QuadView® UHD
4K Multiviewer
User's Guide

January 2016

RGB Spectrum
950 Marina Village Parkway
Alameda, CA 94501

DOCUMENT

- *QuadView UHD User's Guide*
- P/N 350-11845-01 v1.0
- January 2016

COPYRIGHT

This guide is for use with the RGB Spectrum *QuadView UHD 4K Multiviewer*. Use for any other purpose is not permitted. This guide was prepared for viewing on a PC; a copy may be printed as required.

- QuadView is a registered trademark of RGB Spectrum, Inc.

NOTICE

RGB Spectrum reserves the right to make any modification to this guide or the information contained herein at any time without notice.

All features, functions, and specifications are subject to change without notice or obligation.

LIMITED WARRANTY

RGB Spectrum (RGB) warrants that this product will be free from defects in material and workmanship, under normal use and service, and when correctly installed and maintained, for a period of one (1) year from date of shipment. RGB's liability under this warranty is limited solely to replacing, repairing or issuing credit for any product which is shown to be defective during the warranty period.

Purchaser shall: (i) notify RGB Spectrum promptly in writing of any claims, and (ii) provide RGB Spectrum with an opportunity to inspect and test the product claimed to be defective.

Warranty does not cover misuse, abuse, improper installation or application, improper maintenance or repair, alteration, accident or negligent use, improper temperature, humidity or other environmental condition during storage, transportation or handling. RGB Spectrum shall have no obligations under this warranty with respect to any defect unless it receives notice and a description of such defect no later than five (5) business days following the expiration of the warranty period.

THE WARRANTIES STATED HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING (BUT NOT LIMITED TO) ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL RGB SPECTRUM BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOSS, DAMAGE OR EXPENSE DIRECTLY OR INDIRECTLY ARISING FROM THE PURCHASER'S INABILITY TO USE THE PRODUCT EITHER SEPARATELY OR IN COMBINATION WITH ANY OTHER EQUIPMENT OR FACILITIES, OR FROM ANY OTHER CAUSE.

EXTENDED WARRANTY

An annual extended warranty may be purchased from RGB Spectrum. Should the product fail to operate properly during the covered period, RGB Spectrum will repair the product and restore it to normal operation without charge for labor and parts. For further information on obtaining an extended warranty, email **tech@rgb.com** or call (510) 814-7000.

TABLE OF CONTENTS

LIST OF FIGURES

List of Tables

CHAPTER 1

INTRODUCTION

This User's Guide describes how to install and operate the RGB Spectrum *QuadView UHD 4K Multiviewer*.

1.1 Product Overview

The RGB Spectrum *QuadView UHD* is a high-performance 4K multiviewer designed to display up to four sources simultaneously in a variety of creative layouts.

With the *QuadView UHD*, you can mix and match input resolutions, scale any video input up to UHD and route any input to any window. Powerful image processing capabilities allow the *QuadView UHD* to display both HD and UHD inputs without downscaling. Up to 16 standard window layouts are provided — including quad-split, full screen, triple-window, and side-by-side mode.

The *QuadView UHD* also includes HDCP authentication and EDID management functionality. Audio follow and audio breakaway modes are standard, and you can select audio from any source — even one not currently displayed.

The *QuadView UHD* front panel enables you to quickly select audio, input and layout options. Simply select a layout, select inputs, and route each input to a specific window. In addition to the front panel, the *QuadView UHD* can be controlled through a web interface and an IR remote. Third-party control is possible via Ethernet or RS-232.

From the boardroom to the digital signage marquee, to the control room, the *QuadView UHD 4K Multiviewer* allows you to fully capitalize on the benefits of 4K UHD image processing, with speed, simplicity, and superb video quality.

1.2 Key Features

The *QuadView UHD 4K Multiviewer* provides these key features and functions:

1.2.1 System Features

- Displays up to four (4) windows simultaneously from up to seven (7) switchable sources.
- Supports 7.1-channel audio.
- Provides optical fiber and eight-channel analog audio outputs.
- 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 upgrades.
- Standard, 1 RU/19-inch width, rack-mountable enclosure.

1.2.2 Inputs

- Multiple inputs: 4 × HDMI, 2 × DisplayPort, 1 × RGBHV
- HDMI and DisplayPort inputs support resolutions up to 3840 × 2160 @30Hz.
- Scales input signals for output to a 4K/UHD or standard, 2K/HD display.
- Automatically scales source inputs to destination windows.
- Provides fast input switching.

1.2.3 Output

- Supports multiple HDMI output resolutions up to 3840 × 2160 @30Hz.
- Supports High-definition Digital Content Protection (HDCP) to allow the display of protected content.

1.2.4 Windows

- Offers 16, single- and multiple-window layouts.
- Lets you scale windows to full-window, 4:3, or 16:9 aspect ratios, or display content in its native aspect ratio.

1.2.5 Control

- Easy-to-use front-panel controls and infrared remote control unit (RCU).
- The *QuadView UHD* Web Controller, a simple, intuitive, web-based graphical user interface (GUI).
- Command-line Interface via RS-232 serial or Telnet connection.
- Support for third-party control systems.

1.3 System Control

System control for the *QuadView UHD 4K Multiviewer* is provided via the RS-232 serial port and the Ethernet port.

- The **RS-232** serial port connects to an ASCII terminal, any computer with a serial port, or a third-party control system. Commands are sent from the terminal or computer to the *QuadView UHD 4K Multiviewer*.

Note	USB-to-Serial converters are inexpensive and widely available. If necessary, use one to connect your USB-equipped computer to the *QuadView UHD* serial port.

- The **Ethernet** port allows you to connect the *QuadView UHD* to a network or directly to a PC. Using this connection, you can control the system using a Telnet command-line session or the *QuadView UHD* Web Controller.

Note	Refer to **Chapter 4, Command Line Control**, for detailed instructions for setting up and using the command-line interface.

1.4 Controls, Indicators and Connectors

The sections that follow describe the *QuadView UHD* front-panel controls and indicators, and the rear-panel connectors.

1.4.1 Front-Panel Controls and Indicators

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

Figure 1-1 QuadView UHD Front-Panel Controls and Indicators

Table 1-1 *QuadView UHD* Front-Panel Controls and Indicators

ID	Name	Description
1	IR receive sensor	Receives IR signals from the IR remote.
2	Input Buttons and Indicators	To select a video input, press one of these buttons. To select an audio input, press the **AUDIO** button, then press one of these buttons. The button you press lights to indicate your input selection.
3	Audio Selection Button and Indicator	Press this button to choose an input selection mode: audio (indicator on) or video (indicator off).
4	Window Selection Buttons and Indicator	To select a window, press one of these buttons. The button you press lights to indicate your window selection.
5	Screen Layout Selection Buttons and Indicators	To select a screen layout (window arrangement), press one of these buttons. The button you press lights to indicate your screen layout selection.
6	Output Resolution Button and Indicator	Press this button repeatedly to select the desired output resolution. As you do so, the LED corresponding to your selection lights.
7	Power Indicator	Lights to indicate when the unit has power.
8	Standby Button and Indicator	Press this button to select standby mode (indicator off) or normal operating mode (indicator on).

1.4.2 Rear-Panel Connectors

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

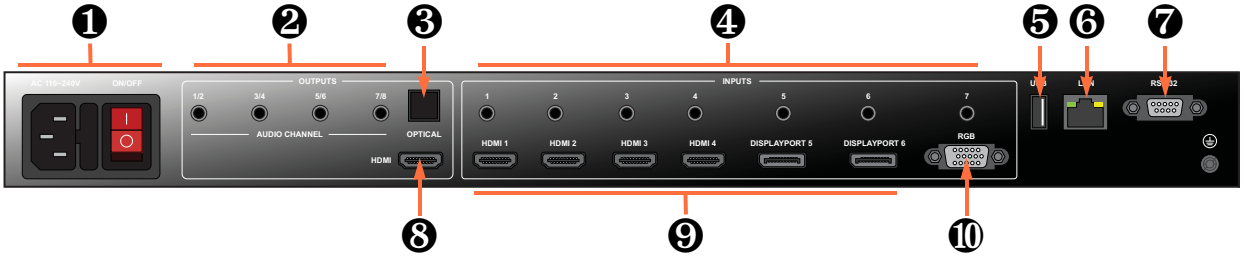


Figure 1-2 QuadView UHD Rear-Panel Connectors

Table 1-2 *QuadView UHD* Rear-Panel Connectors

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 connect the plug to an available electrical outlet.
2	Analog audio output	8-channel 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.
3	Optical output	Connect this port to the digital audio input port of your A/V receiver or other audio processing equipment.
4	Analog audio inputs 1~7	Stereo, analog audio inputs. Use cables with 3.5-mm mini-stereo plugs at one end to connect these jacks to audio sources.
5	USB	A standard, Type A USB port for updating *QuadView UHD* 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 4K display.
9	HDMI input 1 ~ 4	Connect up to four (4), 4K/UHD or 2K/HD sources to these inputs using HDMI cables.
	DisplayPort input 5 ~ 6	Connect up to two (2), 4K/UHD or 2K/HD sources to these inputs using DisplayPort cables.
10	RGB input	Connect an HD source to this input using a VGA (DB-15) cable. (RGB sources must be 5-wire, with separate horizontal and vertical sync.)

