2014/30/EU):** EN 55032:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 55024:2010+A1:2015, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
- **Safety (Low Voltage Directive 2014/35/EU):** EN 62368-1:2014
- **Worldwide (Except for European Union) Safety:** IEC 62368-1:2014

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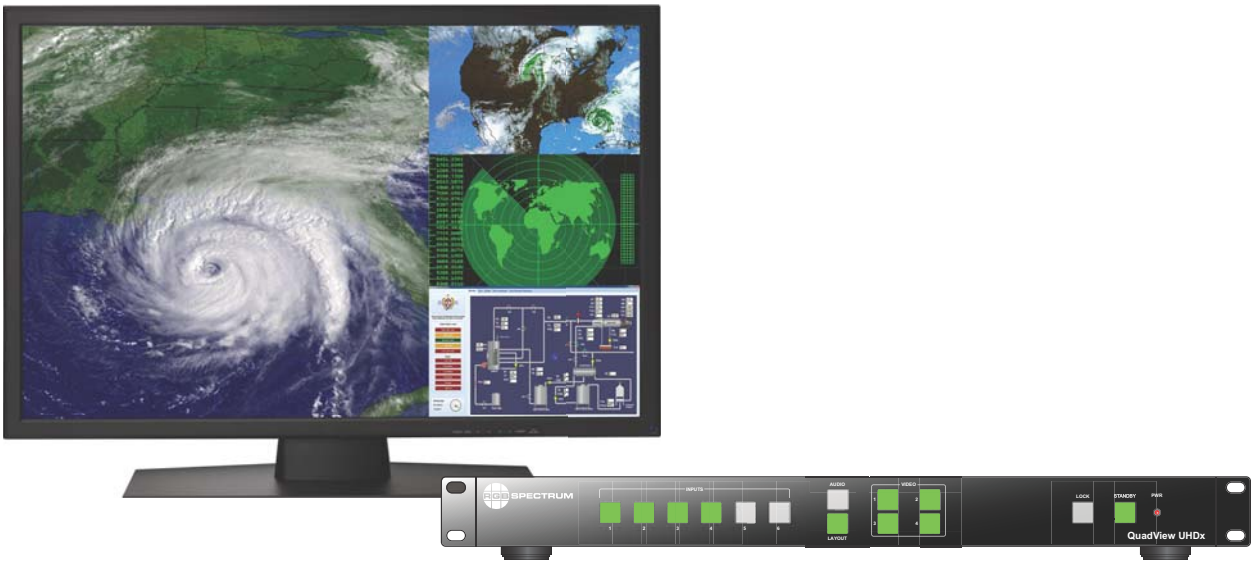
CHAPTER 1 INTRODUCTION

The feature-rich RGB Spectrum QuadView UHDx family internally switches up to six input signals and can display up to four of them simultaneously on a single screen with superior image quality at up to 4K@60Hz resolution with customizable display windows.



The QuadView UHDx connects to any monitor or projector of any resolution from XGA (1,024x768) to 4K/UHD resolution. You can mix and match input resolutions, scale any video input up to 4K UHD, and route any input to any window. The QuadView UHDx displays both HD and 4K UHD inputs without downscaling. Analog and digital audio sources are also supported from any source. The QuadView UHDx KVM also allows you to display uo to four (4) sources/PCs and control them using a single keyboard and mouse via *KlickSimple*™ navigation.

Note	All references to QuadView UHDx in this manual also apply to the QuadView UHDx KVM unless otherwise noted.

Control options include the front panel, a built-in web interface, and third-party control via both Telnet and RS-232. The simple front panel controls make selecting audio, video input, and display layout fast and easy. Just select a customizable layout, select inputs, and route inputs to the desired display windows.

The Auto Layout feature facilitates BYOD for conference rooms, boardrooms, huddle rooms, and any location where devices come and go. Enabling this feature lets you simply plug your source(s) into the HDMI port(s), and the QuadView UHDx will automatically and dynamically select a window layout based on the number of connected HDMI source(s).

The QuadView UHDx supports High-definition Digital Content Protection (HDCP 2.2 and HDCP 1.4) to allow the display of protected content.

The versatile QuadView UHDx delivers next-generation multi-viewer performance that allows users to fully leverage the benefits of 4K UHD resolution displays. It is an ideal solution for boardrooms, entertainment and sports venues, lobbies, control rooms, and command centers.

1.1 Features and Benefits

The QuadView UHDx provides these key features and functions:

1.1.1 System Features

- Displays up to four (4) windows simultaneously from up to six (6) switchable sources.
- Displays up to four (4) windows from one or two multi-head PCs (*QuadView* UHDx KVM).
- Provides 16 customizable display layouts and 16 preset display layouts.
- Allows window scaling to full-window, 4:3, or 16:9 aspect ratios, or native aspect ratio display.
- Supports multiple HDMI output resolutions up to 3840 × 2160 @60Hz.
- Supports 7.1-channel audio.
- Provides optical fiber and stereo analog audio output.
- Supports multiple-channel audio extraction from HDMI or DisplayPort sources.
- Supports Mobile High-Definition Link (MHL™) on the four HDMI input ports.
- Provides a USB port for on-site firmware updates.
- Standard, 1 RU/19-inch width, rack-mountable enclosure.
- Provides cropping of input sources.
- Able to assign layouts to front panel buttons.
- Able to turn on-screen display messages on and off.
- Able to add borders to windows.
- **QuadView UHDx KVM only:** Built-in KVM function includes *KlickSimple* navigation that allows you to use a single keyboard and mouse to control one or two PCs with up to four sources connected to the QuadView UHDx KVM.

1.1.2 Inputs

- 4 × HDMI.
- 2 × DisplayPort.
- Supports input resolutions up to 3840 × 2160 @60Hz.
- Scales input signals for output to a UHD or full HD display.
- Automatically scales source inputs to destination windows.
- Provides fast input switching.

1.1.3 Control

- Easy-to-use front panel controls.
- QuadView UHDx Web Controller, a simple and intuitive web-based interface that supports the Edge, Chrome, and Firefox browsers. Internet Explorer is not supported.
- Command-line interface (CLI) via RS-232 serial or Telnet connection.
- Support for third-party control systems.

1.2 System Control

The RS-232 serial port and Ethernet port provide system control for the QuadView UHDx.

- The RS-232 serial port connects to:
  - An ASCII terminal.
  - Any computer with a serial port.
  - A third-party control system.

  Commands are sent from the terminal or computer to the QuadView UHDx.

Note	USB-to-serial converters are inexpensive and widely available. If needed, use one to connect your USB-equipped computer to the QuadView UHDx serial port.

- The Ethernet port allows you to connect the QuadView UHDx to either:
- A network.
- Directly to a PC.

  This connection allows you control the system using either a Telnet command-line session or the QuadView UHDx Web Controller.

Note	Refer to **“COMMAND LINE CONTROL” on page 51**, for detailed instructions for setting up and using the command-line interface.

1.3 Controls, Indicators, and Connectors

This section describes the QuadView UHDx and QuadView UHDx KVM front and rear panel controls and indicators.

1.3.1 Front Panel Controls and Indicators

Figure 1-1 shows the QuadView UHDx and QuadView UHDx KVM front panel controls and indicators, and Table 1-1 describes them.

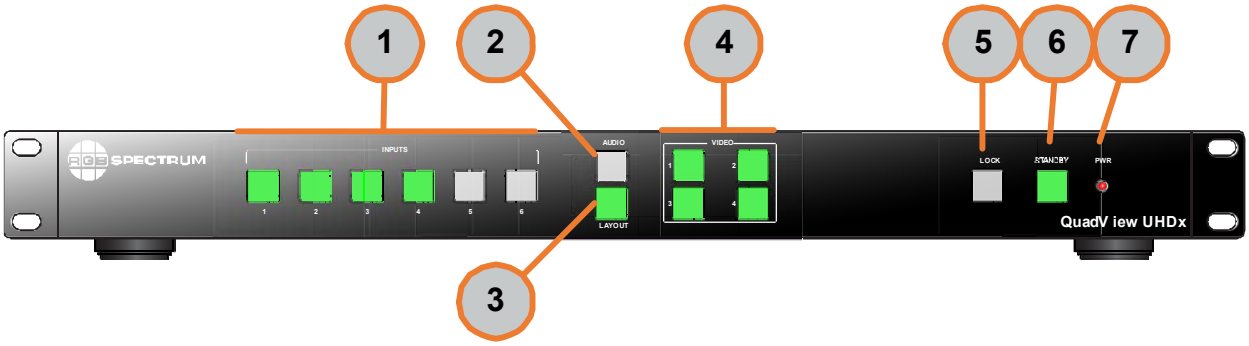


Figure 1-1 Front Panel Controls and Indicators

Table 1-1 QuadView UHDx front Panel Controls and Indicators

ID	Name	Description
1	Input/Layout Selection Buttons and Indicators	Press one of these buttons to select a video input, audio input, or one of Layouts #1 through #6. The pressed button lights to indicate your input selection. The other buttons flash to indicate available selections. You can assign a layout to each button, as described in "Assigning Layouts to Front Panel Buttons" on page 31.
2	Audio (input select mode) Button and Indicator	Press this button to choose an input selection mode: ◆ **Audio:** Indicator ON. ◆ **Video:** Indicator OFF.
3	Layout Selection Button and Indicator	Press this button to load a layout.
4	Video (window) Selection Buttons and Indicators	Press a button to select a window. The button you press lights to indicate your window selection.
5	Lock Button and Indicator	Press this button to select either lock (indicator ON) or unlock (indicator OFF) all front panel buttons.
6	Standby Button and Indicator	Press this button to select either standby mode (indicator OFF) or normal operating mode (indicator ON).
7	Power Indicator LED	Lights to indicate when the unit has power.

1.3.2 Rear Panel Controls and Indicators (Standard)

Figure 1-2 shows the standard QuadView UHDx rear panel connectors, and Table 1-2 describes them.

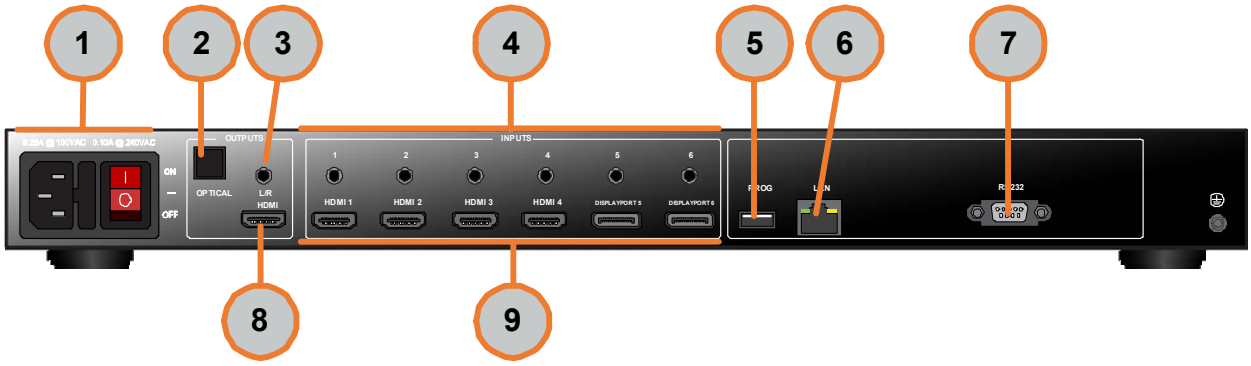


Figure 1-2 Rear Panel Connectors (Standard)

Table 1-2 QuadView UHDx Rear Panel Controls and Indicators (Standard)

ID	Name	Description
1	Power Switch and AC Power Receptacle	Turn the power on or off using this switch. Connect the included AC power cord to this receptacle, and then connect the plug to an available electrical outlet.
2	Optical output	Connect this port to the digital audio input port of your A/V receiver or other audio processing equipment.
3	Analog audio output	Stereo analog audio output. Use cables with 3.5-mm mini-stereo plugs at one end to connect these jacks to an audio/video (A/V) receiver or other audio processing equipment.
4	Analog audio inputs 1-6	Stereo, analog audio inputs. Use cables with 3.5-mm mini-stereo plugs at one end to connect these jacks to audio sources.
5	PROG	Standard USB Type A port for updating QuadView UHDx firmware.
6	LAN	Connect this port to a network to use IP control.
7	RS232	Connect an RS-232 cable from this port to an RS-232 device.
8	HDMI output	Connect an HDMI cable from this port to a High-Definition (HD) or UHD display. Only use HDMI 2.0-compatible, “Premium Certified” cables for all HDMI connections.

Table 1-2 QuadView UHDx Rear Panel Controls and Indicators (Standard)

ID	Name	Description
9	HDMI input 1-4	Connect up to four (4) HD or 4K/UHD sources to these inputs using HDMI cables. Only use HDMI 2.0-compatible, “Premium Certified” cables for all HDMI connections.
	DisplayPort input 5-6	Connect up to two (2) HD or 4K/UHD sources to these inputs using DisplayPort cables.

1.3.3 Rear Panel Controls and Indicators (KVM)

Figure 1-3 shows the QuadView UHDx KVM rear panel connectors, and Table 1-3 describes them.

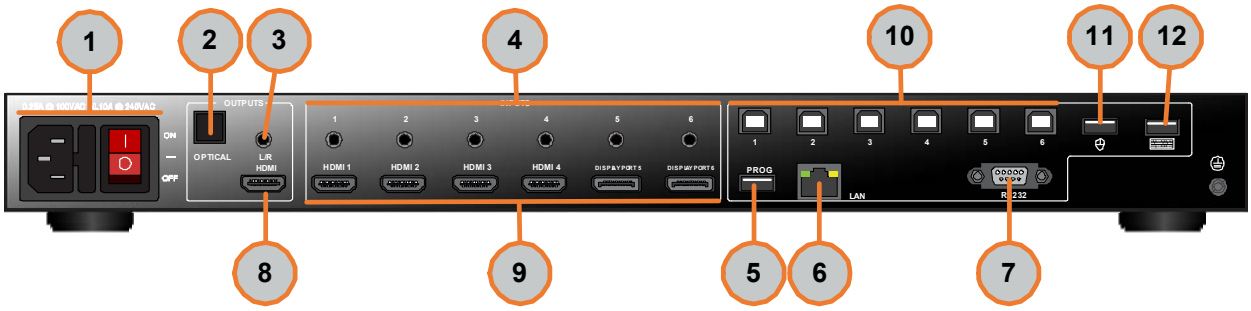


Figure 1-3 Rear Panel Connectors (KVM)

Table 1-3 QuadView UHDx KVM Rear Panel Controls and Indicators

ID	Name	Description
1	Power Switch and AC Power Receptacle	Turn the power on or off using this switch. Connect the included AC power cord to this receptacle, and then connect the plug to an available electrical outlet.
2	Optical output	Connect this port to the digital audio input port of your A/V receiver or other audio processing equipment.
3	Analog audio output	Stereo analog audio output. Use cables with 3.5-mm mini-stereo plugs at one end to connect these jacks to an audio/video (A/V) receiver or other audio processing equipment.
4	Analog audio inputs 1-6	Stereo, analog audio inputs. Use cables with 3.5-mm mini-stereo plugs at one end to connect these jacks to audio sources.
5	PROG	Standard USB Type A port for updating QuadView UHDx firmware.
6	LAN	Connect this port to a network to use IP control.
7	RS232	Connect an RS-232 cable from this port to an RS-232 device.
8	HDMI output	Connect an HDMI cable from this port to a High-Definition (HD) or UHD display. Only use HDMI 2.0-compatible, “Premium Certified” cables for all HDMI connections.

Table 1-3 QuadView UHDx KVM Rear Panel Controls and Indicators

ID	Name	Description
9	HDMI input 1-4	Connect up to four (4) HD or 4K/UHD sources to these inputs using HDMI cables. Only use HDMI 2.0-compatible, “Premium Certified” cables for all HDMI connections.
	DisplayPort input 5-6	Connect up to two (2) HD or 4K/UHD sources to these inputs using DisplayPort cables.
10	KVM USB inputs	Connect computers to these ports for KVM control.
11	Mouse input	Connect the mouse to use for KVM control here.
12	Keyboard input	Connect the keyboard to use for KVM control here.

1.4 Specifications

Table 1-4 lists the QuadView UHDx and QuadView UHDx KVM specifications.

Table 1-4 QuadView UHDx and QuadView UHDx KVM Specifications

Parameter	Description
Inputs	
Video	◆ 4 x HDMI 2.0 ◆ 2 x DisplayPort 1.2
Resolution (max.)	3840 x 2160 @ 60 Hz
Color Sampling	4:4:4, 8-bit
HDCP	2.2 and 1.4 compliant
Audio	Embedded audio from HDMI or DisplayPort sources Stereo analog audio via 6 x 3.5mm mini jacks
Outputs	
Video	HDMI 2.0. Only use HDMI 2.0-compatible, “Premium Certified” cables for all HDMI connections.

Table 1-4 QuadView UHDx and QuadView UHDx KVM Specifications (Continued)

Parameter	Description
Supported Resolutions	◆ Auto ◆ 3840 × 2160 @60Hz, @30Hz, or @24Hz (UHD) ◆ 1900 × 1200 @ 60Hz (WUXGA) ◆ 1920 × 1080 @ 60Hz or 50Hz (1080P) ◆ 1600 × 1200 @ 60Hz (UXGA) ◆ 1680 × 1050 @ 60Hz ◆ 1600 × 900 @ 60Hz reduced blanking ◆ 1400 × 1050 @ 60Hz ◆ 1440 × 900 @ 60Hz ◆ 1366 × 768 @ 60Hz ◆ 1360 × 768 @ 60Hz ◆ 1280 × 1024 @ 60Hz (SXGA) ◆ 1280 × 720 @ 60Hz or 50Hz (720P) ◆ 1280 × 800 @ 60Hz reduced blanking ◆ 1280 × 768 @ 60Hz ◆ 1024 × 768 @60Hz (XGA) ◆ 800 × 600 @60Hz
Audio	◆ 1 x HDMI (embedded) ◆ 1 x optical ◆ 1 x analog (2 channels via 3.5mm mini stereo jacks) ◆ PCM 7.1 or PCM stereo output format
Control	
Web	QuadView UHDx Web Controller
Serial	Serial 9-pin RS-232 port for command-line control by a PC or third-party control system
Network	Network 10/100 Base-T Ethernet for command-line control via Telnet
USB	USB 1 × USB 2.0 Type A for firmware update
USB (KVM model only)	USB 6 x USB 2.0 Type B for computers/devices being controlled via KVM USB 1 x USB 2.0 Type A mouse input for KVM control USB 1 x USB 2.0 Type A keyboard input for KVM control
Power	
Power Supply	Universal 100-240 VAC, 50-60 Hz
Power Consumption (maximum)	15 Watts

Table 1-4 QuadView UHDx and QuadView UHDx KVM Specifications (Continued)

Parameter	Description
Environmental	
Temperature	◆ **Operating (nominal):** 32 ºF to 104 ºF (0 ºC to 40 ºC) ◆ **Non-Operating:** -4 ºF to 140 ºF (-20 ºC to 60 ºC)
Relative Humidity	**Operating:** 20% to 90% non-condensing
Physical	
Dimensions	See **Figure 1-4**. Dimensions are listed in [millimeters] and (inches)
Weight	7.3 lbs. (3.3 kg)
Specifications are subject to change without notice.	