1.4.3 Remote Control Unit

Figure 1-3 shows the *QuadView UHD* remote control unit, and Table 1-3 describes its functionality.

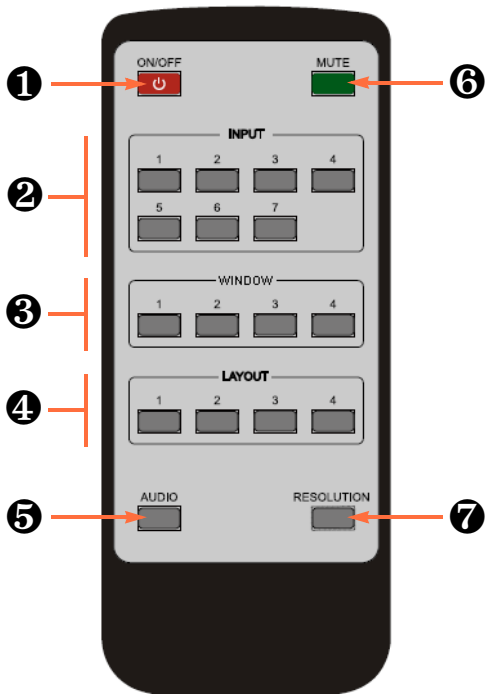


Figure 1-3 QuadView UHD Remote Control

Table 1-3 *QuadView UHD* Remote Control Unit Functions

ID	Name	Description
1	Power	Press this button to switch from Normal operating mode (on) to Standby mode (off) or vice versa.
2	Input 1-7	To select a video input, press one of these buttons. To select an audio input, press the **AUDIO** button, then press one of these buttons.
3	Windows 1-4	To select a window, press one of these buttons.
4	Screen Layout	To select a screen layout (window arrangement), press one of these buttons.
5	Audio	Press this button to choose an input selection mode: audio or video.

Table 1-3 *QuadView UHD* Remote Control Unit Functions(Continued)

ID	Name	Description
6	Mute	Press this button to mute or unmute the *QuadView UHD* audio output.
7	Resolution	Press this button repeatedly to select the desired output resolution.

1.5 Specifications

Table 1-4 lists the *QuadView UHD 4K Multiviewer* specifications.

Table 1-4 *QuadView UHD* Specifications

Parameter	Specification
Inputs	
Video	◆ 4 × HDMI (1.4b) ◆ 2 × DisplayPort (1.2) ◆ 1 × RGBHV
Resolution (maximum)	3840 × 2160 @30Hz
Color sampling	4:4:4, 8-bit
HDCP	Compliant
Audio	◆ Embedded audio from HDMI or DisplayPort sources ◆ Stereo, analog audio via 7 × 3.5-mm mini jack
Outputs	
Video	HDMI 1.4b
Supported resolutions	Auto, 3840 × 2160 @ 30Hz, 1920 × 1080 @ 60Hz, 1280 × 720 @ 60Hz, 1900 × 1200 @ 60Hz, 1600 × 1200 @ 60Hz, 1280 × 800 @ 60Hz, 1024 × 768 @ 60Hz
Audio	◆ 1 × HDMI (embedded) ◆ 1 × optical ◆ 4 × analog (8 channels via 3.5-mm mini jack, stereo)
Control	
Web	*QuadView UHD* Web Controller
Serial	9-pin, RS-232 port for command-line control by PC or third-party control system
Network	10/100/1000 Base-T Ethernet for command-line control via Telnet
USB	1 × USB 2.0 Type A for firmware update

Table 1-4 *QuadView UHD* Specifications (Continued)

Parameter	Specification
Power	
Power Supply	Universal 100-240 VAC, 50-60 Hz
Power Consumption (maximum)	15 Watts
Environmental	
Temperature	Operating (nominal): 41 ºF to 104 ºF (5 ºC to 40 ºC) Non-Operating: -4 ºF to 158 ºF (-20 ºC to 70 ºC)
Relative Humidity	Operating: 5% to 90% non-condensing
Altitude	Operating: Up to 6,562 ft (2 km)
Physical	
Dimensions	See **Figure 1-4** (dimensions are in [millimeters] and inches)
Weight	7.3 lbs. (3.3 kg)
Specifications are subject to change without notice.	

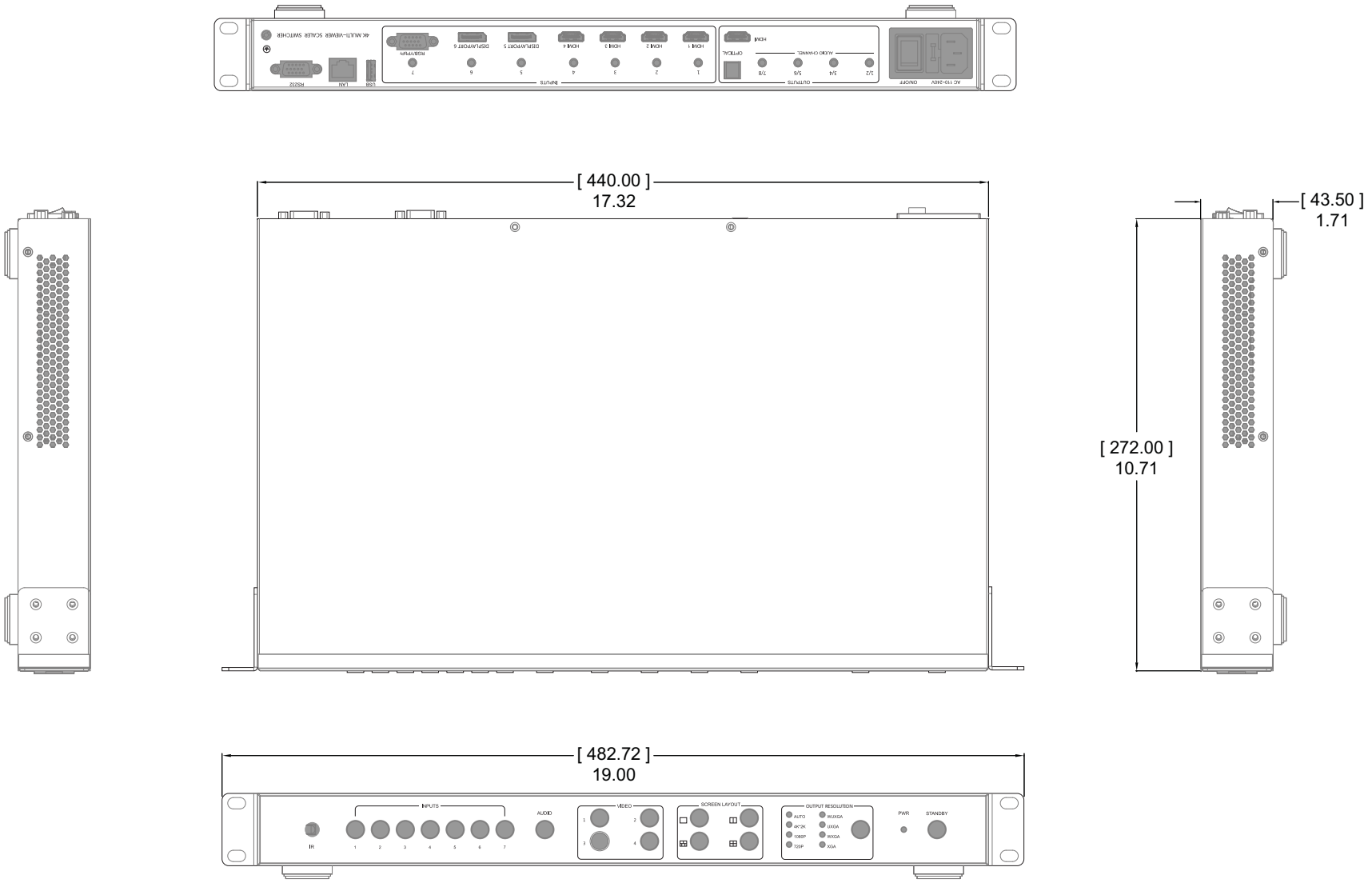


Figure 1-4 QuadView UHD Overall Dimensions

CHAPTER 2

INSTALLATION

This chapter guides you through the *QuadView UHD* installation process. The following topics are discussed:

2.1 Connections to the *QuadView UHD*

Proceed as follows to connect the *QuadView UHD* to:

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

2.1.1 Connecting Sources

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

2.1.2 Connecting a Display

Connect a 4K/UHD or 2K/HD display to the **HDMI Output** port.

2.1.3 Connecting Speakers or Other Audio Equipment (Optional)

The *QuadView UHD* provides HDMI, optical, and 8-channel analog audio output. **Figure 2-1** shows the analog output connector pinouts (Tip = Odd-numbered channels; Ring = Even-numbered channels).

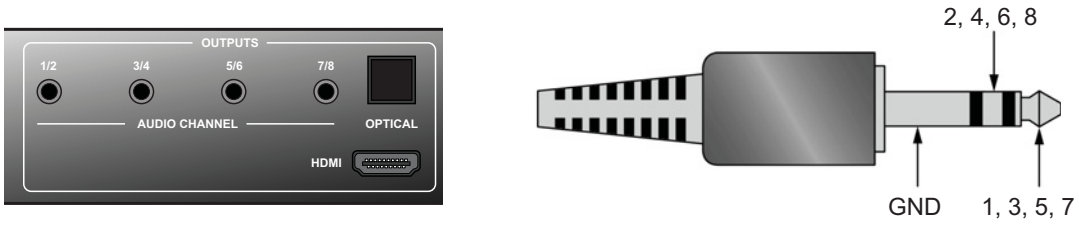


Figure 2-1 QuadView UHD Audio Outputs

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

ANALOG OUTPUT CHANNEL ASSIGNMENTS

Table 2-1 shows the *QuadView UHD* analog output channel assignments. Connect the outputs to your audio/video (A/V) receiver or other audio processing equipment accordingly. If your equipment does not have multi-channel, analog audio inputs, connect outputs 1 and 2 only.

Table 2-1 Analog Audio Output Channel Assignments

Audio Format	Output Channel							
	1	2	3	4	5	6	7	8
2.0	Left	Right						
2.1			Low-Frequency Effects (LFE) (Subwoofer)					
5.1				Center	Surround Back Left	Surround Back Right		
7.1							Surround Left	Surround Right

2.1.4 Connection 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 UHD*; see **Figure 2-2**.

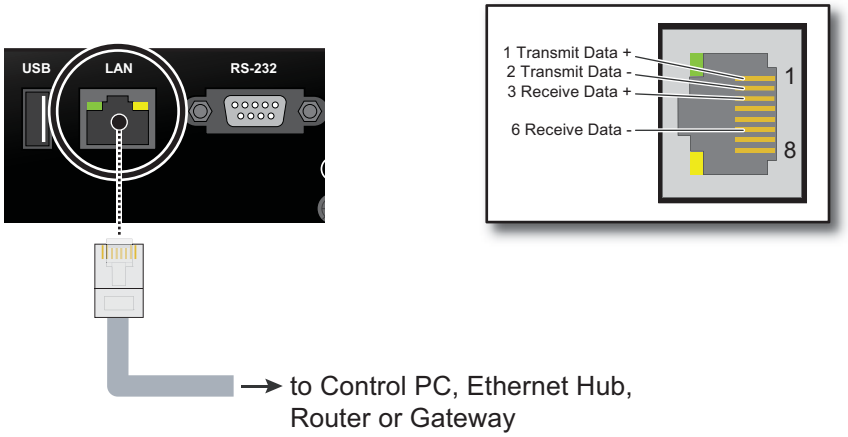


Figure 2-2 Connecting the QuadView UHD to a Network

2.1.5 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 UHD*; see **Figure 2-3**.

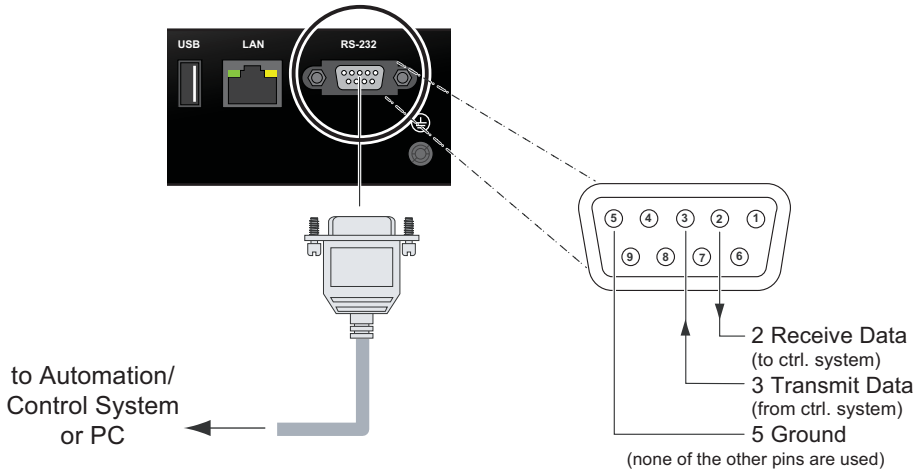


Figure 2-3 RS-232 Controller Connection

2.2 Applying Power to the *QuadView UHD*

Important	Whenever you turn on or reset the *QuadView UHD*, make sure your display is already turned on. Otherwise, the *QuadView UHD* may have difficulty detecting it.

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 UHD* (AC 100V ~ 240V). See **Figure 1-2**.
4. Connect the other end to an AC power source.
5. Turn the rear-panel main power switch to the “on” position. When you do, the switch lights. One the front panel, the **PWR** indicator also lights.
6. Press the **STANDBY** button on the *QuadView UHD* front panel, or the **ON/OFF** () button on the remote control unit. All of the front-panel buttons light for approximately three seconds, then go out (except for the **WINDOW 1~4**, **LAYOUT 4**, and **STANDBY** buttons and **AUTO** LED, which remain on).

The *QuadView UHD* is now ready for use.

CHAPTER 3 OPERATION

This chapter describes all of the features and functions available through the*QuadView UHD* front-panel and remote controls, and the *QuadView UHD* Web Controller. These features and functions are also available from command-line interface; refer to **Chapter 4, Command Line Control**, for details.

3.1 Standby Mode and Normal Mode

The **PWR** LED, next to the **STANDBY** button on the front panel, indicates the power state of the *QuadView UHD*. This indicator lights red while power is being supplied to the device. If this LED is off, ensure that the rear-panel power switch is in the “on” position. Also, check the connection between the power receptacle on the *QuadView UHD* and the AC outlet.

When the *QuadView UHD* is in Standby mode, the **STANDBY** button is off. When it is in Normal mode, the **STANDBY** button lights.

To take the *QuadView UHD* out of Standby mode, do one of the following:

- Press the **STANDBY** button on the front panel;
- Press the **ON/OFF** button on the IR remote;
- Send the ASCII command `ATM 09 POW_CRL W 0` from a PC or other controller via the LAN or RS-232 interface; or
- Send the ASCII command `ATM 09 POW_WUP W 1` from a PC or other controller via the RS-232 interface.

3.2 Window Layouts

The *QuadView UHD* offers 16 window layouts from which to choose. These are shown in **Figure 3-1**.