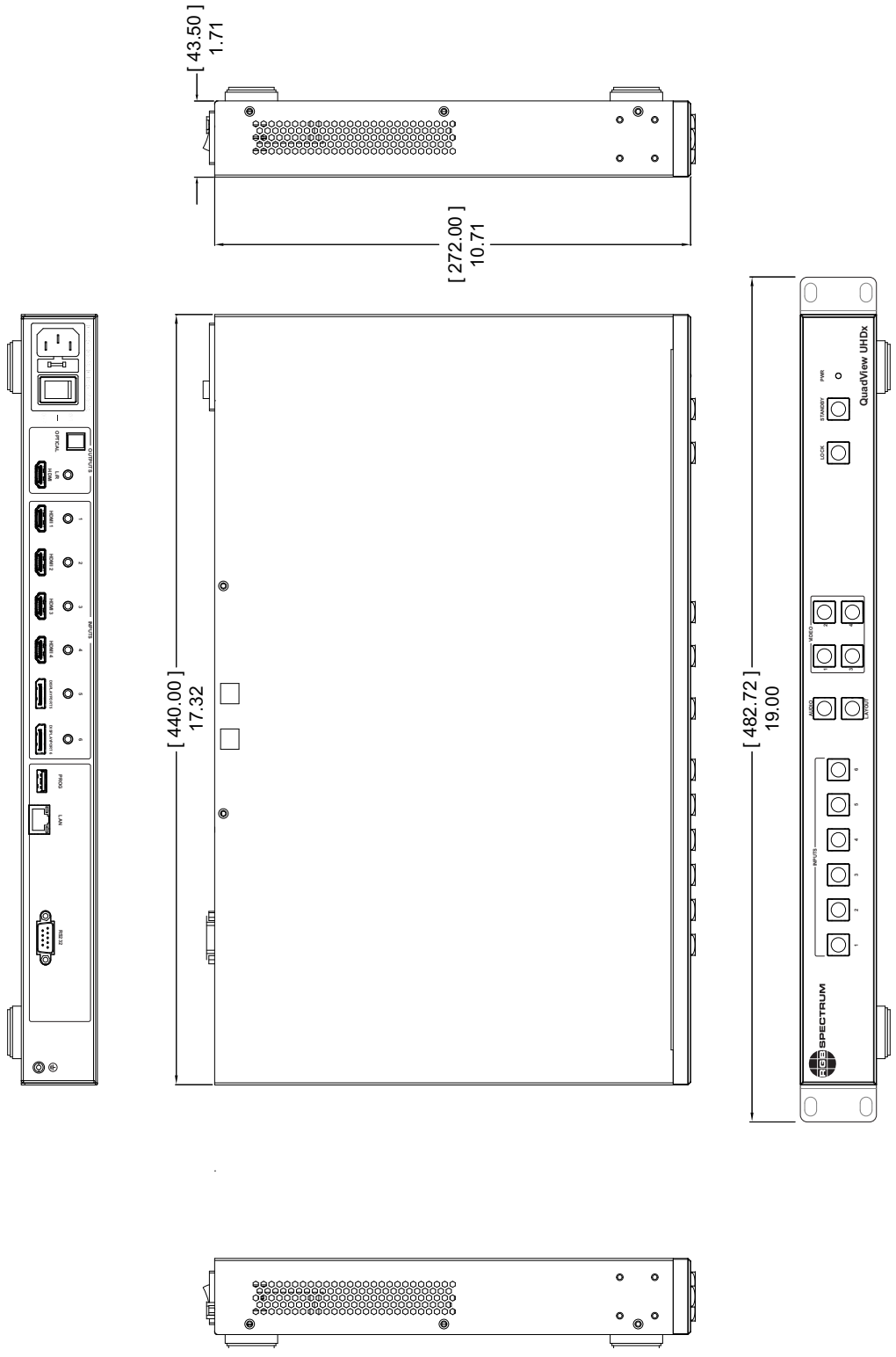


Figure 1-4 Overall Dimensions

CHAPTER 2 INSTALLATION

This chapter describes the QuadView UHDx installation process in the following sections:

2.1 Package Contents

Your QuadView UHDx KVM device ships with the following components:

- Rack mount with ears.
- Localized power cord.

2.2 QuadView UHDx Connections

This section describes how to connect the QuadView UHDx to:

- Audio/video sources.
- A display.
- Speakers or other audio equipment.
- Your network and/or external RS-232 controller.
- AC power.

Important	Use only HDMI 2.0-compatible, "Premium Certified" cables to connect 4K/UHD@60 Hz sources or displays.

2.2.1 Connecting Sources

- **HDMI:** Connect up to four (4), 4K/UHD or 2K/HD HDMI/DVI sources to the **HDMI 1** – **HDMI 4** input ports. For DVI sources, use a DVI-to-HDMI cable or adapter.
- **DisplayPort:** Connect up to two (2), 4K/UHD or 2K/HD DisplayPort sources to the **DISPLAYPORT 5** and **DISPLAYPORT 6** input ports.
- **Analog Audio Input Connections (optional):** Use cables with 3.5-mm stereo plugs at one end to connect the analog audio outputs from DVI or other sources that do not support digital audio output via HDMI or DisplayPort.

2.2.2 Connecting a Display

Connect a 4K/UHD or 2K/HD display to the HDMI Output port using a “Premium Certified” HDMI cable.

2.2.3 Connecting Audio Equipment

Optional: The QuadView UHDx provides HDMI, optical, and 2-channel analog audio output. Figure 2-1 shows the analog output connector pinouts (Tip = left; Ring = right).

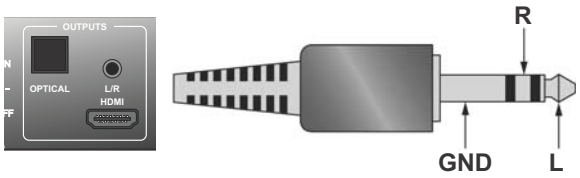


Figure 2-1 Audio Outputs

Either:

- Connect an optical cable from the **OPTICAL** output on the QuadView UHDx to the optical audio input of an audio/video (A/V) receiver or other audio processing equipment.
- Use a cable with 3.5-mm stereo plugs at one end to connect the audio output jack to powered speakers, the audio inputs of an A/V receiver, or other audio processing equipment.

2.2.4 Connecting to a Network

Use a standard Cat 5 or Cat 6 network cable with an RJ-45 plug to connect a control PC, network hub, router, or gateway to the **ETHERNET** port on the QuadView UHDx. See Figure 2-2.

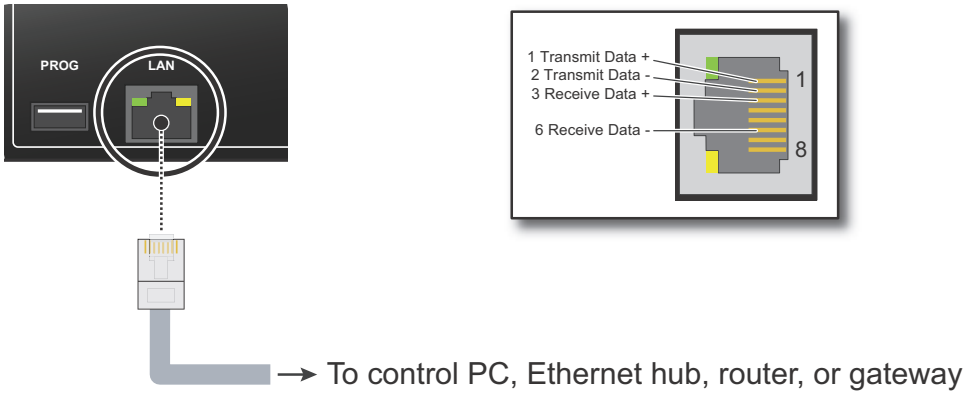


Figure 2-2 Connecting to a Network

2.2.5 Connecting a Control PC or Control System

Optional: Use a straight-through 9-pin RS-232 cable to connect a PC or control/automation system (if present) to the **RS-232** port on the QuadView UHDx. See Figure 2-3.

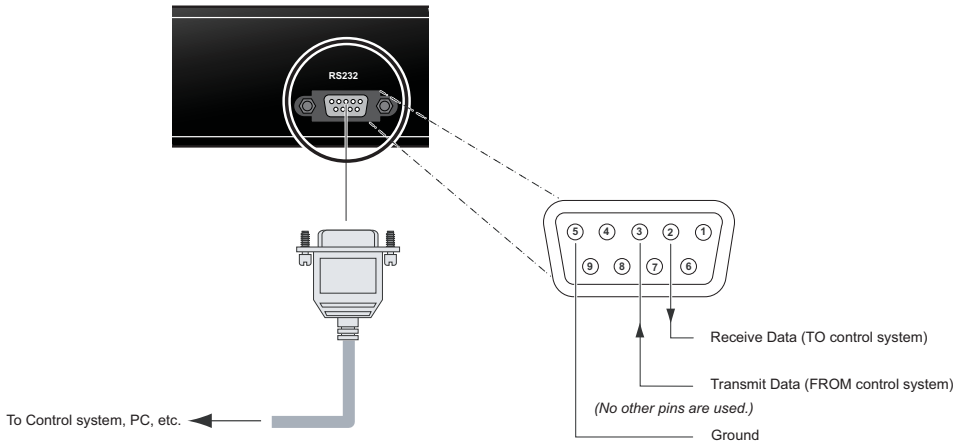


Figure 2-3 RS-232 Controller Connection

2.3 KVM Connections (QuadView UHDx KVM Only)

If you are using a QuadView UHDx KVM (see Figure 1-3), then you can use a keyboard and mouse to connect up to six (6) PC or laptop computers and control up to four (4) of them at a time.

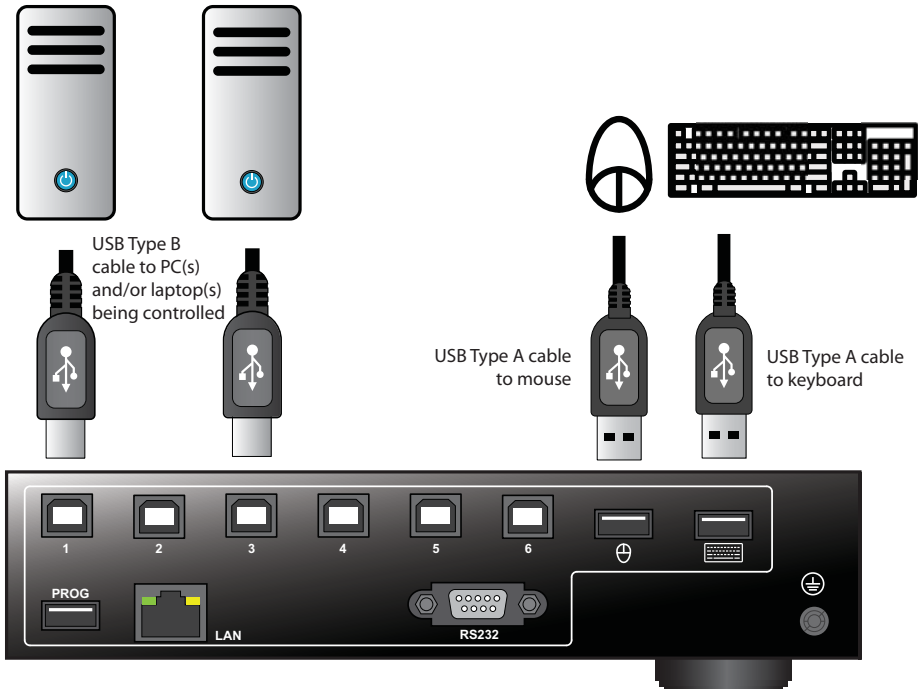


Figure 2-4 KVM Connections

Table 2-1 lists the appropriate KVM connections:

Table 2-1 KVM Connections

If the PC or laptop is supplying video to this port...	...then connect the PC or laptop to the following USB port.
HDMI 1	1
HDMI 2	2
HDMI 3	3
HDMI 4	4
DISPLAYPORT 5	5
DISPLAYPORT 6	6

See "Using the KVM Function (QuadView UHDx KVM Only)" on page 46 for instructions on using the KVM function.

2.3.1 Multi-Head Sources

You can use the QuadView UHDx KVM to control a remote PC with up to four (4) display heads via *KlickSimple* navigation, as shown in **Figure 2-5**.

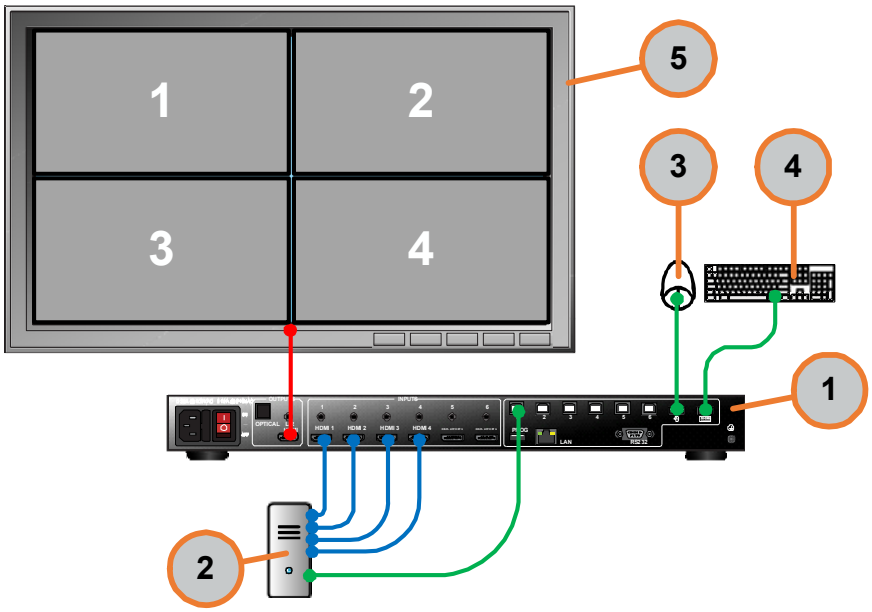


Figure 2-5 Connecting a Single Multi-Head Remote PC

The numbered callouts in this figure depict the following components:

- **QuadView UHDx KVM unit (1):** Provides KVM control of the remote PC.
- **Remote PC (2):** Is controlled by the QuadView UHDx KVM unit. Quad-head PC shown.
- **Mouse (3):** Sends control inputs to the remote PC.
- **Keyboard (4):** Sends control inputs to the remote PC.
- **Monitor (5):** Displays each of the remote PC heads in a separate window.

To connect a multi-head PC to a QuadView UHDx KVM unit:

1. Connect a USB mouse to the **MOUSE** port on the QuadView UHDx KVM unit.
2. Connect a USB keyboard to the **KEYBOARD** port on the QuadView UHDx KVM unit.
3. Connect a USB cable from the remote PC to the **KVM 1** port on the QuadView UHDx KVM unit.
4. Connect the first display head from the remote PC to the **HDMI 1** port on the QuadView UHDx KVM unit using a “Premium Certified” HDMI cable.

5. Repeat Step 4 for the remaining display head(s), being sure to connect Head 2 to the **HDMI 2** port, and so on.

Important All of the display heads on the remote PC must be set to the same resolution and refresh rate.

6. Connect the monitor to the **HDMI OUT** port on the QuadView UHDx KVM unit using a "Premium Certified" HDMI cable.

7. Enable Multi-Head Switching mode, as described in **"Multi-Head Switching Mode" on page 39**.

When the system is powered on, the output from Head 1 will appear in Window 1 on this monitor, and so on. You may now control the remote PC as described in **"Supported KlickSimple Use Cases" on page 47** using one of the supported use cases described in **"Supported KlickSimple Use Cases" on page 47**.

2.4 Powering on the QuadView UHDx

Important Turn on the display before turning on or resetting the QuadView UHDx to ensure proper display detection.

To power on the QuadView UHDx:

1. Turn on your display.

2. Turn on your source components.

3. Plug the female end of the supplied power cord into the AC power inlet at the rear of the QuadView UHDx (AC 100V ~ 240V). See **Figure 1-3**.

4. Connect the other end to an AC power source.

5. Turn the main power switch on the rear panel to the ON position.

   The switch and front panel PWR indicator both illuminate.

   All of the front panel buttons light for approximately three seconds and then go out, except for the **INPUT 1-4**, **VIDEO 1-4**, and **STANDBY** buttons, which remain on).

Your QuadView UHDx is now ready for use.

CHAPTER 3 OPERATION

This chapter describes all of the features and functions available through the QuadView UHDx front panel controls, and the QuadView UHDx Web Controller. You may also access these features and functions via the command-line interface. Refer to **"COMMAND LINE CONTROL" on page 51**.

3.1 Standby and Normal Modes

The **PWR** LED located next to the **STANDBY** button on the front panel (see **Figure 1-1**) indicates the power state of the QuadView UHDx:

- **Red:** Power is being supplied to the device.
- **Off:** The device is not receiving power. Ensure that the rear panel power switch is in the ON position, and then check the connection between the power receptacle on the QuadView UHDx and the AC outlet.

To take the QuadView UHDx out of Standby mode, either:

- Press the **STANDBY** button on the front panel.
- Send the ASCII command `ATM 09 POW_WUP W 1` from a PC or other controller via the RS-232 interface.