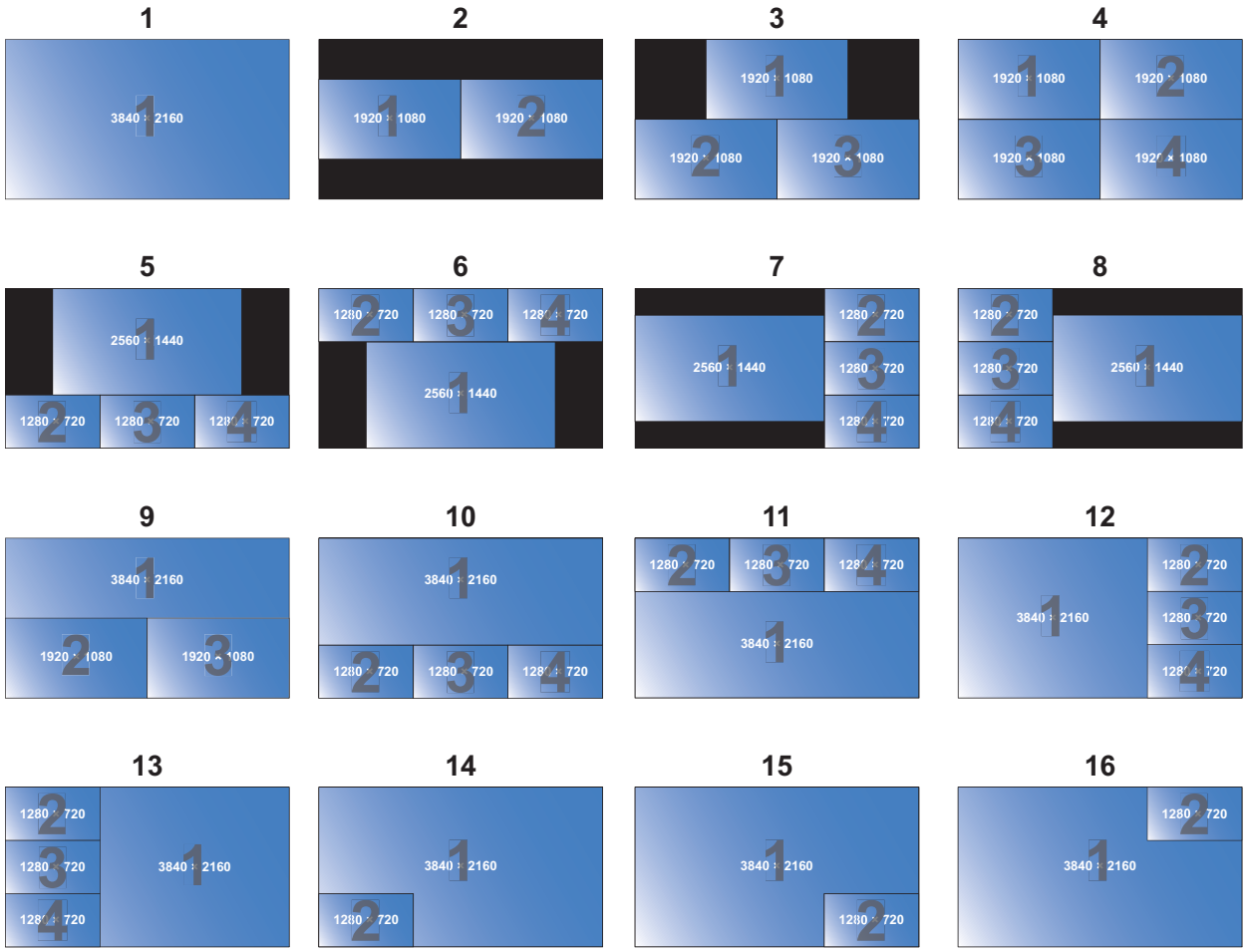
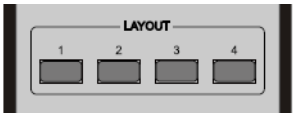


Figure 3-1 QuadView UHD Window Layouts

You can assign any of these layouts to each of the four **LAYOUT** buttons on the front panel and remote control. By default, Layouts 1 through 4 above are assigned to **LAYOUT** buttons 1 through 4 respectively.



Press a **LAYOUT** button to load the screen layout assigned to that button. When you do, the front-panel **LAYOUT** button lights to indicate your selection. Also, the **WINDOW 1~4** buttons light to indicate the number of windows in the layout you have selected.

The *QuadView UHD* provides physical connections for up to seven (7) sources, and can display up to four of those sources at a time.

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

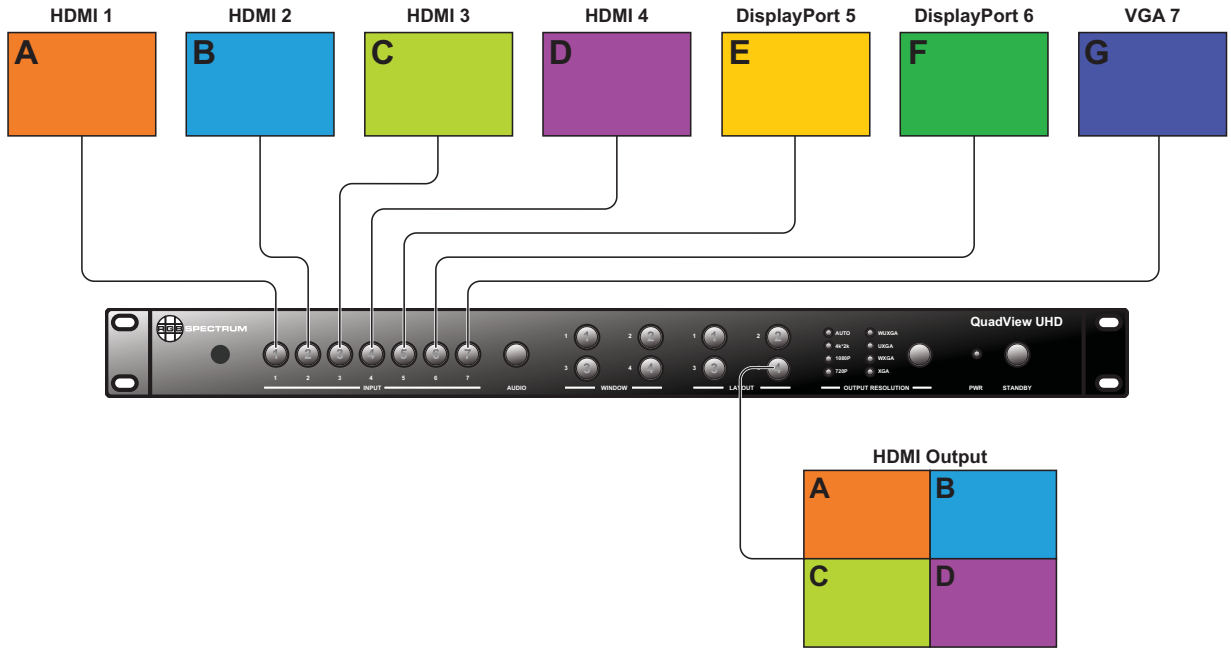


Figure 3-2 QuadView UHD Default Source-to-Window Routing

To route a source to a window, select a source followed by a window – or vice versa – as described in the following sections.

3.2.1 Single-Window Mode (Layout #1)

To use the *QuadView UHD* in single-window mode, select Screen Layout #1 using the front-panel buttons or the remote control. When you do, the front-panel **LAYOUT 1** button lights to indicate your selection. Also, the **WINDOW 1** button lights to indicate single-window mode.

By default, the *QuadView UHD* displays the **HDMI 1** source in Window 1. To display a different source – for example, **DISPLAYPORT 5** – in Window 1, do either of the following:

- Press the **INPUT 5** button on the front panel or on the remote. The new source appears in the window immediately.
- Press the **WINDOW 1** button on the front panel or on the remote. When you do, the front-panel **INPUT 1** button lights to indicate that it is the currently-selected source. The other front-panel **INPUT** buttons blink to indicate that they are available for selection. Then, press the **INPUT 5** button on the front panel or on the remote. The other **INPUT** buttons turn off, the front-panel **INPUT 5** button lights briefly, and the *QuadView UHD* displays the **DISPLAYPORT 5** source in Window 1.

Note	If you do not press an **INPUT** button within five (5) seconds after pressing the **WINDOW 1** button, the *QuadView UHD* exits source selection mode without changing the source-to-window routing.

3.2.2 Dual-Window Mode (Layouts #2, #14, #15, and #16)

To use the *QuadView UHD* in dual-window mode, do one of the following:

- Select Screen Layout #2 using the front-panel, remote control, or *QuadView UHD* Web Controller. When you do, the front-panel **LAYOUT 2** button lights to indicate your selection.
- Select Screen Layout #14, #15, or #16 using the *QuadView UHD* Web Controller. (Optionally, if you have assigned one of these layouts to a button, you can use that button.)

In either case, the **WINDOW 1** and **WINDOW 2** buttons light to indicate dual-window mode.

Note	For instructions on using the *QuadView UHD* Web Controller, refer to **Using the QuadView UHD Web Controller on page 23**.

By default, the *QuadView UHD* displays the **HDMI 1** source in Window 1 and the **HDMI 2** source in Window 2. To display a different source – for example, **DISPLAYPORT 5** – in Window 1, do either of the following:

- Press the **INPUT 5** button on the front panel or on the remote. When you do, the front-panel **WINDOW 1** and **WINDOW 2** buttons blink to indicate that they are available for selection. Then, press the **WINDOW 1** button on the front panel or on the remote. The **WINDOW 1** and **WINDOW 2** buttons stop blinking and the *QuadView UHD* displays the **DISPLAYPORT 5** source in Window 1.

Note	If you do not press a **WINDOW** button within five (5) seconds after pressing the **INPUT 5** button, the *QuadView UHD* exits source selection mode without changing the source-to-window routing.

- Press the **WINDOW 1** button on the front panel or on the remote. When you do, the front-panel **INPUT 1** button lights to indicate that it is the currently-selected source. The other front-panel **INPUT** buttons blink to indicate that they are available for selection. Then, press the **INPUT 5** button on the front panel or on the remote. The other **INPUT** buttons turn off, the front-panel **INPUT 5** button lights briefly, and the *QuadView UHD* displays the **DISPLAYPORT 5** source in Window 1.

Note	If you do not press an **INPUT** button within five (5) seconds after pressing the **WINDOW 1** button, the *QuadView UHD* exits source selection mode without changing the source-to-window routing.

To display a different source in Window 2, use either method just described.

3.2.3 Triple-Window Mode (Layouts #3 and #9)

To use the *QuadView UHD* in triple-window mode, do one of the following:

- Select Screen Layout #3 using the front-panel, remote control, or *QuadView UHD* Web Controller. When you do, the front-panel **LAYOUT 3** button lights to indicate your selection.
- Select Screen Layout #9 using the *QuadView UHD* Web Controller. (Optionally, if you have assigned this layout to a button, you can use that button.)

In either case, the **WINDOW 1, WINDOW 2,** and **WINDOW 3** buttons light to indicate triple-window mode.

By default, the *QuadView UHD* 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 in **Dual-Window Mode (Layouts #2, #14, #15, and #16)**.

3.2.4 Quad-Window Mode (Layouts #4-8 and #10-13)

To use the *QuadView UHD* in quad-window mode, do one of the following:

- Select Screen Layout #4 using the front-panel, remote control, or *QuadView UHD* Web Controller. When you do, the front-panel **LAYOUT 4** button lights to indicate your selection.
- Select a quad-window Screen Layout (#4-8 or #10-13) using the *QuadView UHD* Web Controller. (Optionally, if you have assigned one of these layouts to a button, you can use that button.)

In either case, all four **WINDOW** buttons light to indicate quad-window mode.

By default, the *QuadView UHD* 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 in **Dual-Window Mode (Layouts #2, #14, #15, and #16)**.

3.3 Output Resolution

The *QuadView UHD* supports the following output resolutions:

- Auto
- 4k*2k (3840 × 2160 @30Hz)
- 1080P (1920 × 1080 @ 60Hz)
- 720P (1280 × 720 @ 60Hz)
- WUXGA (1900 × 1200 @ 60Hz)
- UXGA (1600 × 1200 @ 60HZ)
- WXGA (1280 × 800 @ 60Hz)
- XGA (1024 × 768 @60Hz)

When you select **Auto**, the *QuadView UHD* reads the Extended Display Identification Data (EDID) from the display device, and sets the output resolution accordingly.

To switch between available output resolutions, press the **OUTPUT RESOLUTION** button on the front panel or the **RESOLUTION** button on the remote control. The switching sequence is: Auto > 4K * 2K > 1080P > 720P > WUXGA > UXGA > WXGA > XGA > Auto. The corresponding LED indicator lights to indicate your selection.

3.4 Audio Settings

3.4.1 Audio Input Selection

The *QuadView UHD* has seven audio inputs. When you select an HDMI or DisplayPort input, the *QuadView UHD* can pass the audio embedded in the HDMI or DisplayPort signal to the HDMI output. If the HDMI or DisplayPort input has no embedded audio, the audio input can be from the corresponding 3.5-mm audio port. For example, if you connect a DVI source to the HDMI 1 input (using a DVI-to-HDMI adapter), you can route analog audio input 1 (above the HDMI1 port) to the audio output.

To use the audio signal from the Input 7 (VGA) source, connect the analog audio output from the source to analog audio Input 7.

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, do either of the following:

- Press the **AUDIO** button on the front panel or on the remote. When you do, it lights to indicate that the *QuadView UHD* is in audio input selection mode. The front-panel **INPUT** button corresponding to the currently-selected audio source lights. The other front-panel **INPUT** buttons blink to indicate that they are available for selection. To select a different audio source, press the **INPUT** button for that source on the front panel or on the remote. The other **INPUT** buttons turn off, the front-panel **INPUT** button for the selected source lights briefly, and the *QuadView UHD* outputs the audio from the selected source.

Note	If you do not select a new audio source within five (5) seconds after pressing the **AUDIO** button, the *QuadView UHD* exits audio input selection mode without changing the source-to-output routing.

- Press the **INPUT** button on the front panel or on the remote, for the audio source you want to output. Then, press the **AUDIO** button on the front panel or on the remote. The front-panel **INPUT** button for the selected source turns off and the *QuadView UHD* outputs the audio from the selected source.

Note	If you do not press the **AUDIO** button within five (5) seconds after selecting a new audio source, the *QuadView UHD* exits audio input selection mode without changing the source-to-output routing.

3.5 On-Screen Display (OSD) Messages

The *QuadView UHD* provides a variety of status information using its OSD.

3.5.1 Video Input Status and Network Settings

When you take the *QuadView UHD* out of Standby mode or select a screen layout, it displays the following information in each window for approximately 10 seconds:

- Input source;
- Input signal resolution; and
- "[Input Name] Not Connected" if no signal is present.

Figure 3-3 OSD Messages – Video Input Status

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

Figure 3-4 OSD Messages – Network Settings

3.5.2 Audio Status

Note	To turn off the display of this information, send the ASCII command `ATM 09 AUD_OSD W 1` from a PC or other controller via the LAN or RS-232 interface. Refer to **Chapter 4, Command Line Control**, for detailed instructions for setting up and using the command-line interface.

When you change the audio volume, the new setting appears at the bottom of the screen for approximately 15 seconds:

When you mute the audio output, a mute icon ( ) appears in the lower-left corner of the display space. It remains on-screen until you change the audio volume or un-mute the audio output, at which time an un-mute icon ( ) appears in its place.

3.6 Using the *QuadView UHD* Web Controller

The *QuadView UHD* Web Controller provides a graphical alternative to the front-panel or remote control buttons, or command-line setup and control over a serial or Telnet connection. It presents related system settings and status displays in a series of tabs:

- **General**
- **Layouts**
- **EDID Management**
- **Network Management**
- **Advanced**

To begin using the *QuadView UHD* Web Controller:

1. Launch your web browser.
2. Enter the *QuadView UHD* IP address into the browser address bar, as follows:

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

   where xxx.xxx.xxx.xxx is the IP address. If you do not know the *QuadView UHD* IP address, refer to **Video Input Status and Network Settings** for instructions on how to obtain this information.

   By default, the *QuadView UHD* is configured to obtain its IP address and other network interface settings from a Dynamic Host Configuration Protocol (DHCP) server. If (and **only** if) DHCP is enabled and the *QuadView UHD* cannot find a DHCP server, the IP address is set to **10.0.0.10**.

3. Press Enter. If the *QuadView UHD* is powered on and ready to accept HTTP connections, and your PC network settings are correct, you will see the *QuadView UHD* Web Controller – General tab, shown in **Figure 3-5**.

3.7 General

Use the controls on the General page (**Figure 3-5**) to perform basic video and audio configuration.