3.2 Screen Layouts

The QuadView UHDx includes physical connections for up to six (6) sources and can display up to four of those sources at a time in one of up to 32 layouts.

- Layouts #1 through #16 are predefined. See **Figure 3-1**.
- You may create up to 16 custom screen layouts. Each layout may include up to four windows in a variety of sizes and positions.

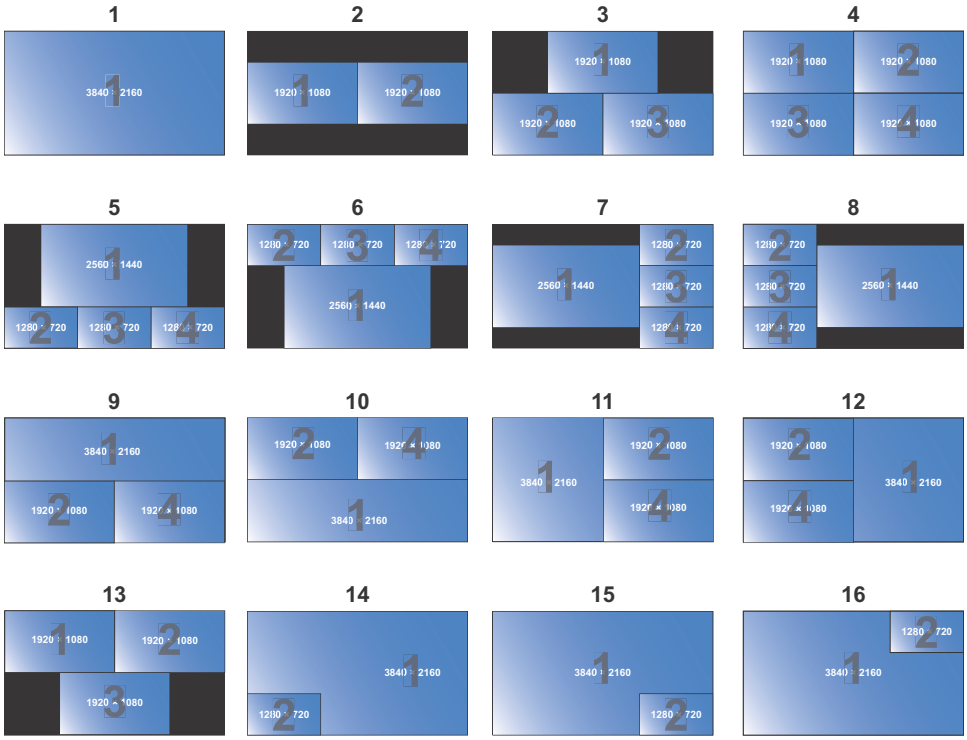


Figure 3-1 Predefined Screen Layouts

You may select a layout by either:

- **Using the front panel:** See **"Front Panel Controls" on page 19**.
- **Using the QuadView UHDx Web Controller:** See **"The Layouts Tab" on page 29**.
- **Using the command line:** See **"Layout Commands" on page 58**.

3.3 Front Panel Controls

To select a layout using the front panel, press a **LAYOUT** button to load the screen layout assigned to that button.

- The front panel **LAYOUT** button lights to indicate your selection.
- **The WINDOW 1~4** buttons light to indicate the number of windows in the layout you just selected.

When powered up for the first time, the QuadView UHDx loads Screen Layout #4 and displays HDMI inputs 1 through 4 in the four windows, as shown in Figure 3-2.

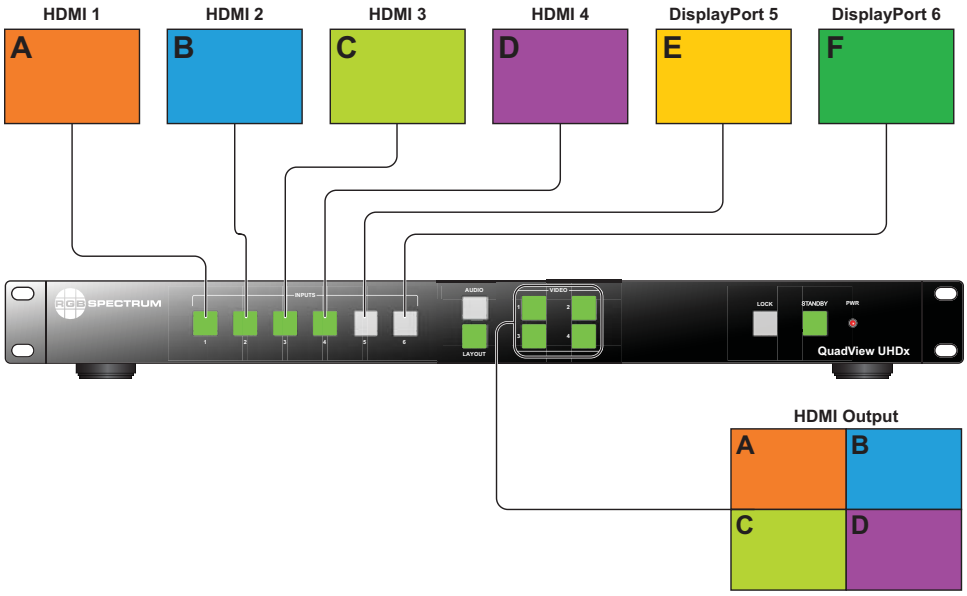


Figure 3-2 Default Source-to-Window Routing

To route a source to a window using the front panel, either:

- Select a source followed by a window.
- Select a window followed by a source.

See the following sections for instructions.

3.3.1 Single-Window Mode

To use the QuadView UHDx in single-window mode, either:

- Press the **LAYOUT** button, and then press the **INPUT 1** button.
- Press the **INPUT 1** button, and then press the **LAYOUT** button.

By default, the QuadView UHDx displays the **HDMI 1** source in Window 1. To display a different source (e.g. **DISPLAYPORT 5**) in Window 1, either:

- Press the **VIDEO 1** button, and then press the **INPUT 5** button.
- Press the **INPUT 5** button, and then press the **VIDEO 1** button.

Note The QuadView UHDx will exit source selection mode without changing the source-to-window routing if you do not press an **INPUT** button within five (5) seconds after pressing the **VIDEO 1** button (or vice versa).

3.3.2 Dual-Window Mode

To use the QuadView UHDx in dual-window mode, either:

- Press the **LAYOUT** button, and then press the **INPUT 2** button.
- Press the **INPUT 2** button, and then press the **LAYOUT** button.

By default, the QuadView UHDx displays the **HDMI 1** source in Window 1 and the **HDMI 2** source in Window 2. To display a different source (e.g. **DISPLAYPORT 5**) in Window 1, either:

- Press the **VIDEO 1** button, and then press the **INPUT 5** button.
- Press the **INPUT 5** button, and then press the **VIDEO 1** button.

Note The QuadView UHDx will exit source selection mode without changing the source-to-window routing if you do not press an **INPUT** button within five (5) seconds after pressing the **VIDEO 1** button (or vice versa).

You may display a different source in Window 2 using either of the methods described above.

3.3.3 Triple-Window Mode

To use the QuadView UHDx in triple-window mode, either:

- Press the **LAYOUT** button, and then press the **INPUT 3** button.
- Press the **INPUT 3** button, and then press the **LAYOUT** button.

By default, the QuadView UHDx displays the **HDMI 1** source in Window 1, the **HDMI 2** source in Window 2, and the **HDMI 3** source in Window 3. To change these assignments, follow the steps for changing source-to-window routing described in **"Dual-Window Mode" on page 20**.

3.3.4 Quad-Window Mode

To use the QuadView UHDx in quad-window mode, either:

- Press the **LAYOUT** button, and then press the **INPUT 4** button.
- Press the **INPUT 4** button, and then press the **LAYOUT** button.

By default, the QuadView UHDx displays the **HDMI 1** source in Window 1, the **HDMI 2** source in Window 2, the **HDMI 3** source in Window 3, and the **HDMI 4** source in Window 4. To change these assignments, follow the steps for changing source-to-window routing described in **"Dual-Window Mode" on page 20**.

3.4 Audio Inputs

The QuadView UHDx includes six audio inputs.

- The QuadView UHDx can pass the audio embedded in the HDMI or DisplayPort signal to the HDMI output when you select an HDMI or DisplayPort input.
- If the HDMI or DisplayPort input has no embedded audio, then the audio input can come from the corresponding 3.5-mm audio port. For example, if you connect a source to the **HDMI 1** input, then you can route analog audio input 1 (located above the **HDMI1** input) to the audio output.

You can route any audio input to the audio outputs independently of your video input selections. To route an audio input signal to the audio outputs using the front panel, either:

- Press the **AUDIO** button, then press an **INPUT** button.
- Press an **INPUT** button, then press the **AUDIO** button.

Note	The QuadView UHDx will exit audio input selection mode without changing the source-to-window routing if you do not press an **INPUT** button within five (5) seconds after pressing the **AUDIO 1** button (or vice versa).

3.5 On-Screen Display (OSD) Messages

The QuadView UHDx provides a variety of status information via its built-in OSD, if enabled. The OSD can be enabled and disabled, as described in **"OSD Control Settings" on page 41**.

3.5.1 Video Input Status and Network Settings

Taking the QuadView UHDx out of Standby mode or loading a screen layout displays the following information in each window for approximately 10 seconds:

- Input source.
- Input signal resolution.
- **[Input Name] Not Connected** if no signal is present.

Figure 3-3 OSD Messages – Video Input Status

The OSD then displays the current IP address and TCP port number in Window 1 for approximately 10 seconds.

Figure 3-4 OSD Messages – Network Settings

You may disable displaying this information by either:

- **QuadView UHDx Web Controller:** Select **Advanced > Audio OSD > OFF** and/or A**dvanced > Network OSD > OFF**, as appropriate.
- **LAN or RS-232 interface:** Send the ASCII command `ATM 09 VDO_OSD W 1` from a PC or other controller to disable both video and audio OSD messages at once. See **"COMMAND LINE CONTROL" on page 51**.

3.5.2 Audio Status

The following OSD messages appear when you change or mute the audio volume:

- When you change the audio volume, the new setting appears as a volume slider at the bottom of the screen for approximately 15 seconds.
- A **Muted** icon (speaker with an X) appears in the lower-left corner of the display space when you mute the audio output.
- The **Active** icon (speaker with sound waves) appears when you either change the audio volume or un-mute the audio output.

You may disable displaying this information by either:

- **QuadView UHDx Web Controller:** Select **Advanced > Audio OSD > OFF**.
- **LAN or RS-232 interface:** Send the ASCII command `ATM 09 AUD_OSD W 1` from a PC or other controller. See **"COMMAND LINE CONTROL" on page 51**.

3.6 Locking & Unlocking the Front Panel Buttons

You can lock all of the QuadView UHDx front panel buttons to prevent accidental operation.

- Press the **LOCK** button once to lock the front panel buttons.
- Press the **LOCK** button again to unlock the buttons.

Power-cycling the QuadView UHDx also unlocks the buttons.

3.7 Using the QuadView UHDx Web Controller

The QuadView UHDx Web Controller provides a graphical alternative to the front panel buttons and/or the RS-232 command-line interface in a tabbed layout. See the following:

- **"The General Tab" on page 24**
- **"The Layouts Tab" on page 29**
- **"The EDID Management Tab" on page 32**
- **"The Network Tab" on page 36**
- **"The Advanced Tab" on page 37**
- **"Firmware Updates" on page 67**

To begin using the QuadView UHDx Web Controller:

1. Launch your web browser.

Note RGB Spectrum recommends using Microsoft Edge, Google Chrome, or Mozilla Firefox when accessing the QuadView UHDx Web Controller or performing a firmware upgrade. Microsoft Internet Explorer is not supported.

2. Enter the QuadView UHDx IP address into your browser address bar in the format

   `http://xxx.xxx.xxx.xxx`

   where `xxx.xxx.xxx.xxx` is the IP address. The default IP address is `192.168.1.200`. See **"Video Input Status and Network Settings" on page 21** if you do not know the QuadView UHDx IP address.

Note By default, the QuadView UHDx is configured to use static IP addressing. To configure the QuadView UHDx to obtain its IP address and other network interface settings from a Dynamic Host Configuration Protocol (DHCP) server, see **"The Network Tab" on page 36**.

3. Press [ENTER].

   If the QuadView UHDx is powered on and ready to accept HTTP connections and your PC network settings are correct, then the QuadView UHDx Web Controller **Login** screen will appear. See **Figure 3-5**.

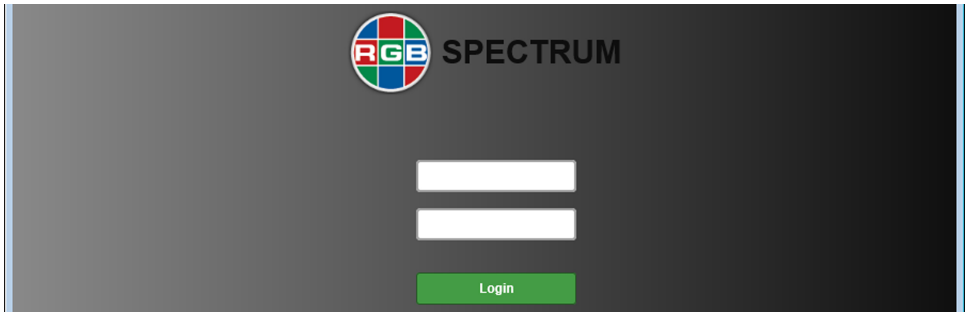


Figure 3-5 Login Screen

4. Enter the following credentials in the appropriate fields:

   - **Username:** `admin`.
   - **Password:** Passwords are case-sensitive. If you are logging in for the first time, then use the default password `admin`.

Note See **"Authentication Settings" on page 44** for instructions on changing the password.

5. Click **Login**.

   The **General** tab of the QuadView UHDx Web Controller appears. See **Figure 3-6**.

3.8 The General Tab

The **General** tab of the QuadView UHDx Web Controller allows you to perform the following basic configuration:

- **Video:** See **"Video Settings" on page 25** and **Figure 3-6**.
- **Cropping:** See **"Crop Input Settings" on page 27** and **Figure 3-7**.
- **Audio:** See **"Audio Settings" on page 28** and **Figure 3-8**.

3.8.1 Video Settings

The **Video Settings** area of the **General** tab appears as shown in Figure 3-6.

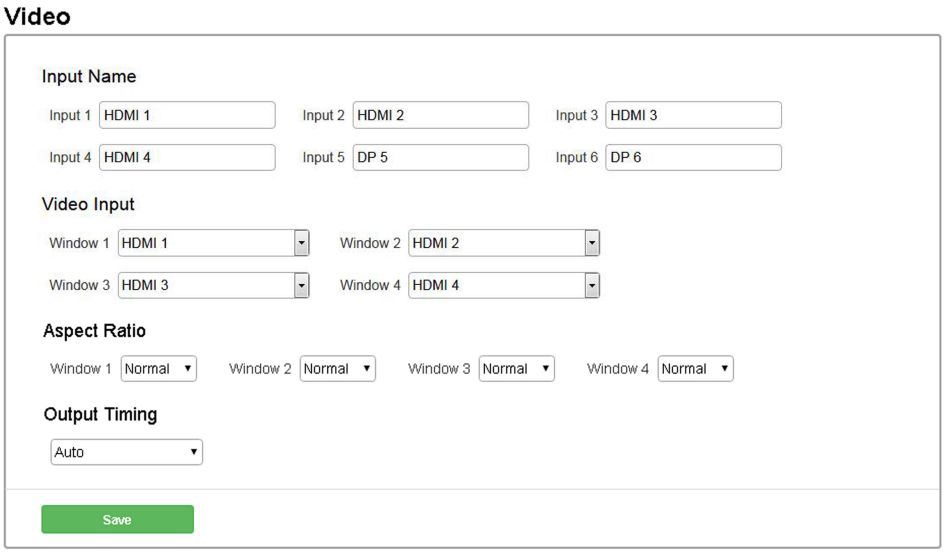
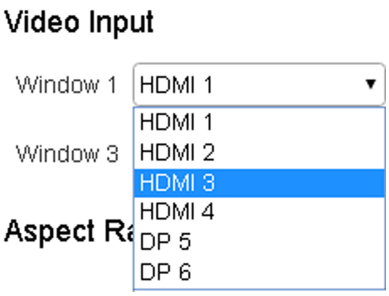


Figure 3-6 General > Video Settings

This tab contains the following functions:

- **Input Name:** You may assign a descriptive name to a video input by entering the name in the text box for that input. The name can be up to 12 characters long and can include letters, numbers, spaces, and some special characters.
- **Video Input:** Route a video input to a window by selecting it from the pull-down menu for the desired window.



- **Aspect Ratio:** The following aspect ratio settings are available for each window:
  - **Normal:** Display the source image at its original, native aspect ratio.
  - **Full:** Scale the source image to fill the entire window.
  - **16:9:** Scale the source image to a 16:9 aspect ratio.
  - **4:3:** Scale the source image to a 4:3 aspect ratio.
- **Output Timing:** The QuadView UHDx supports the following output resolutions:
  - Auto.
  - 3840 × 2160 @60Hz, @30Hz, or @24Hz (UHD).
  - 1900 × 1200 @ 60Hz (WUXGA).
  - 1920 × 1080 @ 60Hz or 50Hz (1080P).

- 1600 × 1200 @ 60Hz (UXGA).
- 1680 × 1050 @ 60Hz.
- 1600 × 900 @ 60Hz reduced blanking.
- 1400 × 1050 @ 60Hz.
- 1440 × 900 @ 60Hz.
- 1366 × 768 @ 60Hz.
- 1360 × 768 @ 60Hz.
- 1280 × 1024 @ 60Hz (SXGA).
- 1280 × 720 @ 60Hz or 50Hz (720P).
- 1280 × 800 @ 60Hz reduced blanking.
- 1280 × 768 @ 60Hz.
- 1024 × 768 @60Hz (XGA).
- 800 × 600 @60Hz.

Select the output resolution that matches the capabilities of your display. Selecting **Auto** causes the QuadView UHDx to read the Extended Display Identification Data (EDID) from the display device and set the output resolution accordingly.