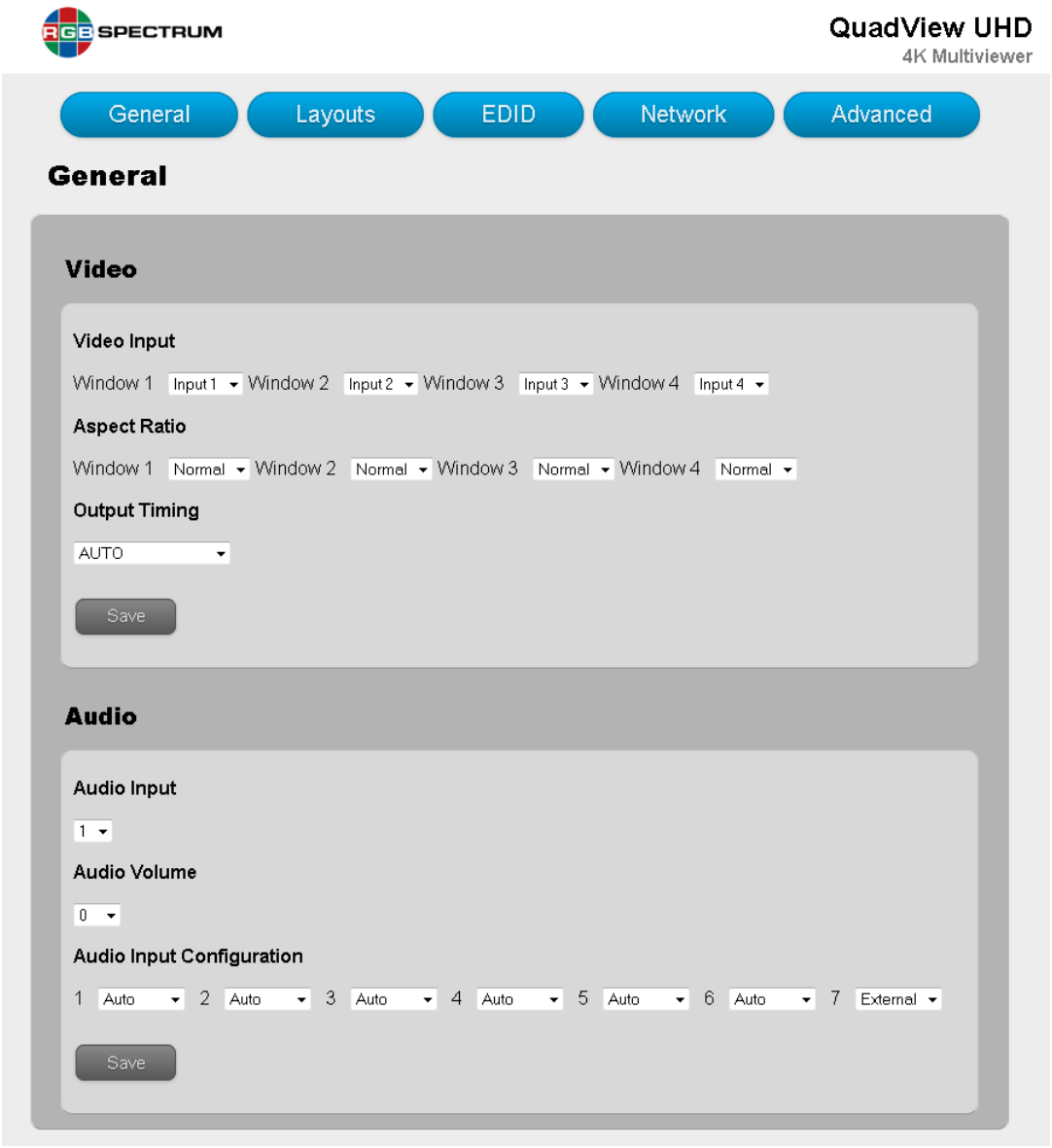
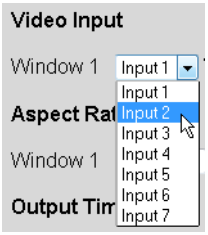


Figure 3-5 QuadView UHD Web Controller – General Settings

3.7.1 Video

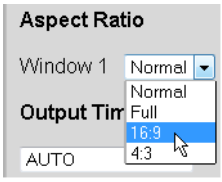
VIDEO INPUT

To route a video input to a window, select it from the drop-down menu for that window.



ASPECT RATIO

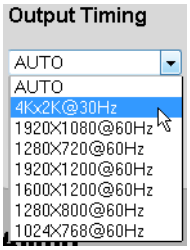
For each window, the following aspect ratio settings are available:



- **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 UHD* supports the following output resolutions:



- Auto
- 4K*2K (3840 × 2160 @30Hz)
- 1080P (1920 × 1080 @ 60Hz)
- 720P (1280 × 720 @ 60Hz)
- WUXGA (1900 × 1200 @ 60Hz)
- UXGA (1600 × 1200 @ 60HZ)
- WXGA (1280 × 800 @ 60Hz)
- XGA (1024 × 768 @60Hz)

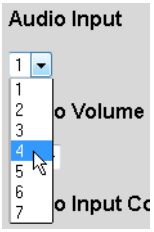
Select the output resolution that matches the capabilities of your display. When you select **Auto**, the *QuadView UHD* reads the Extended Display Identification Data (EDID) from the display device, and sets the output resolution accordingly.

When you have finished configuring video settings, click **Save** to confirm the changes.

3.7.2 Audio

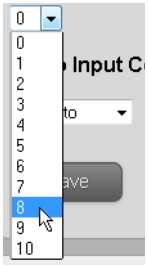
AUDIO INPUT

To route an audio input to the audio outputs, select it here.



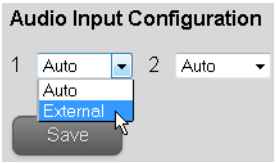
AUDIO VOLUME

Output volume ranges from 0 to 10. Zero (0) mutes the audio output, and 10 is the maximum volume. If you have muted the audio output using the **Audio Mute** control (on the **Advanced** page), changing the audio volume will un-mute it.



AUDIO INPUT CONFIGURATION

If you are using an HDMI or DisplayPort input with a PC or other device that does not support audio output via HDMI, set the **Audio Input Configuration** to **External** for that input. (Also connect the audio output from your source as described in the **Connecting Sources** section in **Chapter 2**.) This setting associates an analog audio input with the corresponding HDMI or DisplayPort input. For Input 7, this is the only choice.



If the source does support audio output via HDMI, set this option 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.

When you have finished configuring audio settings, click **Save** to confirm the changes.

3.8 Layouts

Use the controls on the Layouts page (**Figure 3-6**) to select a screen layout and assign layouts to front-panel/remote control buttons.

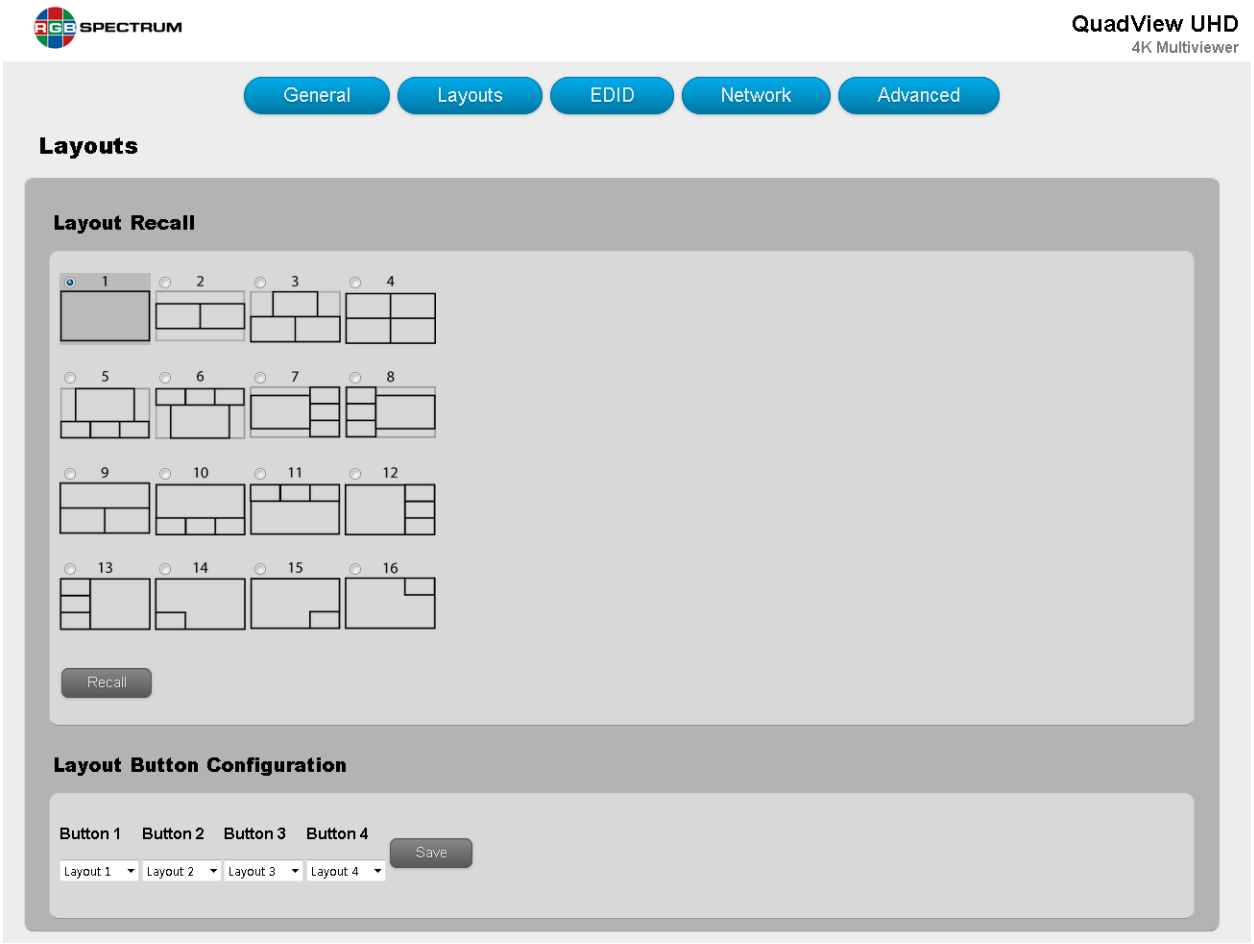


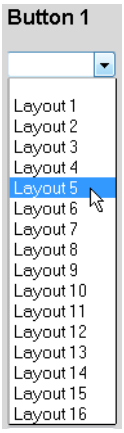
Figure 3-6 QuadView UHD Web Controller – Layout Settings

3.8.1 Layout Recall

To recall a layout, click a radio button next to the layout number. Then, click **Recall**.

3.8.2 Layout Button Configuration

To assign a layout to a front-panel or remote control layout button, select the layout from the drop-down menu for that button. Then, click **Save**.



3.9 EDID Management

Use the controls on the EDID Management page (**Figure 3-7**) to perform the following tasks:

- Copy EDID to an input;
- Upload custom, user-defined EDID to the *QuadView UHD*; and
- Download EDID from the *QuadView UHD*.

The *QuadView UHD* has six, internal (fixed) EDID registers and seven (7), custom (user-defined) EDID registers. You can copy any Internal or Custom EDID to any input port. You can also copy EDID from the HDMI output to any input port.

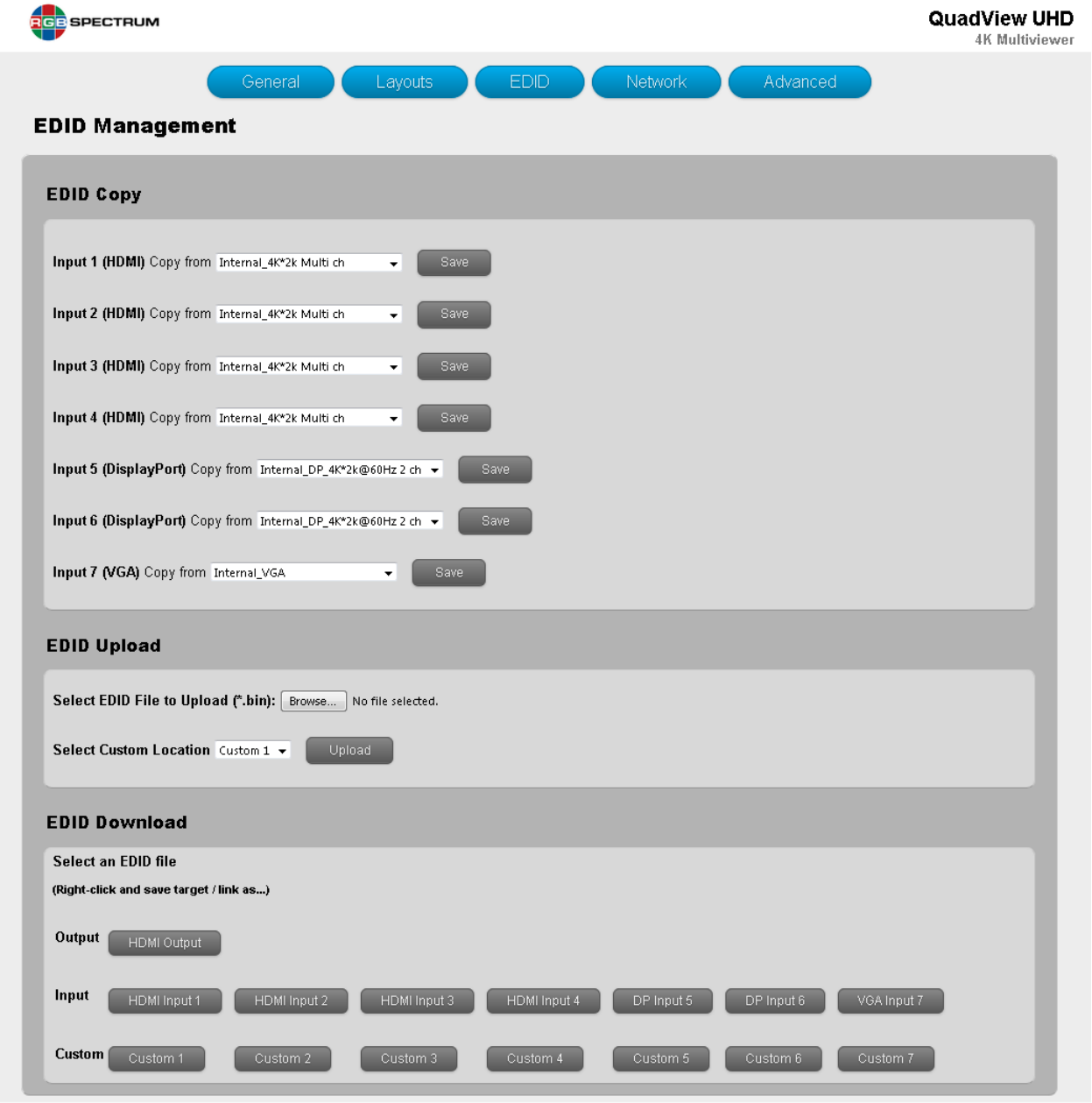


Figure 3-7 QuadView UHD Web Controller – EDID Management Settings

3.9.1 Internal EDID

The six Internal EDID registers are:

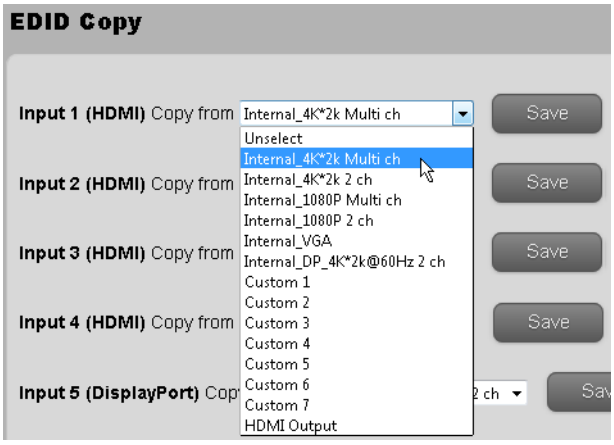
- 4K_Multi Channel
- 4K_2 Channel
- 1080P_2CH
- 1080P_Multi Channel
- VGA
- 4K@60Hz (for DisplayPort)

3.9.2 Custom EDID

The seven Custom EDID registers are designated Custom 1 through Custom 7. When you upload Custom EDID, you specify which Custom EDID register to use for storing it.

3.9.3 EDID Copy

To copy EDID to an input, use the drop-down menu for that input to select the source EDID (Internal, Custom or HDMI Output). Then, click **Save**.