Click **Save** to confirm your changes when you have finished configuring video settings.

3.8.2 Crop Input Settings

The **Crop Input** area of the **General** tab appears as shown in Figure 3-7.

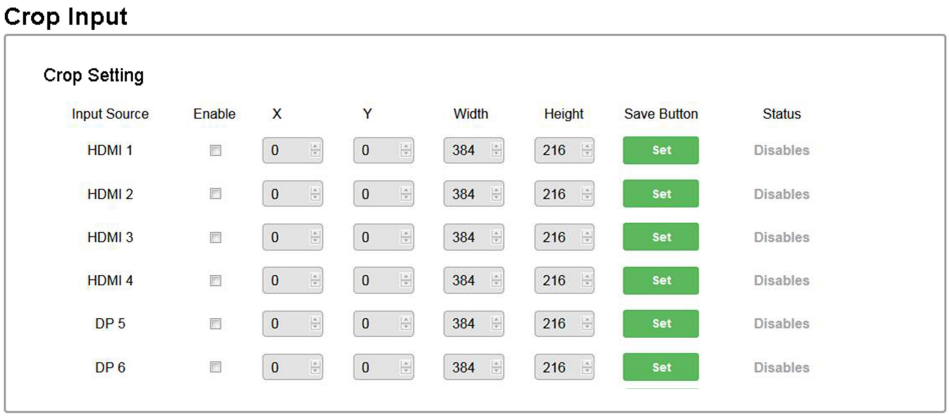


Figure 3-7 General > Crop Input Settings

You can crop an input signal to highlight a region of interest. To do this:

1. Check the **Enable** box for the input source you wish to crop.
2. Enter the **X**, **Y**, **Width**, and **Height** values that define the region of interest by either:
   - Typing values directly.
   - Using the spin controls.

Tip	You may use the [UP ARROW] and [DN ARROW] keys to change the X/Y, width, and height values in small increments. The increment size depends on the output resolution.

Example	To crop a 1920 × 1080 source to show only the bottom-right quadrant, use the following values: ◆ X = 960 ◆ Y = 540 ◆ Width = 960 ◆ Height = 540

3. Click **Set**.

To remove cropping from an input signal:

1. Clear the **Enable** check box for that input source.
2. Click **Set**.

3.8.3 Audio Settings

The **Audio Settings** area of the **General** tab appears as shown in Figure 3-8.

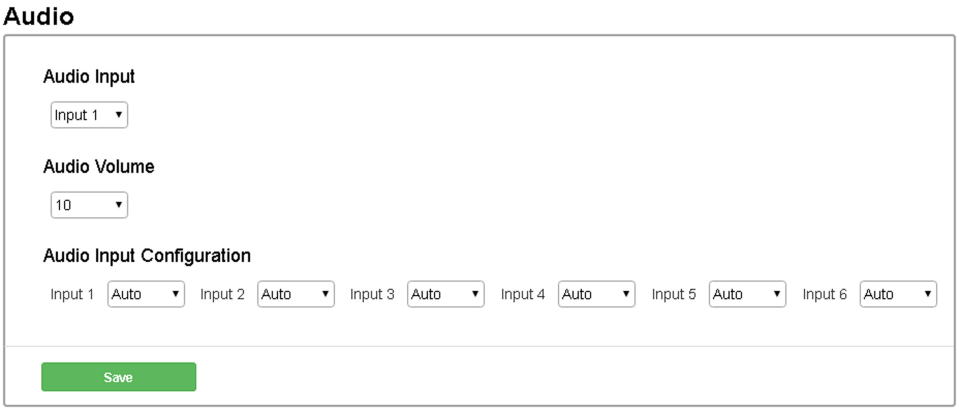
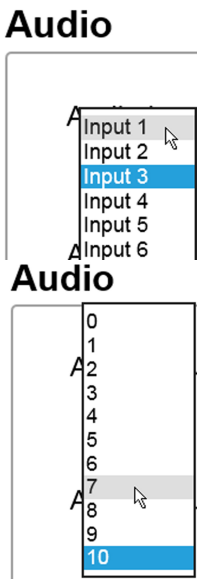


Figure 3-8 General > Audio Settings

This tab contains the following functions:



- **Audio Input:** To route an audio input to the audio outputs, select it here.
- **Audio Volume:** Output volume ranges from 0 to 10, where:
  - Zero (0) mutes the audio output.
  - 10 is the maximum volume.

  If you have muted the audio output using the **Audio Mute** control on the **Advanced** tab, then changing the audio volume will un-mute it.
- **Audio Input Configuration:** Configure audio as follows:
  - **HDMI or DisplayPort input with a PC or other device that does not support embedded audio output via HDMI:** Set the **Audio Input Configuration** to **External** for that input. Make sure to connect the audio output from your source as described in "Connecting Audio Equipment" on page 12. This setting associates an analog audio input with the corresponding HDMI or DisplayPort input.
  - **PC or other device that does support embedded audio output via HDMI:** Set the **Audio Input Configuration** to **Auto** to route the HDMI/DP (digital) audio signal to the **HDMI** and **OPTICAL** audio output when an HDMI or DisplayPort input is selected.
  - **If needed:** Set the **Audio Input Configuration** to **Internal** to force the system to use the embedded audio input stream. Select this option if you hear a buzzing sound when the **Auto** setting is selected.

Click **Save** to confirm your changes when you have finished configuring audio settings.

3.9 The Layouts Tab

The **Layouts** tab of the QuadView UHDx Web Controller allows you to customize, save, and load a preset or custom screen layout:

- **Customize:** See "Layout Customization" on page 29 and Figure 3-9.
- **Recall:** See "Layout Recall" on page 31 and Figure 3-10.

3.9.1 Layout Customization

The **Layout Customization** area of the **Layouts** tab appears as shown in Figure 3-9.

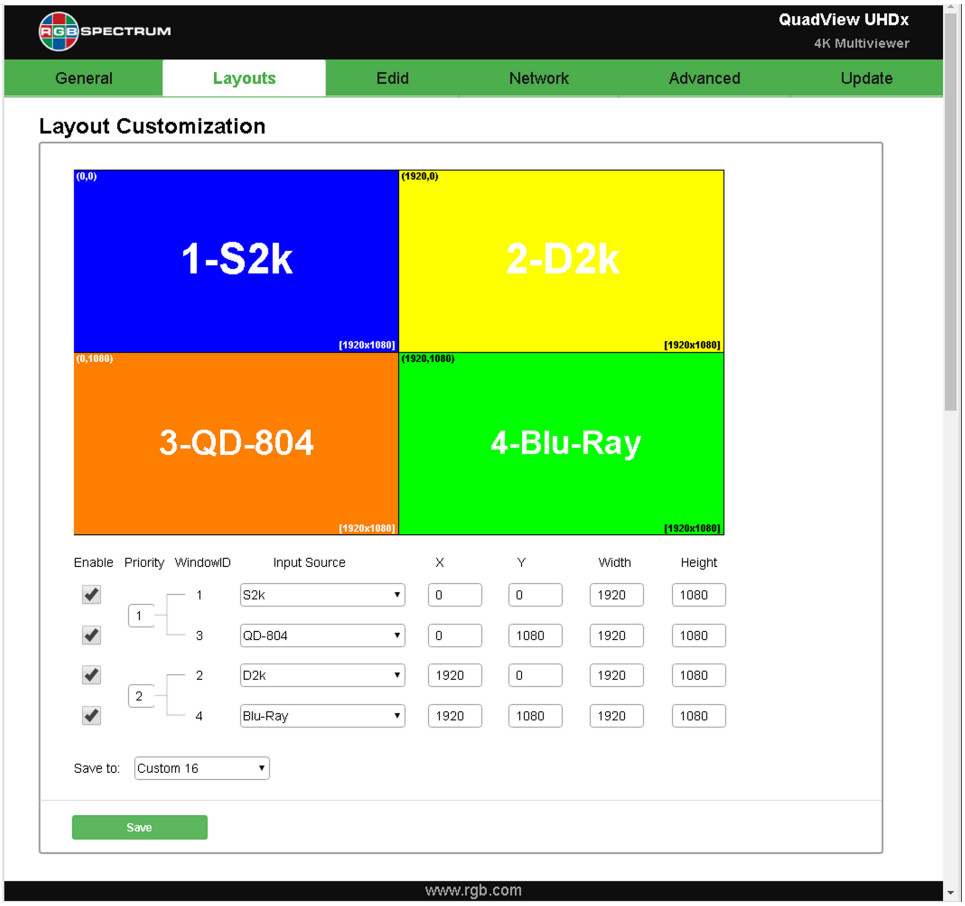


Figure 3-9 Layouts > Layout Customization Settings

Note Layouts only contain window size, position, and priority information. Use the **Video Input** controls on the **General** tab to route sources to windows. See "Video Settings" on page 25.

This tab contains the following functions for each window:

- **Enable/Disable:** You can enable or disable individual windows.
  - **Enable:** To enable a window, check the **Enable** box for that window.
  - **Disable:** To disable a window, clear the **Enable** check box for that window.
- **Priority:** To change the front to-back position of Windows 1 and 3, enter either `1` or `2` in the **Priority** field. The QuadView UHDx automatically adjusts this setting for Windows 2 and 4. When you set it to `1`, that window pair will appear behind the other.
- **Position:** Position the mouse pointer over the window, and then click and drag that window to the desired location.

  You cannot position Window 1 and Window 3 such that they overlap, nor can you do this with Window 2 and Window 4. If you attempt this, the QuadView UHDx Web Controller will change the window color to gray to indicate that this window placement is invalid.

- **Size:** To size a window, either:
  - Position the mouse pointer over a window edge.

    When positioned over the left or right edge, the cursor changes to horizontal arrows. When positioned over the top or bottom edge the cursor changes to vertical arrows. When positioned over a corner, the cursor changes to diagonal arrows.

    Click and drag the window edge or corner to change the width and height.
  - Enter pixel values for the **X** origin, **Y** origin, **Width**, and **Height** by either typing values directly or using the spin controls in the appropriate fields.

Tip You may use the [UP ARROW] and [DN ARROW] keys to change the X/Y, width, and height values in small increments. The increment size depends on the output resolution.

When you have finished customizing the layout:

1. Use the **Save to:** pull-down menu to specify where you want to save the layout (**Custom 1** through **Custom 16**).
2. Click **Save**.

You can update a custom layout at any time. To do this:

1. Load the layout you want to change.
2. Make the desired changes.
3. Save your changes to the same location. This overwrites the previous layout settings.

3.9.2 Layout Recall

The **Layout Recall** area of the **Layouts** tab appears as shown in Figure 3-10.

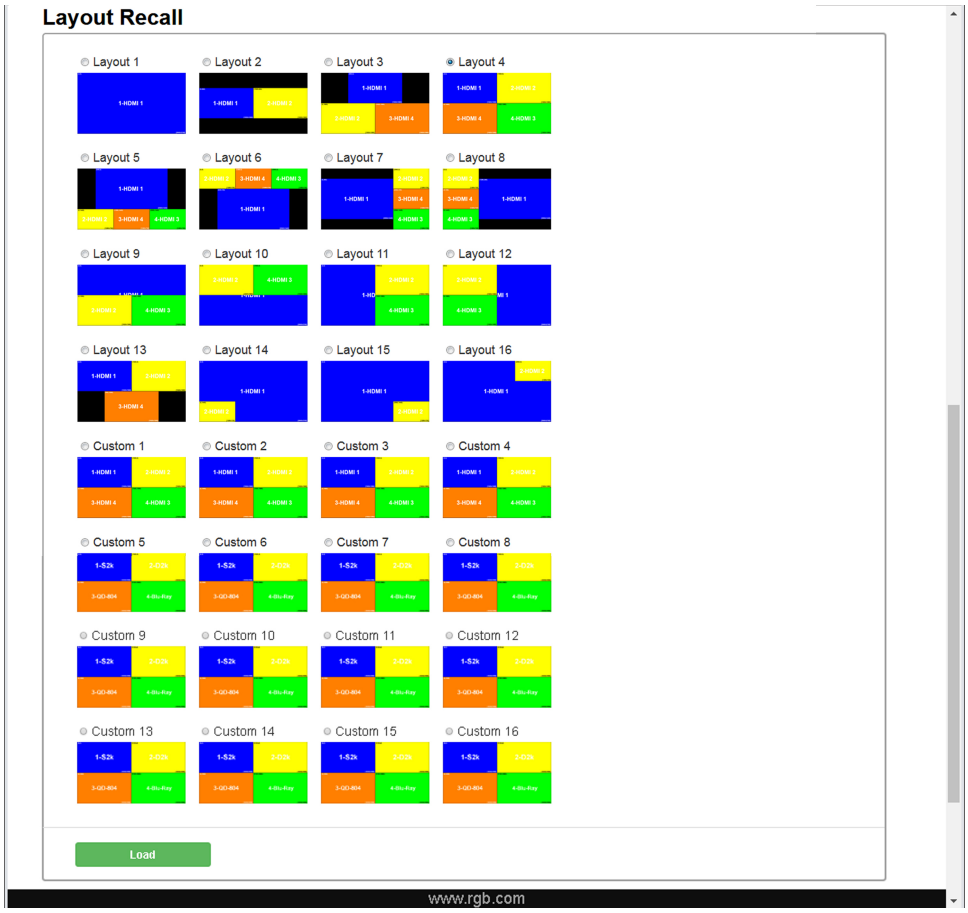


Figure 3-10 Layouts > Layout Recall

To recall a layout:

1. Click the radio button next to the desired layout number.
2. Click **Load**.

3.9.3 Assigning Layouts to Front Panel Buttons

As shown in Figure 3-11, you can assign a layout to each of the six **INPUT/LAYOUT** buttons, as follows:

1. Use the pull-down menu for the button you want to map to select the layout to assign to that button. For example, to assign Layout 6 to the **INPUT/LAYOUT 3** button, use the **Input 3** pull-down menu to select **Layout 6**.
2. Click **Save**.

To select the desired layout:

1. Press the **LAYOUT SELECTION** button.
2. Press the desired **INPUT/LAYOUT** button.

The QuadView UHDx device displays the layout assigned to that button. In this example, pressing the **INPUT/LAYOUT 3** button will display Layout 6.

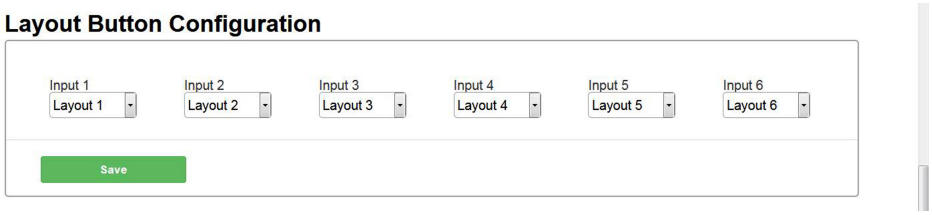


Figure 3-11 Assigning Layouts to INPUT/LAYOUT Buttons

3.10 The EDID Management Tab

The **EDID Management** tab of the QuadView UHDx Web Controller allows you to copy, upload, and download EDID registers:

- **Copy:** See **"EDID Copy" on page 32**, **Figure 3-12**, and **Figure 3-13**.
- **Upload:** See **"EDID Upload" on page 34** and **Figure 3-14**.
- **Download:** See **"EDID Download" on page 35** and **Figure 3-15**.

The QuadView UHDx includes nine EDID registers:

- **Internal:** Three internal (fixed) EDID registers.
  - 4K_2 Channel.
  - 1080P_2CH.
  - 4K@60Hz (for DisplayPort).
- **Custom:** Six custom (user-defined) EDID registers designated Custom 1 through Custom 6. Specify which custom EDID register to use when you upload Custom EDID.

3.10.1 EDID Copy

You can copy any Internal or Custom EDID to any input port (see **Figure 3-12** and **Figure 3-13**). To copy EDID to an input:

1. Use the pull-down menu for the desired input to select the source EDID (**Internal**, **Custom** or **HDMI_Output**).

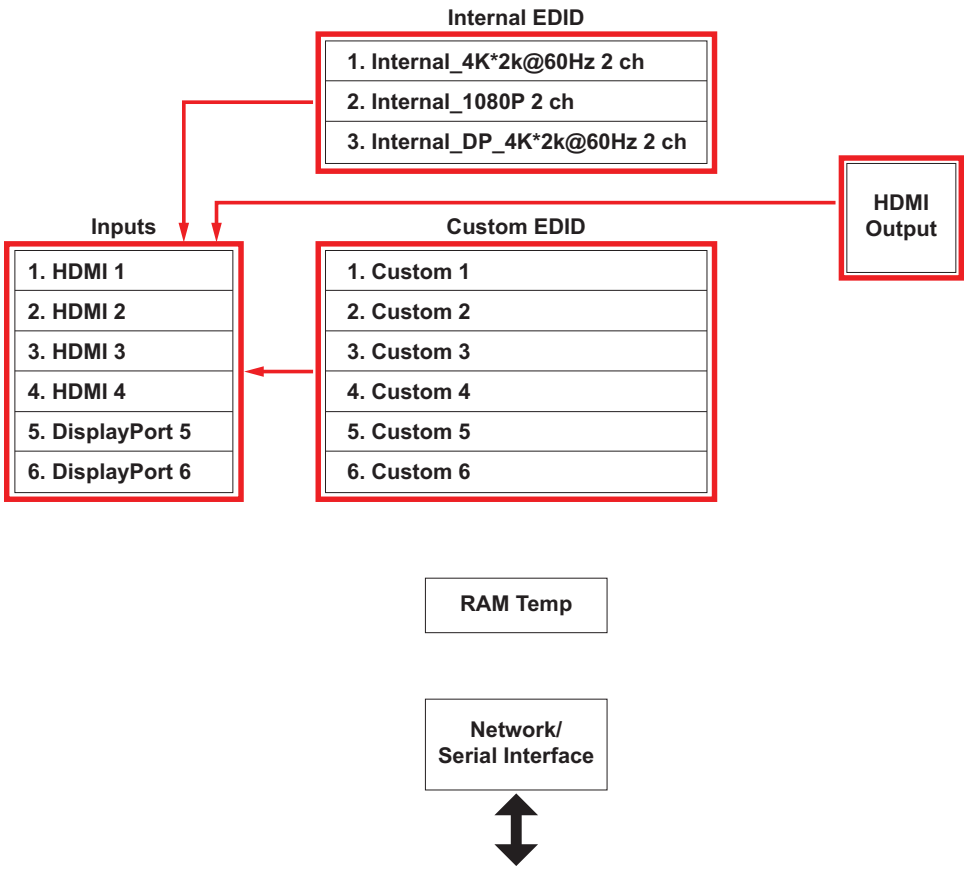


Figure 3-12 Copying EDID

2. Click **Save**.

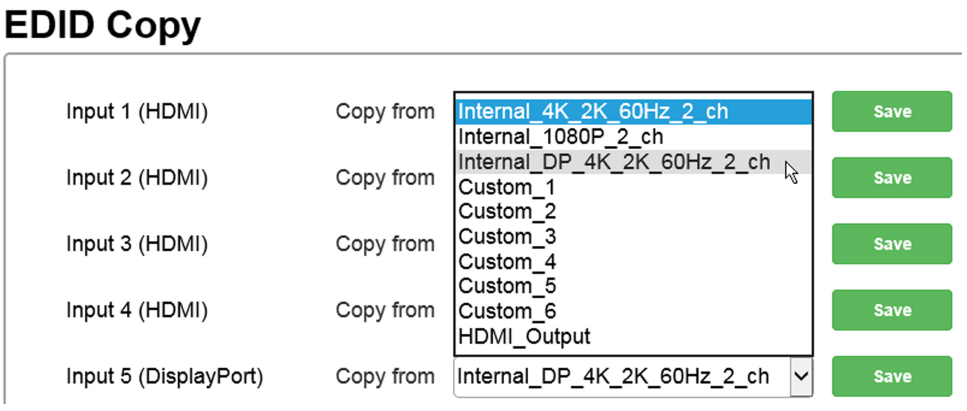


Figure 3-13 EDID Copy

3.10.2 EDID Upload

The QuadView UHDx accepts external EDID in binary data (`*.bin`) format. To upload EDID to a Custom EDID register:

1. Click **Choose** to select an EDID file to upload.

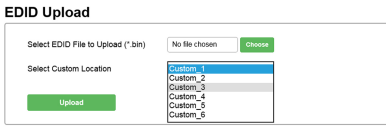
   A **File Upload** window appears.

2. Navigate to the location of the binary EDID file on your computer, and then select that file.

3. Click **Open**.

4. Use the **Select Custom Location** pull-down menu to choose a destination for the uploaded EDID.

5. Click **Upload**.



To copy the uploaded EDID to an input, follow the procedure in **"EDID Copy" on page 32**.

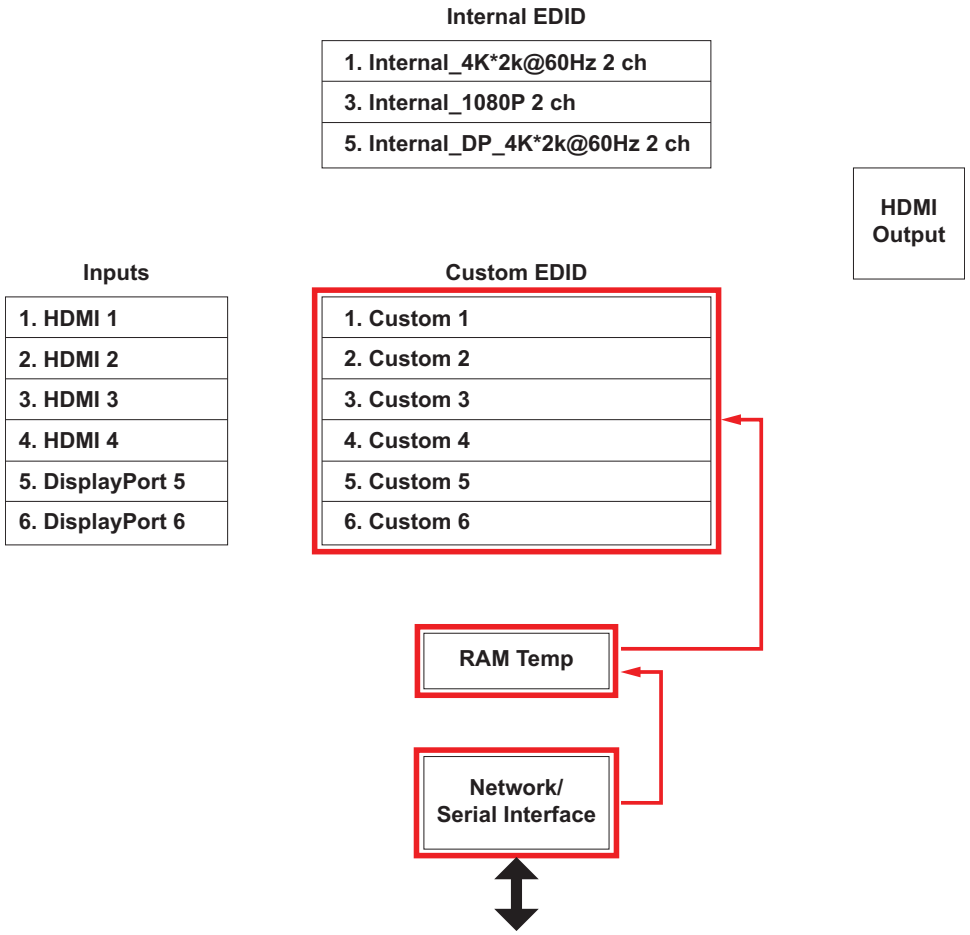


Figure 3-14 EDID Upload

3.10.3 EDID Download

You can download EDID from the HDMI Output, an input, or a Custom EDID register in binary data (`*.bin`) format, and view or manipulate it using a third-party EDID editor such as **Entech Monitor Asset Manager**.

Important Using a manually-modified EDID with an incompatible display can damage the display. Only advanced users should attempt to manually modify EDID.

To download EDID:

1. Either left- or right-click an **Output**, **Input**, or **Custom** button to choose the EDID to download the downloaded EDID.

   If you right-clicked, then select either **Save Link As...** or **Save Target As...**, depending on your Web browser.

2. Navigate to the location where you want to save the downloaded file.

3. Use your browser's **Save** function to save the file to your computer.

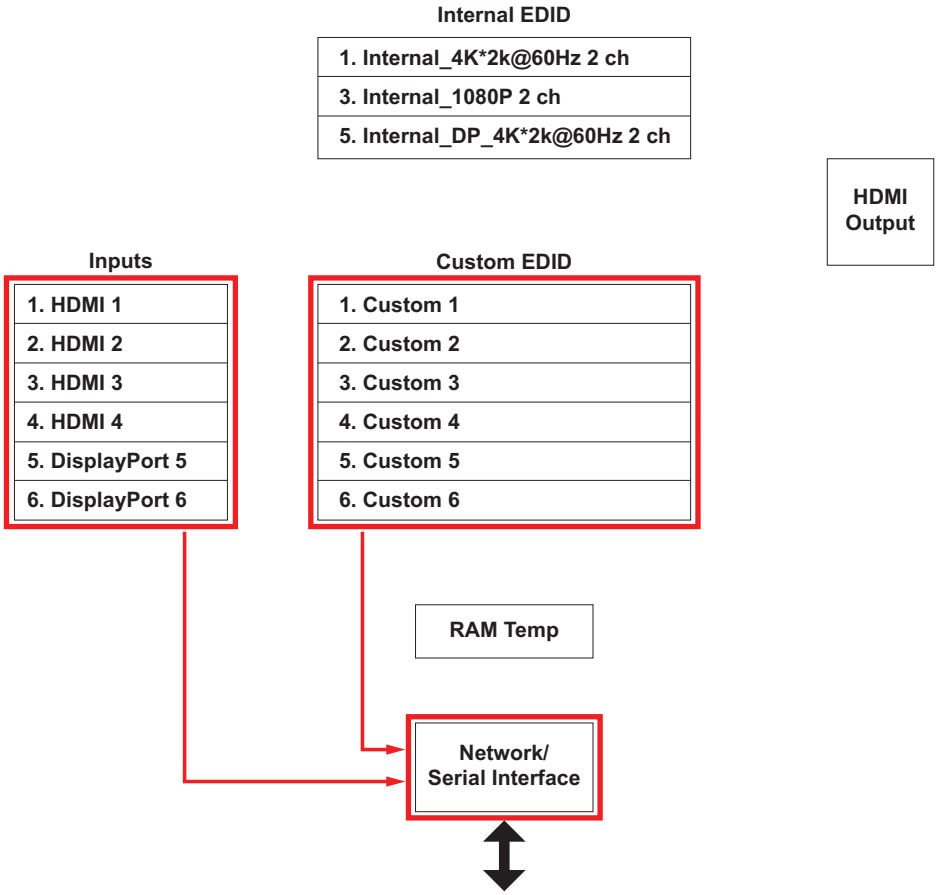


Figure 3-15 EDID Download

3.11 The Network Tab

The **Network** tab of the QuadView UHDx Web Controller allows you to configure the QuadView UHDx network and socket settings. See **Figure 3-16**.

- **Network:** See **"Network Settings" on page 36**.
- **Socket:** See **"Socket Settings" on page 37**.

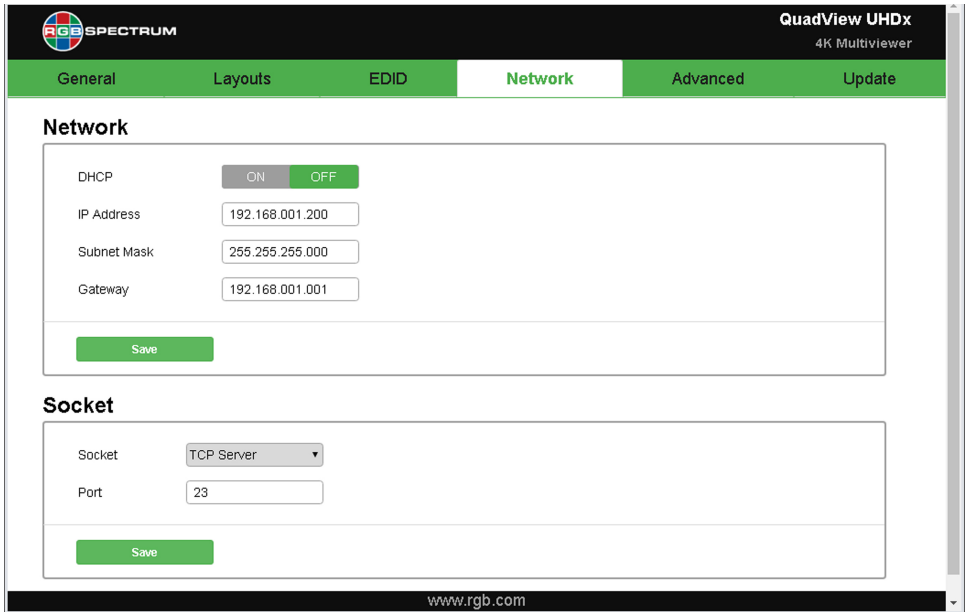


Figure 3-16 Network Tab

3.11.1 Network Settings

Configure the QuadView UHDx network settings as follows:

DHCP

To configure the QuadView UHDx to automatically obtain its network settings from a DHCP server:

1. Confirm that a DHCP server is available on the network.
2. Slide the **DHCP** switch to the **ON** position.
3. Click **Save**.

STATIC

To manually configure the QuadView UHDx network interface:

1. Slide the **DHCP** switch to the **OFF** position, if it isn't already.
2. Click **Save**.
3. Click **Network** to return to the **Network** tab.
4. Enter the following values in the appropriate fields:
   - **IP Address:** IP address of the QuadView UHDx unit.
   - **Subnet Mask:** Divides the **IP Address** into network and host addresses.
   - **Gateway:** This is generally the IP address of the router to which the QuadView UHD xis connected.

Notes

- Consult your network administrator for assistance with network settings, if needed.
- You must include leading zeros when entering values less than 100. For example, enter 192.168.1.200 as `192.168.001.200`.

5. Click **Save** again.

You will need to enter the new IP address into your browser address bar in order to continue using the QuadView UHDx Web Controller after changing the DHCP or static network settings.

3.11.2 Socket Settings

Most QuadView UHDx applications do not require you to change the default **Socket** and **Port** settings (**TCP Server** and `23`, respectively).

3.12 The Advanced Tab

The **Advanced** tab of the QuadView UHDx Web Controller allows you to manage the following additional settings:

- **Power:** See "Power Settings" on page 38.
- **KM Mouse Speed:** See "KM Mouse Speed Settings" on page 38.
- **Multi-Head Switching Mode:** See "Multi-Head Switching Mode" on page 39.
- **Auto Layout:** See "Auto Layout" on page 40.
- **Audio:** See "Audio Settings" on page 41.
- **OSD Control:** See "OSD Control Settings" on page 41.
- **Border Configuration:** See "Border Configuration (QuadView UHDx KVM Only)" on page 42.

- **Input Label:** See **"Input Label Settings" on page 43**.
- **Serial Port:** See **"Authentication Settings" on page 44**.
- **Authentication:** See **"Authentication Settings" on page 44**.
- **Other:** See **"Other Settings" on page 45**.

3.12.1 Power Settings

The **Power Switch** control places the QuadView UHDx into either Normal or Standby mode.

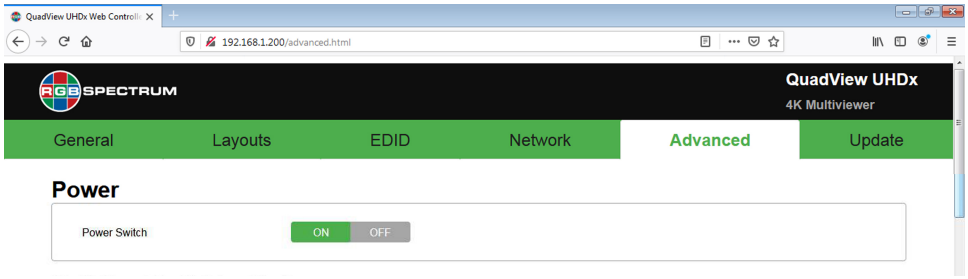


Figure 3-17 Advanced Tab (Power)

This switch has the following settings:

- **Normal:** Slide the **Power Switch** to the **ON** position.
- **Standby:** Slide the **Power Switch** to the **OFF** position.

3.12.2 KM Mouse Speed Settings

The **KM Mouse Speed** settings independently control the click and double-click speeds for each of up to six (6) mouse inputs (buttons, wheels, etc.).

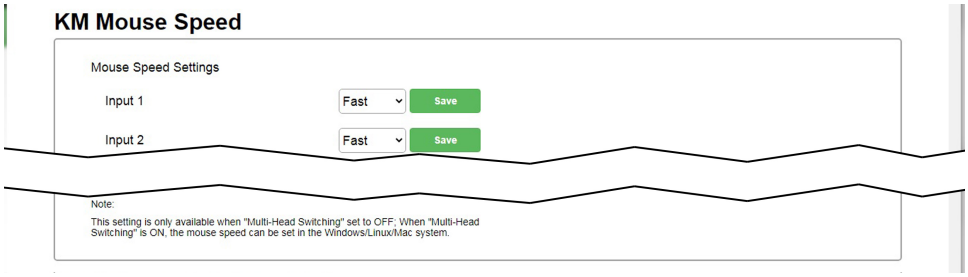


Figure 3-18 Advanced Tab (KM Mouse Speed)

To configure a mouse input speed:

1. Use the pull-down menu for the desired input to select your desired speed (**Slow**, **Middle**, or **Fast**).
2. Click the **Save** button for that input.

3.12.3 Multi-Head Switching Mode

You can control a remote PC with up to four (4) heads (output ports) using a single QuadView UHDx KVM unit that is connected as described in **"Multi-Head Sources" on page 15**. You can also control multiple PCs using *KlickSimple* navigation, as described in **"Supported KlickSimple Use Cases" on page 47**.

Figure 3-19 Advanced Tab (Multi-Head Switching Mode)

The **Multi-Head Switching** control then enables or disables this function:

- **Enable:** Slide the **Multi-Head Switching** switch to the **ON** position.
- **Disabled:** Slide the **Multi-Head Switching** switch to the **OFF** position.

When this mode is enabled, each display on the PC being controlled will appear as a window on the display that is connected to the QuadView UHDx KVM unit. You may control up to two (2) remote PCs with up to four (4) heads per PC, as described in **"Supported KlickSimple Use Cases" on page 47**. You also have the additional control options described in **"Supported KlickSimple Use Cases" on page 47**.

Enabling this method also expands the **Hotkey Settings** section of the screen, which allows you to configure four hot key combinations that will allow you to switch control to Windows 1 through 4 by pressing the configured key combination for that window. See **Figure 3-20**.

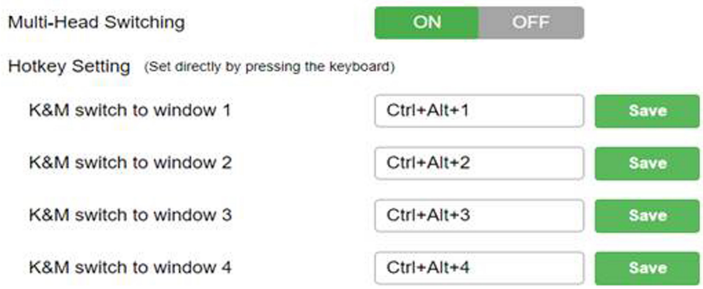


Figure 3-20 Hot Key Configuration

To configure a hot key combination:

1. Click the field that corresponds to the window for which you are configuring the hot keys.
2. Simultaneously press the two or three keys that you want to configure as the hot key for that window. See below for allowed combinations.
3. Click the **Save** button for the hot key combination you just configured.

When configuring hot keys, you may use a combination of either two or three keys, as follows:

- **Two-key combinations:** The available two-key sequences are either [CTRL], [SHIFT], or [ALT] plus either a number ([0] through [9]) or letter ([A] to [Z]).
- **Three-key combinations:** The available three-key sequences are either [CTRL]+[SHIFT], [CRTL]+[ALT], or [SHIFT]+[ALT] plus either a number ([0] through [9]) or letter ([A] to [Z]).

3.12.4 Auto Layout

Sliding the **Auto Layout Control** switch to the **ON** position causes the QuadView UHDx to automatically select the appropriate display layout corresponding to the number of connected HDMI input sources and display up to four (4) windows using the preset Layouts 1-4. See **"Screen Layouts" on page 18**.

Figure 3-21 Advanced Tab (Auto Layout)

The QuadView UHDx selects automatic layouts as follows:

- Windows appear and disappear on the display in the order the input sources are connected to or removed from the QuadView UHDx.
- Connecting an input source adds that source to a new window.
- Window addition occurs sequentially as sources are added and removed. The most-recently added source gets routed to last applicable display window.

Example

Assume a quad-window layout with Sources 1-4 routed to Windows 1-4, respectively. If you remove Source 1, then the QuadView UHDx will display three (3) windows, where:

- Window 1 is now Source 2.
- Window 2 is now Source 3.
- Window 3 is now Source 4.

In this example, reattaching Source 1 switches back to a quad-window layout with Source 1 now appearing in Window 4. This progression continues as you add and detach sources.

- The QuadView UHDx Web Controller updates source-to-window routing information as sources are added and removed.
- You may load a preset or custom layout at any time, which will override the Auto Layout feature. Adding or removing a source reverts the display to the appropriate automatic layout until you disable the Auto Layout feature.

To disable this feature, slide the **Auto Layout Control** switch to the **OFF** position.

3.12.5 Audio Settings

The **Audio Settings** section of the **Advanced** tab allows you to mute/unmute audio and specify a delay settings.

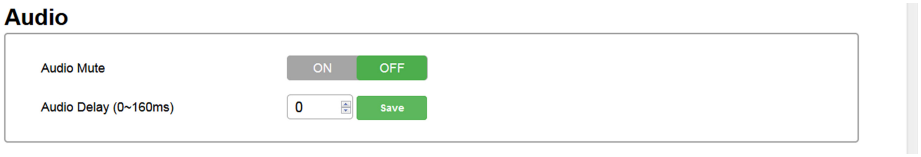


Figure 3-22 Advanced Tab (Audio)

The available audio settings are:

- **Audio Mute:** Mutes or un-mutes the audio.
  - **Mute:** Slide the **Audio Mute** switch to the **ON** position.
  - **Un-mute:** Slide the **Audio Mute** switch to the **OFF** position.

  Click **Save** to save your selection.

- **Audio Delay:** The **Audio Delay** control allows you to correct audio/video synchronization issues that can occur with some types of source material. Enter the desired delay in milliseconds from `0` to `160` milliseconds (ms), and then click **Save**.

3.12.6 OSD Control Settings

The **OSD Control** section of the **Advanced** tab allows you to enable and disable various on-screen displays and control the transparency of those displays.

Figure 3-23 Advanced Tab (OSD Control)

VIDEO OSD

The **Video OSD** control enables or disable the on-screen display of video input and network settings messages:

- **Enabled:** Slide the **Video OSD** switch to the **ON** position.
- **Disabled:** Slide the **Video OSD** switch to the **OFF** position.

If you disable Video OSD messages and the QuadView UHDx IP address changes as a result of DHCP being enabled, then use the ASCII command `ATM 08 NET_IPA R` from a PC or other controller via the RS-232 interface to retrieve the current IP address. See **“COMMAND LINE CONTROL” on page 51**.

AUDIO OSD

The **Audio OSD** control enables or disable the on-screen display of audio status messages (volume, mute on, mute off):

- **Enabled:** Slide the **Audio OSD** switch to the **ON** position.
- **Disabled:** Slide the **Audio OSD** switch to the **OFF** position.

NETWORK OSD

The **Network OSD** control enables or disable the on-screen display of network status messages (connected, IP address, etc.):

- **Enabled:** Slide the **Network OSD** switch to the **ON** position.
- **Disabled:** Slide the **Network OSD** switch to the **OFF** position.

OSD TRANSPARENCY

You can adjust the OSD message transparency to allow input source images to show through:

1. Enter a value from `0` (opaque) to `5` (highest level of transparency) in the **OSD Transparency** field.
2. Click **Save**.

3.12.7 Border Configuration (*QuadView* UHDx KVM Only)

You can turn on or off a colored border that appears around the active and inactive controllable source windows by sliding the **Border Switch** to the **ON** or **OFF** position, as appropriate. You can then specify the border colors as follows:

- **Active Mouse:** Click the **Active Mouse** icon, and then check the **Red**, **Green**, or **Blue** radio button, as desired. The active window(s) will appear inside a border of the selected color.
- **Inactive Mouse:** Click the **Inactive Mouse** icon, and then check the **Red**, **Green**, or **Blue** radio button, as desired. The active window(s) will appear inside a border of the selected color.

Click **Save** when you have finished making changes.

3.12.8 Input Label Settings

The Input Label section of the Advanced tab is where you specify the input label font and background colors.

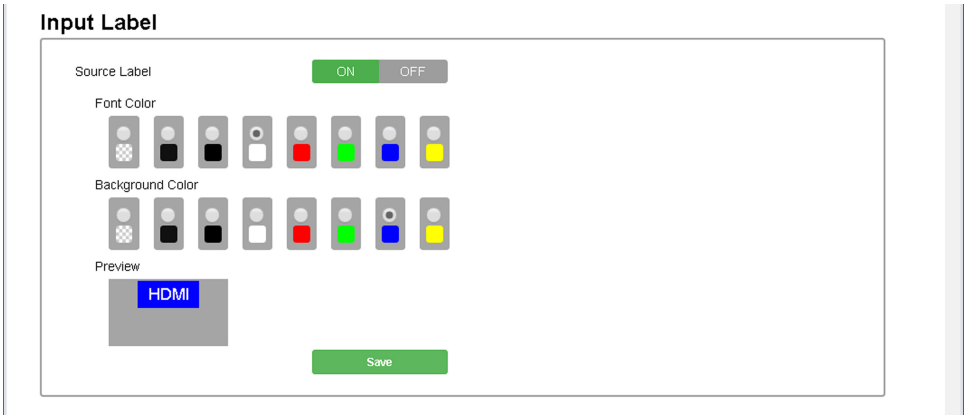


Figure 3-24 Advanced Tab (Input Label)

To display the name of each window on the screen:

1. Slide the **Source Label** switch to the **ON** position.
2. Select a **Font Color** by clicking the appropriate radio button. Alternatively, you may choose **Transparent** (the leftmost radio button) to display transparent text that allows input source images to show through.
3. Select a **Background Color** by clicking the appropriate radio button. Alternatively, you may choose **Transparent** (the leftmost radio button) to disable the background.

   As you make selections, the **Preview** area shows you how the labels will appear on the display output.
4. Click **Save** when you have finished making changes.

Note	Color settings apply to all input labels.

3.12.9 Serial Port Settings

The serial port settings specified in this section must match those of the device connected to the RS-232 port.

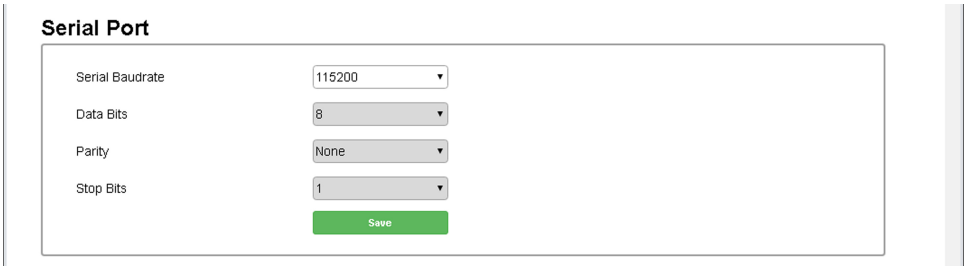


Figure 3-25 Advanced Tab (Serial Port)

The following serial port settings are available:

- **Serial Baudrate:** This pull-down menu sets the data transfer rate of the QuadView UHDx RS-232 port. This is set to `115200` by default.
- **Data Bits:** Number of bits of data to be sent in each character.
- **Parity:** Error detection method. Select **None**, **Odd**, or **Even**, as appropriate.
- **Stop Bits:** Sent to allow detection of the end of a character and facilitate synchronization.

Click **Save** when you have finished making changes.

3.12.10 Authentication Settings

You can require a password to prevent unauthorized persons from accessing the QuadView UHDx Web Controller.

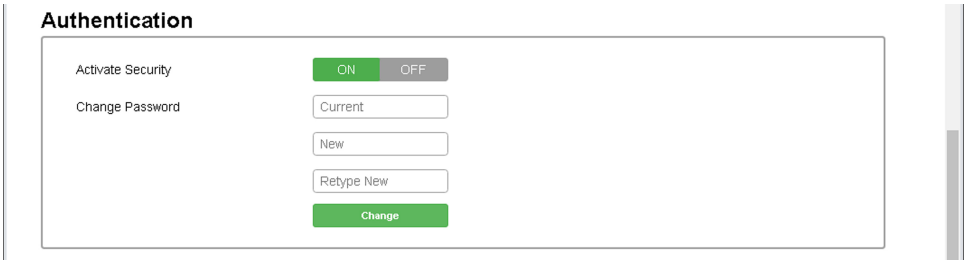


Figure 3-26 Advanced Tab (Authentication)

To do this:

1. Slide the **Activate Security** switch to the to **ON** position.
2. Enter the current password in the **Current** field. Passwords are case-sensitive. The default password is `admin`.

3. Enter the new password in the **New** field.
4. Confirm the new password by entering it again in the **Retype New** field.
5. Click **Change** to save the new password.

To disable the password requirement and allow anyone to access the QuadView UHDx:

1. Slide the **Activate Security** switch to the to **OFF** position.
2. Click **Change**.

3.12.11 Other Settings

The **Other Settings** area of the **Advanced** tab allows you to reset the QuadView UHDx to factory-default settings.

Figure 3-27 Advanced Tab (Other)

Important This command cannot be undone. Use it with caution.

To do this:

1. Click the **Factory** button.
2. Either:
   - Click **OK** to confirm this action and reboot the QuadView UHDx.
   - Click **Cancel** to keep your current system and network settings.

Resetting the QuadView UHDx to factory settings also resets the network settings to their factory defaults. The factory-default network settings are:

- **DHCP:** Disabled.
- **IP Address:** 192.168.001.200.
- **IP Subnet:** 255.255.255.0.
- **IP Default Gateway:** 192.168.001.001.

3.13 Using the KVM Function (QuadView UHDx KVM Only)

If you have a QuadView UHDx KVM (see Figure 1-3) and you have made the connections described in "KVM Connections (QuadView UHDx KVM Only)" on page 14, then you can use the connected keyboard and mouse to control the connected PC(s) and/or laptop(s), as follows:

- If the QuadView UHDx KVM is displaying a single window, then the keyboard and mouse will control the PC or laptop that is supplying the video to that window. See Figure 3-28.

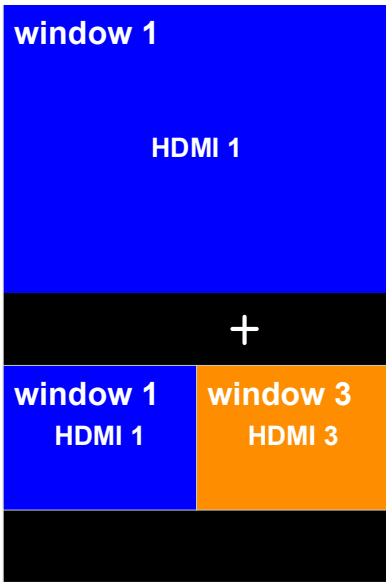


Figure 3-28 **Single Window ►**

- If the QuadView UHDx KVM is displaying multiple windows, then the KVM control will default to the PC or laptop that is supplying video to Window 1. Moving the mouse to a different window will switch the PC or laptop being controlled to the one that is supplying video to that window.
- If there are one or more blank area(s) on the screen, then moving the mouse over one of the blank areas will turn the mouse cursor into a crosshair and no computers will be controlled. See Figure 3-29.

Figure 3-29 **Blank Areas in Multi-Window Layouts ►**

Examples

In the above image:

- Mousing over the Window 1 portion of the display will control the PC or laptop that is supplying video to Window 1.
- Mousing over the Window 3 portion of the display will control the PC or laptop that is supplying video to Window 3.
- Mousing over the blank area changes the mouse cursor to a crosshair, and no computer is being controlled.

- If two or more windows are overlapping (see Figure 3-30), then:

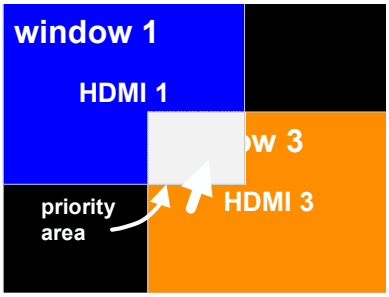


Figure 3-30 **Overlapping Windows ►**

  - The QuadView UHDx KVM will control the computer that corresponds to the window being moused over when not in the priority area where the windows overlap.
  - When the mouse is within the priority area, then the QuadView UHDx KVM will control the computer that is supplying video to the window that is on top. This will depend on the priorities assigned to these windows. See "The Layouts Tab" on page 29.

3.13.1 Supported *KlickSimple* Use Cases

The QuadView UHDx KVM supports the following use cases for controlling remote PCs and/or laptops using *KlickSimple* navigation:

SINGLE-HEAD SOURCES

You may connect up to six (6) single-head sources to a single QuadView UHDx KVM unit. This appears as shown in Figure 3-34, except that you will see up to four (4) windows at a time from up to six (6) switchable single-head sources.

This use case:

- Displays up to four (4) sources.
- Allows you to control the sources using seamless *KlickSimple* mouse navigation on each display, as shown in Figure 3-34. Move your mouse cursor sequentially across the displays to select a new source to control. For example, if you want to switch from controlling the source shown on Display 4 to the one shown on Display 1, then move your mouse cursor to Displays 3, 2, and 1 in that order.

DUAL-HEAD SOURCES

You may connect two dual-head sources to a single QuadView UHDx KVM unit. See Figure 3-31.

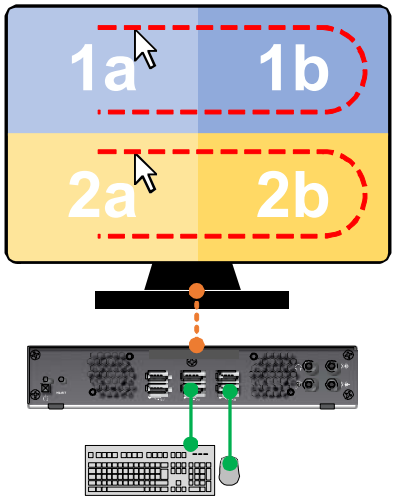


Figure 3-31 Dual-Head Sources

This use case:

- Displays both of the dual-head source inputs for a total of four windows displayed.
- Allows seamless *KlickSimple* mouse navigation with full freedom of movement between the windows within each dual-head source.
- Allows you to switch between dual-head sources using customizable hot key, as described in **"Multi-Head Switching Mode" on page 39**.

DUAL-HEAD SOURCE AND SINGLE-HEAD SOURCES

You may connect a dual-head source and two (2) single-sources to a single QuadView UHDx KVM unit. This appears as shown in **Figure 3-34**, except that you will see all of the windows from the dual-head source. This use case:

- Displays both of the dual-head source inputs, and the two (2) single-head source inputs.
- Allows seamless *KlickSimple* mouse navigation with full freedom of movement on the dual-head source windows.
- Allows you to switch sources using customizable hot key, as described in **"Multi-Head Switching Mode" on page 39**.

QUAD-HEAD SOURCE

You may connect a quad-head source to a single QuadView UHDx KVM unit. See **Figure 3-33**.

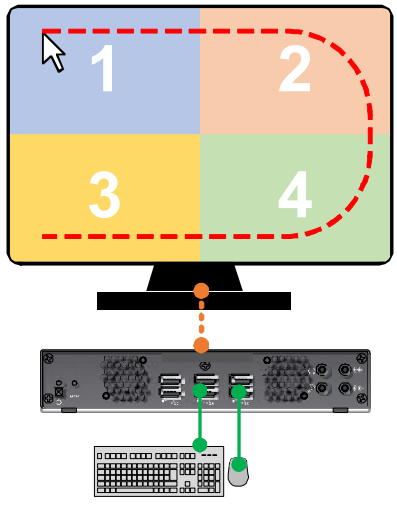


Figure 3-32 Quad-Head Source

This use case:

- Displays all four (4) of the quad-head source inputs.
- Allows seamless *KlickSimple* mouse navigation with full freedom of movement.

QUAD-HEAD SOURCE AND SINGLE-HEAD SOURCES

You may connect a quad-head source and two (2) single-sources to a single QuadView UHDx KVM unit. See **Figure 3-33**.

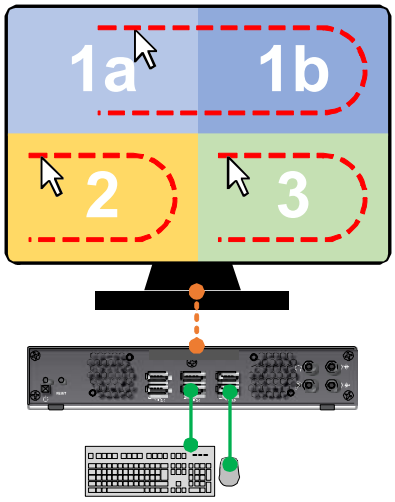


Figure 3-33 Quad- and Single-Head Sources

This use case:

- Displays two (2) of the quad-head source inputs, and the two (2) single-head source inputs.
- Allows seamless *KlickSimple* mouse navigation with full freedom of movement on the two quad-head source windows.
- Allows you to switch sources using customizable hot key, as described in **"Multi-Head Switching Mode" on page 39**.

DUAL-DISPLAY CONFIGURATION

You may use dual QuadView UHDx KVM receivers interconnected via USB to control up to twelve single-head sources. See Figure 3-34.

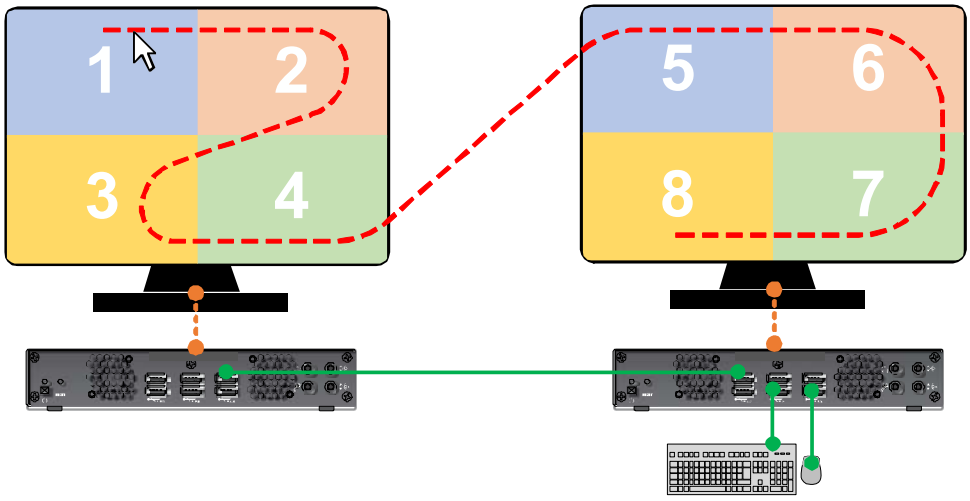


Figure 3-34 Dual QuadView with Single-Head Sources

This use case:

- Displays up to four (4) sources on each of two (2) displays for a total of eight (8) displayed sources.
- Allows you to control up to seven (7) sources using seamless *KlickSimple* mouse navigation on each display, as shown here. Move your mouse cursor sequentially across the displays to select a new source to control. For example, if you want to switch from controlling the source shown on Display 6 to the one shown on Display 3, then move your mouse cursor to Displays 5, 4, and 3 in that order.

CHAPTER 4 COMMAND LINE CONTROL

This chapter describes all the features and functions available via the simple text-based QuadView UHDx command-line interface protocol, which accepts requests from control devices and provides responses to those devices. Control messages can be sent via Telnet or serial link between the QuadView UHDx and an automation/control system or a PC running terminal emulation software.

Note RGB Spectrum recommends using Tera Term for Telnet or serial control of the QuadView UHDx from a PC.

4.1 Connecting to the QuadView UHDx via Telnet/IP

To initiate a Telnet session with the QuadView UHDx via Telnet using Tera Term:

1. Verify that both the QuadView UHDx and automated control system or PC are connected to the same network. See Figure 2-2.
2. Launch Tera Term.
3. Select **Telnet**, and then enter the IP address of the QuadView UHDx.

   If you do not know the QuadView UHDx IP address, refer to "Video Input Status and Network Settings" on page 21 for instructions on how to obtain this information.
4. Select the **Telnet Service**.
5. Enter `23` for the **TCP port#**.
6. Click **OK**.
7. Select **Terminal > Setup**, and then set the **New-line** parameters as follows:
   - **Receive:** LF.
   - **Transmit:** CF + LF.

8. Click **OK**.

9. Test the connection by typing `ATM 08 CSW_VER R`.

Important Commands are case-sensitive. Alphabetic characters must be in UPPERCASE.

10. Press [ENTER].

If the connection is working, the QuadView UHDx responds with `08 CSW_VER R` followed by the firmware version and build date. The terminal window is now ready for command control.

4.2 Connecting to the QuadView UHDx via Serial Link

To initiate a session with the QuadView UHDx via TCP/IP using a serial link:

1. Connect the QuadView UHDx and automated control system or PC via a serial (RS-232) link. See Figure 2-3.
2. Launch Tera Term.
3. Select **Serial**.
4. Select the appropriate COM **Port**.
5. Click **OK**.
6. Select **Setup > Serial Port...**.
7. Set the serial port parameters as follows:
   - **Port:** Select the port you specified in Step 3.
   - **Baud Rate:** 9600.
   - **Data:** 8 bit.
   - **Parity:** none.
   - **Stop:** 1 bit.
   - **Flow Control:** none.
   - **Transmit Delay:** 0 msec/char and 0 msec/line.
8. Click **OK**.
9. Follow Steps 6 through 10 of "Connecting to the QuadView UHDx via Telnet/IP" on page 51.

You may change the QuadView UHDx baud rate using either:

- The **Serial Baudrate** control on the **Advanced** tab of the QuadView UHDx Web Controller. See **"The Advanced Tab" on page 37**.
- One of the Set Baud Rate commands listed in **Table 4-5**.

4.3 Command Syntax and Lists

The serial command syntax is as follows:

- **Case:** Commands are case-sensitive. Alphabetic characters must be in UPPERCASE.
- **Spaces:** You can use spaces to separate the components of a command for improved readability. (This option is used in the following command lists.) The QuadView UHDx command parser ignores spaces; for example, `ATM 0A VDO_IPT W 3 2` and `ATM0AVDO_IPTW32` are both valid command strings.
- **Command header:** `ATM`
- **Length:** The total length of the command and parameters, not including the header or spaces, given in hexadecimal (`08 ... 25`).
- **Command:** `XXX_XXX`
- **Read/Write:** `R/W`
- **Parameter data:** The length and meaning of the parameter data (if required) is dependent on the command.

Note You need not send a carriage return or press [ENTER] following the command when using a serial connection.

4.3.1 General Commands

Table 4-1describes the general QuadView UHDx general commands. These commands provide the same controls as those found on the **General** tab of the QuadView UHDx Web Controller interface. See **"The General Tab" on page 24**.

Table 4-1 General Commands

Function	Command	Feedback	Description

Report Input Name	`ATM 09 IPT_NAM R [1…6]`	`~INPUT[1...6]: [input_name]`	Reports the name of Input [1...6].
			Example:
			Input 1 name = CAMERA
			`ATM 09 IPT_NAM R 1`
			`~INPUT1: CAMERA`

Table 4-1 General Commands (Continued)

Function	Command	Feedback	Description

Set Input Name	`ATM [0A...15] IPT_NAM W [1…6] [input_name]`	`~[0A...15] IPT_NAM W [1…6] [input_name]`	Sets the name of Input [1...6].
			The name can be up to 12 characters long and can include letters, numbers, spaces, and some special characters.
			The length of the input name affects the length of the command, which you must specify (in hex) following the ATM header. For example, a one-character name results in a command length of 0A; a 12-character name results in a command length of 15.
			Examples:
			Input 3 name = pc
			`ATM 0B IPT_NAM W 3 pc`
			Input 1 name = CAMERA
			`ATM 0F IPT_NAM W 1 CAMERA`
			Input 2 name = ZioDecoder01
			`ATM 15 IPT_NAM W 2 ZioDecoder01`

Report Window/Input Pairs	`ATM 08 VDO_IPT R`	`~VDO_IPT A1 [1...6] B1 [1...6] A2 [1...6] B2 [1...6]`	Reports inputs assigned to each window.
			Example:
			Window 1 (A1) -> Input 5
			Window 2 (B1) -> Input 6
			Window 3 (A2) -> Input 3
			Window 4 (B2) -> Input 4
			`ATM 08 VDO_IPT R`
			`08 VDO_IPT R`
			`~VDO_IPT A1 5 B1 6 A2 3 B2 4`

Source-to-Window Routing	`ATM 0A VDO_IPT W [1…4] [1…6]`	`~0A VDO_IPT W [1…4] [1…6]`	Routes Input [1…6] to Window [1…4]. **Example:** To route Input 2 to Window 3, use the command: `ATM 0A VDO_IPT W 3 2`
Report Aspect Ratio	`ATM 08 WIN_RAT R`	`~WIN_RAT A1 [1...4] B1 [1...4] A2 [1...4] B2 [1...4]`	Reports aspect ratio for Windows A1 (1), B1 (2), A2 (3), and B2 (4), as follows: 1: Normal 2: FULL 3: 16:9 4: 4:3

Table 4-1 General Commands (Continued)

Function	Command	Feedback	Description
Set Aspect Ratio	`ATM 0A WIN_RAT W [1…4] [1…4]`	`~0A WIN_RAT W [1…4] [1…4]`	Sets Window [1…4] aspect ratio to Normal (1), Full (2), 16:9 (3), or 4:3 (4). **Example:** To set the Window 3 aspect ratio to Normal (original), use the command: `ATM 0A WIN_RAT W 3 1`

Report Output Timing	`ATM 08 OPT_TIM R`	`~OPT_TIM [01...20]`	Reports currently-selected output timing (resolution).
			Example: 3840 × 2160 @30 Hz
			`ATM 08 OPT_TIM R`
			`~OPT_TIM 03`

Set Output Timing	`ATM 0A OPT_TIM W 01`	`~0A OPT_TIM W 01`	Sets the HDMI output resolution to Auto, outputting the resolution based on the EDID information from the display device.
	`ATM 0A OPT_TIM W 02`	`~0A OPT_TIM W 02`	Sets the HDMI output resolution to 3840 × 2160@60Hz (UHD).
	`ATM 0A OPT_TIM W 03`	`~0A OPT_TIM W 03`	Sets the HDMI output resolution to 3840 × 2160@30Hz (UHD).
	`ATM 0A OPT_TIM W 04`	`~0A OPT_TIM W 04`	Sets the HDMI output resolution to 3840 × 2160@24Hz (UHD).
	`ATM 0A OPT_TIM W 05`	`~0A OPT_TIM W 05`	Sets the HDMI output resolution to 1920 × 1200@60Hz (WUXGA).
	`ATM 0A OPT_TIM W 06`	`~0A OPT_TIM W 06`	Sets the HDMI output resolution to 1920 × 1080@60Hz 1080P (Full HD).
	`ATM 0A OPT_TIM W 07`	`~0A OPT_TIM W 07`	Sets the HDMI output resolution to 1920 × 1080@50Hz 1080P (Full HD).
	`ATM 0A OPT_TIM W 08`	`~0A OPT_TIM W 08`	Sets the HDMI output resolution to 1600 × 1200@60Hz (UXGA).
	`ATM 0A OPT_TIM W 09`	`~0A OPT_TIM W 09`	Sets the HDMI output resolution to 1680 × 1050@60Hz (UXGA).
	`ATM 0A OPT_TIM W 10`	`~0A OPT_TIM W 10`	Sets the HDMI output resolution to 1600 × 900@60Hz_RB (UXGA).
	`ATM 0A OPT_TIM W 11`	`~0A OPT_TIM W 11`	Sets the HDMI output resolution to 1400 × 1050@60Hz.
	`ATM 0A OPT_TIM W 12`	`~0A OPT_TIM W 12`	Sets the HDMI output resolution to 1440 × 900@60Hz.
	`ATM 0A OPT_TIM W 13`	`~0A OPT_TIM W 13`	Sets the HDMI output resolution to 1360 × 768@60Hz.

Table 4-1 General Commands (Continued)

Function	Command	Feedback	Description
Set Output Timing (cont.)	`ATM 0A OPT_TIM W 14`	`~0A OPT_TIM W 14`	Sets the HDMI output resolution to 1280 × 1024@60Hz (SXGA).
	`ATM 0A OPT_TIM W 15`	`~0A OPT_TIM W 15`	Sets the HDMI output resolution to 1280 × 720@60Hz (720P).
	`ATM 0A OPT_TIM W 16`	`~0A OPT_TIM W 16`	Sets the HDMI output resolution to 1280 × 800@60Hz_RB.
	`ATM 0A OPT_TIM W 17`	`~0A OPT_TIM W 17`	Sets the HDMI output resolution to 1280 × 768@60Hz.
	`ATM 0A OPT_TIM W 18`	`~0A OPT_TIM W 18`	Sets the HDMI output resolution to 1280 × 720@50Hz.
	`ATM 0A OPT_TIM W 19`	`~0A OPT_TIM W 19`	Sets the HDMI output resolution to 1024 × 768@60Hz (XGA).
	`ATM 0A OPT_TIM W 20`	`~0A OPT_TIM W 20`	Sets the HDMI output resolution to 800 × 600@60Hz.

Input Cropping	`ATM 0A CRO_PIN R C [1...6]`	`~CRO_PIN R C [0 | 1]`	Reports if cropping Input [1...6] is enabled (1) or disabled (0).
			Example: Crop Input 3 disabled
			`ATM 0A CRO_PIN R C 3`
			`~CRO_PIN R C 0`

	`ATM 0B CRO_PIN W C [1...6] [0 | 1]`	`~0B CRO_PIN W C [1...6] [0 | 1]`	Enables (1) or disables (0) cropping on Input [1...6].

	`ATM 0A CRO_PIN R X [1...6]`	`~CRO_PIN R Xxxxx,Yyyyy,Wwwww, Hhhhh`	Reports position (X/Y) and size (W/H) of visible region of Input [1...6] source.
			Example: Input 4 cropped to 800 × 600 with origin at 100, 100
			`ATM 0A CRO_PIN R X 4`
			`~CRO_PIN R X0100,Y0100,W0800, H0600`

	`ATM 20 CRO_PIN W [1...6] Xxxxx,Yyyyy,Wwwww, Hhhhh`	`~20 CRO_PIN W [1...6] Xxxxx,Yyyyy,Wwwww, Hhhhh`	Sets crop area (source rectangle) for Input [1...6] to wwww × hhhh, with origin at xxxx, yyyy.
			Example: Crop Input 4 to 800 × 600 with origin at 100, 100
			`ATM 20 CRO_PIN W 4 X0100,Y0100,W0800, H0600`
			`~20 CRO_PIN W 4 X0100,Y0100,W0800, H0600`

Table 4-1 General Commands (Continued)

Function	Command	Feedback	Description

Input Cropping (continued)	`ATM 0A CRO_PIN R E [1...6]`	`~CRO_PIN R E[0 | 1],S[1...6],Xxxxx,Yyyyy,Wwwww,Hhhhh`	Reports enabled/disabled status, position (X/Y) and size (W/H) of visible region for Input [1...6].
			Example: Cropping enabled on Input 4; source rectangle is 800 × 600 with origin at 100, 100
			`ATM 0A CRO_PIN R E 4`
			`~CRO_PIN R E1,S4,X0100,Y0100, W0800,H0600`

	`ATM 25 CRO_PIN W E[0 | 1],S[1...6],Xxxxx, Yyyyy,Wwwww,Hhhhh`	`~25 CRO_PIN W [1...6] Xxxxx,Yyyyy,Wwwww, Hhhhh`	Sets enabled/disabled status, position (X/Y) and size (W/H) of visible region for Input [1...6].
			Example: Enable cropping on Input 4; set source rectangle to 800 × 600 with origin at 100, 100
			`ATM 25 CRO_PIN W E1,S4,X0100,Y0100, W0800,H0600`
			`~25 CRO_PIN W 4 X0100,Y0100, W0800,H0600`

Report Current Audio Input	`ATM 08 ADO_IPT R`	`~ADO_IPT [1...6]`	Reports currently-selected audio input.
			Example: Input 6
			`ATM 08 ADO_IPT R`
			`~ADO_IPT 06`

Select Audio Input	`ATM 09 ADO_IPT W [1…6]`	`~09 ADO_IPT W [1…6]`	Routes Audio Input [1…6] to audio outputs. **Example:** To route audio Input 4 to the audio outputs, use the command: **ATM 09 ADO_IPT W 4**

Report Audio Volume Setting	`ATM 08 VOL_CRL R`	`~VOL_CRL [0...10]`	Reports current volume setting.
			Example: Volume = 10
			`ATM 08 VOL_CRL R`
			`~VOL_CRL 10`

Set Audio Volume	`ATM 09 VOL_CRL W 0`	`~09 VOL_CRL W 0`	Mutes audio output.
	`ATM 09 VOL_CRL W [1…9]`	`~09 VOL_CRL W [1…9]`	Sets program audio output volume to [1…9].
	`ATM 09 VOL_CRL W A`	`~09 VOL_CRL W A`	Sets program audio output volume to 10.
	`ATM 09 VOL_CRL W E`	`~09 VOL_CRL W E`	Increases program audio output by one increment.

Table 4-1 General Commands (Continued)

Function	Command	Feedback	Description
Set Audio Volume (continued)	`ATM 09 VOL_CRL W F`	`~09 VOL_CRL W F`	Decreases program audio output by one increment.
Report Audio Input Configuration State	`ATM 09 AUD_MOD R [1…6]`	`Port[1…6] Audio: [0(Auto) | 1(External)]`	Reports audio input configuration state for Input [1…6]. **Example:** To see the audio input configuration state of Input 4, use the command: `ATM 09 AUD_MOD R 4`
Audio Input Configuration	`ATM 0A AUD_MOD W [1…6] [0 | 1 | 2]`	`~0A AUD_MOD W [1…6] [0 | 1] | 2`	Sets audio input [1…6] to either: ◆ **Auto:** 0 (embedded in HDMI/DP signal) ◆ **External:** 1 ◆ **Internal:** 2 **Example:** To select external audio on Input 3, use the command: `ATM 0A AUD_MOD W 3 1`
Enable OSD	`ATM 09 NWC_CFG W 1`	`~09 NWC_CFG W 1`	Enables the OSD. See **"On-Screen Display (OSD) Messages" on page 21**.
Disable OSD	`ATM 09 NWC_CFG W 1`	`~09 NWC_CFG W 1`	Disables the OSD. See **"On-Screen Display (OSD) Messages" on page 21**.

4.3.2 Layout Commands

Table 4-2 describes the QuadView UHDx layout commands. These commands provide the same controls as those found in the **Layout Recall** area of the QuadView UHDx Web Controller **Layouts** tab. See **"Layout Recall" on page 31**.

Table 4-2 Layout Commands

Function	Command	Feedback	Description

Report Current Layout	`ATM 08 SCR_LYT R`	`~SCR_LYT [01...32]`	Reports currently-selected layout.
			Example: Layout 2
			`ATM 08 SCR_LYT R`
			`~SCR_LYT 02`

Table 4-2 Layout Commands (Continued)

Function	Command	Feedback	Description
Recall Layout	`ATM 0A SCR_LYT W [01…16]`	`~0A SCR_LYT W [01…16]`	Recalls Layout [1…16].
	`ATM 0A SCR_LYT W [17…32]`	`~0A SCR_LYT W [17…32]`	Recalls Layout [Custom 1 (17)…Custom 16 (32)]. **Note:** Use the QuadView UHDx Web Controller **Layouts** tab to create and save custom layouts. See **"The Layouts Tab" on page 29**.
	Example: To recall Custom Layout 12, use the command: `ATM 0A SCR_LYT W 28`		
Enable Auto Layout	`ATM 09 CLB_DAL W 1`	`~09 CBL_DAL W 1`	This feature is disabled by default.
Disable Auto Layout	`ATM 09 CLB_DAL W 0`	`~09 CBL_DAL W 0`	

Map Display Layout to Front Panel Button	`ATM 0B LYT_MAP W [1...6] [1...32]`	`~0B LYT_MAP W [1...6] [1...32]`	Maps Layout [1...32] to front panel **INPUT/LAYOUT** button [...6].
			Example: To map Layout 23 to Front Panel Button 4:
			`ATM 0B LYT_MAP W 4 23`
			`~0B LYT_MAP W 4 23`

4.3.3 EDID Commands

Table 4-3 describes the QuadView UHDx EDID commands. These commands provide the same controls as those found on the **EDID Management** tab of the QuadView UHDx Web Controller. See "The EDID Management Tab" on page 32.

Table 4-3 EDID Commands

Function	Command	Feedback	Description
Copy EDID to Input	ATM 0B EDI_CPY W 01 [1…6]	~0B EDI_CPY W 01 [1…6]	Copies Internal_4K_2K_60Hz_2_ch EDID to Input [1…6].
	ATM 0B EDI_CPY W 02 [1…6]	~0B EDI_CPY W 02 [1…6]	Copies Internal_1080p_2_ch EDID to Input [1…6].
	ATM 0B EDI_CPY W 03 [1…6]	~0B EDI_CPY W 03 [1…6]	Copies Internal_DP_4K_2K_60Hz_2_ch EDID to Input [1…6].
	ATM 0B EDI_CPY W 04 [1…6]	~0B EDI_CPY W 04 [1…6]	Copies Custom_1 EDID to Input [1…6].
	ATM 0B EDI_CPY W 05 [1…6]	~0B EDI_CPY W 05 [1…6]	Copies Custom_2 EDID to Input [1…6].
	ATM 0B EDI_CPY W 06 [1…6]	~0B EDI_CPY W 06 [1…6]	Copies Custom_3 EDID to Input [1…6].
	ATM 0B EDI_CPY W 07 [1…6]	~0B EDI_CPY W 07 [1…6]	Copies Custom_4 EDID to Input [1…6].
	ATM 0B EDI_CPY W 08 [1…6]	~0B EDI_CPY W 08 [1…6]	Copies Custom_5 EDID to Input [1…6].
	ATM 0B EDI_CPY W 09 [1…6]	~0B EDI_CPY W 09 [1…6]	Copies Custom_6 EDID to Input [1…6].
	ATM 0B EDI_CPY W 10 [1…6]	~0B EDI_CPY W 10 [1…6]	Copies EDID from HDMI Output to Input [1…6].

4.3.4 Network Commands

Table 4-4 describes the QuadView UHDx network configuration commands. These commands provide most of the controls found on the **Network** tab of the QuadView UHDx Web Controller. See "The Network Tab" on page 36.

Table 4-4 Network Commands

Function	Command	Feedback	Description
IP Address and TCP Port	`ATM 08 NET_IPA R`	`~NET_IPA xxx.xxx.xxx.xxx`	Reports the QuadView UHDx IP address.

	`ATM 17 NET_IPA W xxx.xxx.xxx.xxx`	`~17 NET_IPA xxx.xxx.xxx.xxx`	Sets the QuadView UHDx IP address.
			Note: You must include leading zeros when entering values less than 100. For example, enter 192.168.1.200 as `192.168.001.200`.
			Example: IP address = 192.168.001.200
			`ATM 17 NET_IPA W 192.168.001.200`
			`~17 NET_IPA 192.168.001.200`

	`ATM 08 TCP_POT R`	`~TCP_POT [1...79 | 81...65535]`	Reports QuadView UHDx TCP port.
	`ATM 09 TCP_POT W [1...9]`	`~09 TCP_POT W [1...9]`	Sets the TCP port to [1...9].
	`ATM 0A TCP_POT W [10...79 | 81...99]`	`~0A TCP_POT W [10...79 | 81...99]`	Sets the TCP port to [10...79 | 81...99].
	`ATM 0B TCP_POT W [100...999]`	`~0B TCP_POT W [100...999]`	Sets the TCP port to [100...999].
	`ATM 0C TCP_POT W [1000...9999]`	`~0C TCP_POT W [1000...9999]`	Sets the TCP port to [1000...9999].
	`ATM 0D TCP_POT W [10000...65535]`	`~0D TCP_POT W [10000...65535]`	Sets the TCP port to [10000...65535].
DHCP	`ATM 08 NET_DHP R`	`~NET_DHP [0 | 1]`	Reports current DHCP status.
	`ATM 09 NET_DHP W [0 | 1]`	`~09 NET_DHP W [0 | 1]`	Enables (1) or disables (0) DHCP.

4.3.5 Advanced Commands

Table 4-5 describes the QuadView UHDx advanced commands. These commands provide the same controls as those found on the **Advanced** tab of the QuadView UHDx Web Controller. See "The Advanced Tab" on page 37.

Table 4-5 Advanced Commands

Function	Command	Feedback	Description
Standby/Normal mode	`ATM 09 POW_CRL W F`	`~09 POW_CRL W F`	Switches from Normal to Standby mode.
	`ATM 09 POW_WUP W 1`	`~09 POW_WUP W 1`	Switches from Standby to Normal mode. **Notes:** ◆ This command works only over a serial connection. ◆ If you send this command when the QuadView UHDx is already in Normal mode, you will receive an `unknown command` message.
Read Mouse Input Speed	`ATM 09 MOS_SPD R [X]`	`~MOS_SPD [X] [Y]`	Reads the speed setting of the specified mouse input, where: `[X]` is the input to read. This is an integer from `1` to `6`. `[Y]` is the input speed setting. This can be: ◆ **1:** Slow ◆ **2:** Middle ◆ **4:** Fast
Set Mouse Input Speed	`ATM 0A MOS_SPD W [X] [Y]`	`~0A MOS_SPD W [X] [Y]`	Sets the specified mouse input to the specified speed. `[X]` is the input to set. This is an integer from `1` to `6`. `[Y]` is the input speed setting. This can be: ◆ **1:** Slow ◆ **2:** Middle ◆ **4:** Fast **Example:** To set Input 3 to Middle speed: `ATM 0A MOS_SPD W 3 2`
Audio Mute	`ATM 08 AUD_MUT R`	`~AUD_MUT [0 | F]`	Reports current audio mute setting.
	`ATM 09 AUD_MUT W 0`	`~09 AUD_MUT W 0`	Mutes the audio output.
	`ATM 09 AUD_MUT W F`	`~09 AUD_MUT W F`	Un-mutes the audio output.

Table 4-5 Advanced Commands (Continued)

Function	Command	Feedback	Description

Report Audio Delay Setting	`ATM 08 AUD_DLY R`	`~AUD_DLY [0...160]`	Reports current audio delay setting.
			Example: Audio Delay = 120 ms
			`ATM 08 AUD_DLY R`
			`~AUD_DLY 120`

Set Audio Delay	`ATM 09 AUD_DLY W [0...9]`	`~09 AUD_DLY W [0...9]`	Sets audio delay time to [0...9] ms.
	`ATM 09 AUD_DLY W [10...99]`	`~0A AUD_DLY W [10...99]`	Sets audio delay time to [10...99] ms.
	`ATM 0B AUD_DLY W [100...160]`	`~0B AUD_DLY W [100...160]`	Sets audio delay time to [100...160] ms.
OSD Messages	`ATM 09 AUD_OSD W [0 | 1]`	`~09 AUD_OSD W [0 | 1]`	Enables/disables audio volume and mute OSD indications. ◆ `0`: audio OSD ON ◆ `1`: audio OSD OFF
	`ATM 09 NET_OSD W [0 | 1]`	`~09 NET_OSD W [0 | 1]`	Enables/disables network OSD indications. ◆ `0`: network OSD ON ◆ `1`: network OSD OFF
	`ATM 09 VDO_OSD W [0 | 1]`	`~09 VDO_OSD W [0 | 1]`	Enables/disables video source and IP address OSD indications. ◆ `0`: video OSD ON ◆ `1`: video OSD OFF
	`ATM 08 OSD_TRA R`	`~OSD_TRA [0...5]`	Reports current OSD transparency setting.
	`ATM 09 OSD_TRA W [0...5]`	`~09 OSD_TRA W [0...5]`	Sets OSD transparency to [0...5].
Input Labels	`ATM 08 INP_LAB R`	`~INP_LAB [0 | 1]`	Reports current input label setting.
	`ATM 09 INP_LAB W [0 | 1]`	`~09 INP_LAB W [0 | 1]`	Enables/disables input labels. ◆ `0`: input labels OFF ◆ `1`: input labels ON

Table 4-5 Advanced Commands (Continued)

Function	Command	Feedback	Description
Input Label Font Color	ATM 08 INP_FCC R	~INP_FCC [0...7]	Reports current input label font color.
	ATM 09 INP_FCC W 0	~09 INP_FCC W 0	Sets input label font color to transparent.
	ATM 09 INP_FCC W 1	~09 INP_FCC W 1	Sets input label font color to #101010 (approximately 94 percent black).
	ATM 09 INP_FCC W 2	~09 INP_FCC W 2	Sets input label font color to black.
	ATM 09 INP_FCC W 3	~09 INP_FCC W 3	Sets input label font color to white.
	ATM 09 INP_FCC W 4	~09 INP_FCC W 4	Sets input label font color to red.
	ATM 09 INP_FCC W 5	~09 INP_FCC W 5	Sets input label font color to green.
	ATM 09 INP_FCC W 6	~09 INP_FCC W 6	Sets input label font color to blue.
	ATM 09 INP_FCC W 7	~09 INP_FCC W 7	Sets input label font color to yellow.
Input Label Background Color	ATM 08 INP_BCC R	~INP_BCC [0...7]	Reports current input label background color.
	ATM 09 INP_BCC W 0	~09 INP_BCC W 0	Sets input label background color to transparent.
	ATM 09 INP_BCC W 1	~09 INP_BCC W 1	Sets input label background color to #101010 (approximately 94 percent black).
	ATM 09 INP_BCC W 2	~09 INP_BCC W 2	Sets input label background color to black.
	ATM 09 INP_BCC W 3	~09 INP_BCC W 3	Sets input label background color to white.
	ATM 09 INP_BCC W 4	~09 INP_BCC W 4	Sets input label background color to red.
	ATM 09 INP_BCC W 5	~09 INP_BCC W 5	Sets input label background color to green.
Input Label Background Color (continued)	ATM 09 INP_BCC W 6	~09 INP_BCC W 6	Sets input label background color to blue.
	ATM 09 INP_BCC W 7	~09 INP_BCC W 7	Sets input label background color to yellow.

Table 4-5 Advanced Commands (Continued)

Function	Command	Feedback	Description

Enable Window Border and Set Color	`ATM 0A BOR_CFG W [1...4] [1...3]`	`~0A BOR_CFG W [1...4] [1...3]`	Sets the border for the specified window to the specified color, where:
			◆ W [1...4] is the number of the window you are configuring.
			◆ [1...3] is the color to set with 1=red, 2=green, and 3=blue.
			Example:
			To configure a green border for Windows 3:
			`ATM 0A BOR_CFG W 3 2`
			`~0A BOR_CFG W 3 2`

Disable Window Border	`ATM 0A BOR_CFG W 0`	`~0A BOR_CFG W 0`	Disables all window borders.
Restore Default Setting	`ATM 08 RST_SET W`	`~08 RST_SET W`	Resets all settings, including network settings, to their factory-default values. Use with caution.

Report Baud Rate	`ATM 08 BAU_RAT R`	`~BAU_RAT [1...5]`	Reports current baud rate setting.
			Example: Baud Rate = 9600
			`ATM 08 BAU_RAT R`
			`~BAU_RAT 1`

Set Baud Rate	`ATM 09 BAU_RAT W 1`	`~09 BAU_RAT W 1`	Sets serial baud rate to 9600.
	`ATM 09 BAU_RAT W 2`	`~09 BAU_RAT W 2`	Sets serial baud rate to 19200.
	`ATM 09 BAU_RAT W 3`	`~09 BAU_RAT W 3`	Sets serial baud rate to 38400.
	`ATM 09 BAU_RAT W 4`	`~09 BAU_RAT W 4`	Sets serial baud rate to 57600.
	`ATM 09 BAU_RAT W 5`	`~09 BAU_RAT W 5`	Sets serial baud rate to 115200.

Table 4-5 Advanced Commands (Continued)

Function	Command	Feedback	Description
Miscellaneous	`ATM 08 CSW_VER R`	`[Firmware version]`	Reports QuadView UHDx firmware version.
	`ATM 09 SYS_UPT W 1`	`~09 SYS_UPT W 1`	Updates QuadView UHDx firmware using file stored on connected USB storage device.
	`ATM 08 WIN_LIS R`	(refer to examples)	Reports window status (on/off), source, origin, width, and height.

		Examples:
		Two-window layout:
		`ATM 08 WIN_LIS R`
		`WinA1:On  Input:1 0000 0000 3840 2160`
		`WinB1:On  Input:2 0000 1440 1280 0720`
		`WinA2:Off`
		`WinB2:Off`
		
		Four-window layout:
		`ATM 08 WIN_LIS R`
		`WinA1:On  Input:1 0000 0001 1920 1080`
		`WinB1:On  Input:2 1920 0001 1920 1080`
		`WinA2:On  Input:3 0000 1080 1920 1080`
		`WinB2:On  Input:4 1920 1080 1920 1080`	

Report Key Lock Status	`ATM 08 KEY_LOK R`	`~KEY_LOK [0...2]`	Reports current Key Lock setting.
			Example: Key Lock off
			`ATM 08 KEY_LOK R`
			`~KEY_LOK 0`

Key Lock/Unlock	`ATM 09 KEY_LOK W [0 … 2]`	`~09 KEY_LOK W [0 … 2]`	Locks or unlocks the front panel buttons. ◆ `0`: Unlock all buttons; ◆ `1`: Lock all buttons except the STANDBY and LOCK buttons; ◆ `2`: Lock all buttons except the LOCK button. **Note:** Power-cycling the QuadView UHDx unlocks the buttons.

4.4 Configuration Change Notifications

The QuadView UHDx sends unsolicited notifications via the command-line interface when you select a new output resolution or choose a new layout. Either of these changes causes the QuadView UHDx to send a `VideoConfigChange` message to the control system. This occurs regardless of the method used to effect the change (front panel controls, QuadView UHDx Web Controller, or command-line interface).

CHAPTER 5 FIRMWARE UPDATES

Important Updating the firmware resets all options to their factory default settings. You will need to restore your desired settings after completing the firmware update.

RGB Spectrum periodically updates product firmware to add new features or improve product performance. To check for firmware updates for your RGB Spectrum product:

1. Visit the **Partner Portal** section of our web site at http://www.rgb.com/partners/.
2. Either:
   - Click the Login button to access the portal with an existing username and password.
   - Create a new account by clicking the Register button and then following the on-screen instructions.
3. After logging in to the portal, select Product Firmware.
4. To determine your current firmware version number, either:
   - Select the **Update** tab of the QuadView UHDx Web Controller, and then read the **Firmware Version** and **WebGUI Version** (Web Controller version) that appear at the top of the tab).
   - Send the ASCII command `ATM 08 CSW_VER R` from a PC or other controller via the LAN or RS-232 interface.

You can use any of the following methods to update the QuadView UHDx firmware:

- **Web Controller:** See **"Web Controller" on page 68**.
- **Command Line:** See **"Command Line" on page 69**.

5.1 Web Controller

This section describes updating the QudView UHDx firmware using the QuadView UHDx Web Controller.

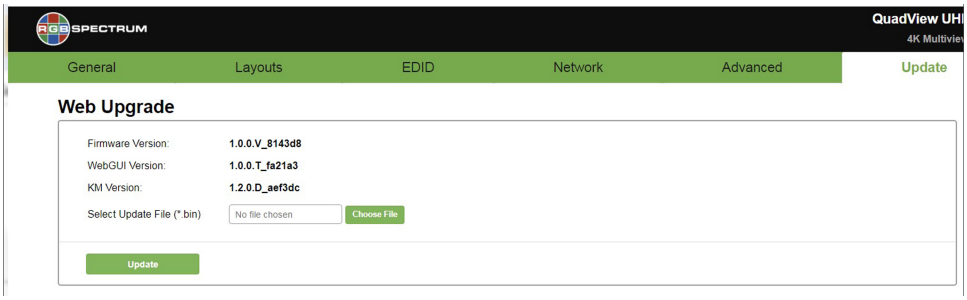


Figure 5-1 Update Settings

To start a firmware update using the QuadView UHDx Web Controller:

1. Access the **Update** tab.

Note	RGB Spectrum recommends using Google Chrome or Mozilla Firefox when accessing the QuadView UHDx Web Controller or performing a firmware upgrade. Microsoft Internet Explorer is not supported.

2. Click the **Choose File** button.

   A standard **File Upload** win dow appears.

3. Locate and select the `update.bin` firmware file.

4. Click **Open**.

5. Click **Update**.

The message **System is upgrading…** appears on the display device and all of the front panel button indicators blink to indicate that the firmware update is in progress. The QuadView UHDx reboots automatically after approximately 90 seconds. After it finishes updating, the message **Upgrade was successful** appears on the screen.

5.2 Command Line

To start a firmware update using the command line interface:

1. Copy the firmware file `update.bin` to the root directory of a USB drive.
2. Plug the USB drive into the **PROG** USB port on the QuadView UHDx rear panel.
3. Connect an HDMI display to the QuadView UHDx.
4. Turn on the QuadView UHDx.

   The display shows the HDMI output signal once the QudView UHDx finishes booting.
5. Send the ASCII command `ATM 09 SYS_UPT W 1` from a PC or other controller via the LAN or RS-232 interface.

The message **System is upgrading…** appears on the display device and all of the front panel button indicators blink to indicate that the firmware update is in progress. The QuadView UHDx reboots automatically after approximately 90 seconds. After it finishes updating, the message **Upgrade was successful** appears on the screen.

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CHAPTER 6 CONTACT INFORMATION

6.1 Corporate Headquarters

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QuadView® UHDx / UHDx KVM

4K Multiviewer

User Guide

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