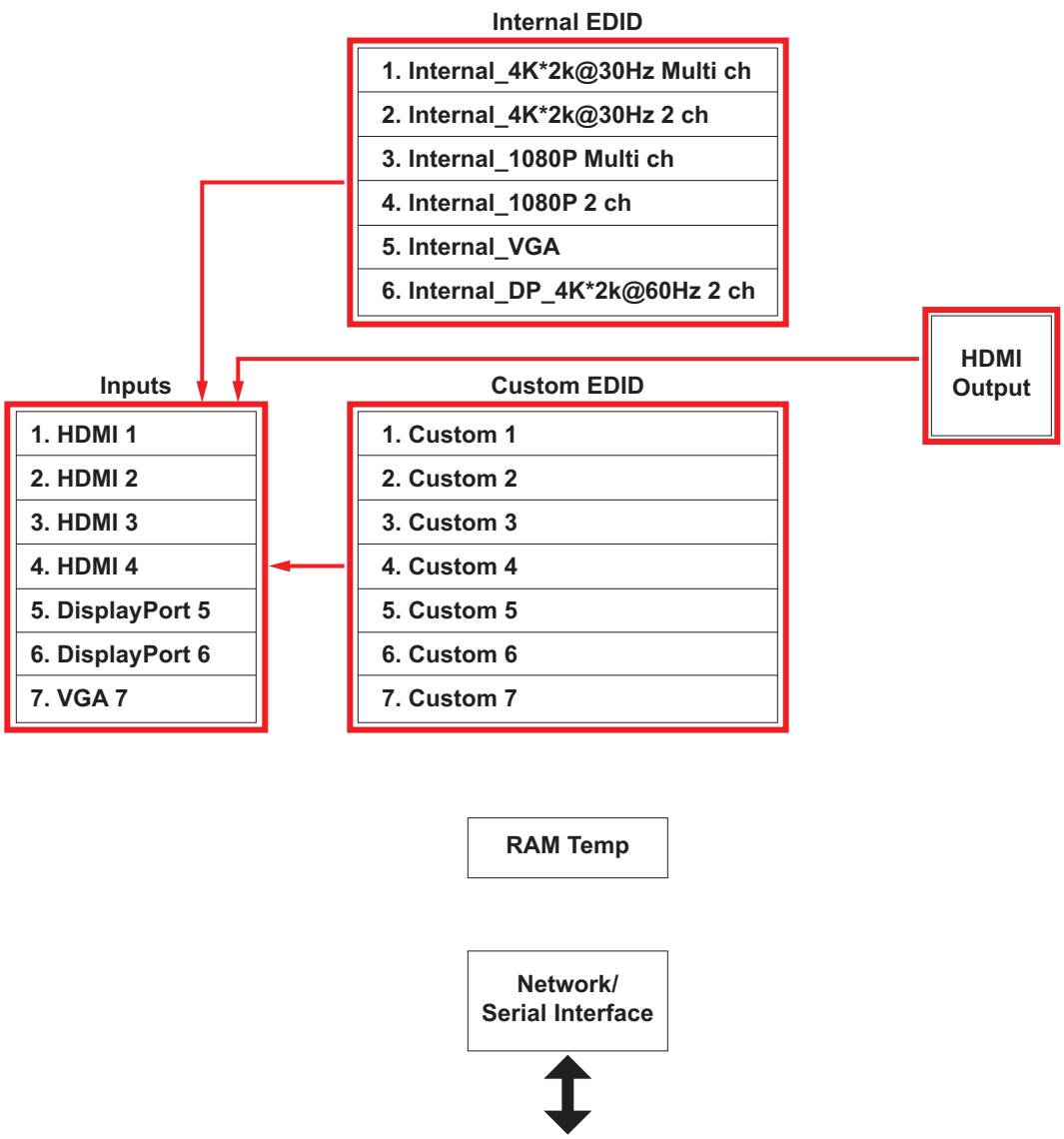


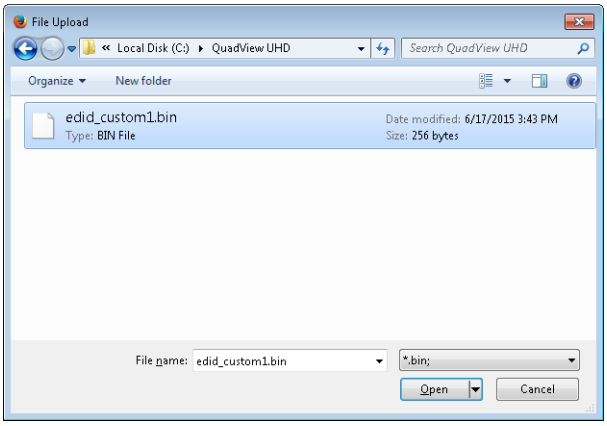
Figure 3-8 EDID Copy

3.9.4 EDID Upload

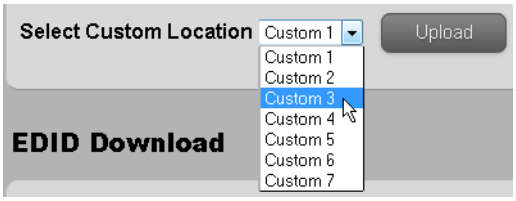
The *QuadView UHD* accepts external EDID in binary data (*.bin) format.

To upload EDID to a Custom EDID register:

1. Click **Browse…** or **Choose File** to select an EDID file to upload.
2. Locate the binary EDID file on your computer and select it.



3. Click **Open**.
4. Use the **Select Custom Location** drop-down menu to choose a destination for the uploaded EDID.
5. Click **Upload**.



To copy the uploaded EDID to an input, follow the steps given in the previous section, **EDID Copy**.

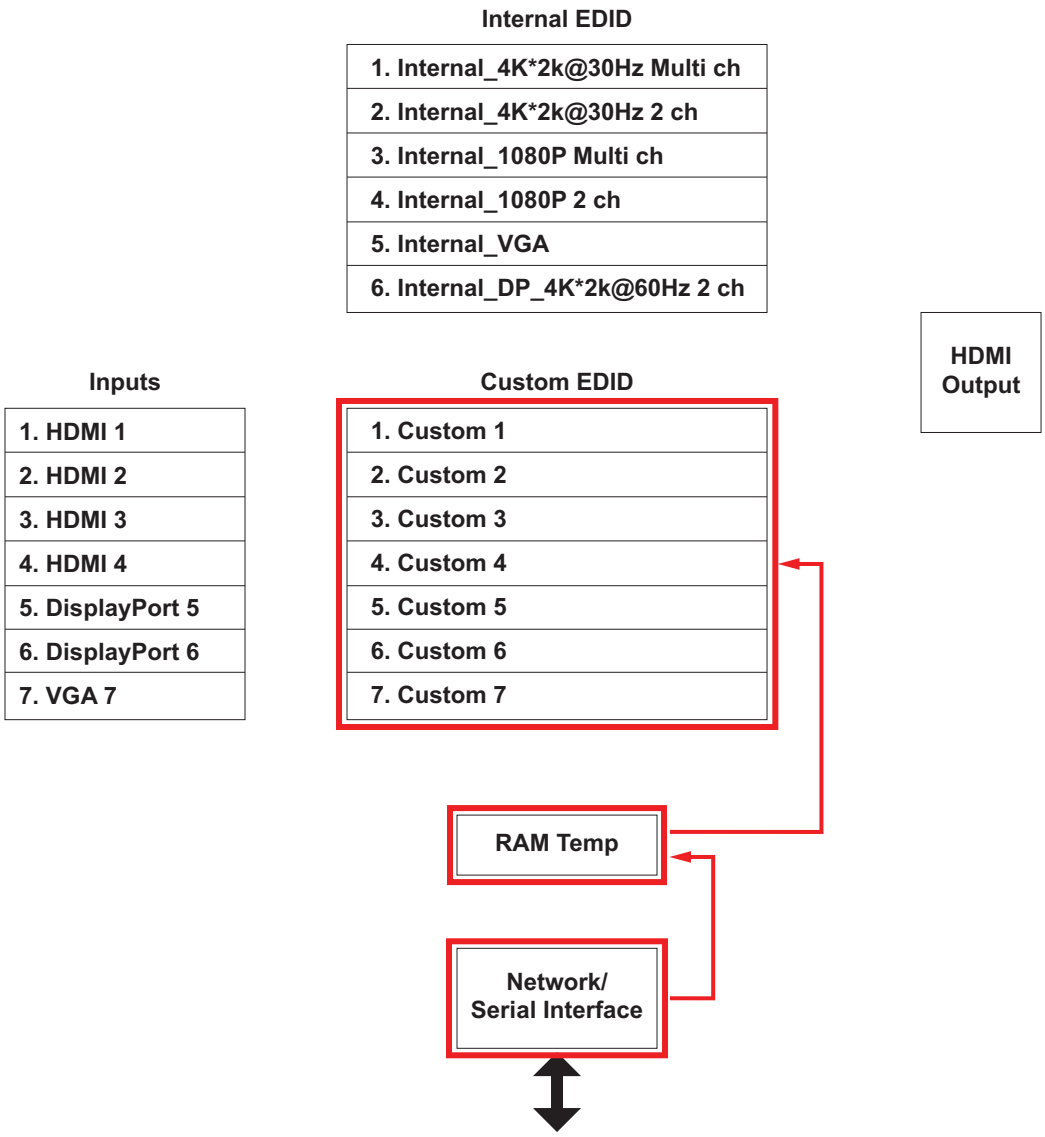


Figure 3-9 EDID Upload

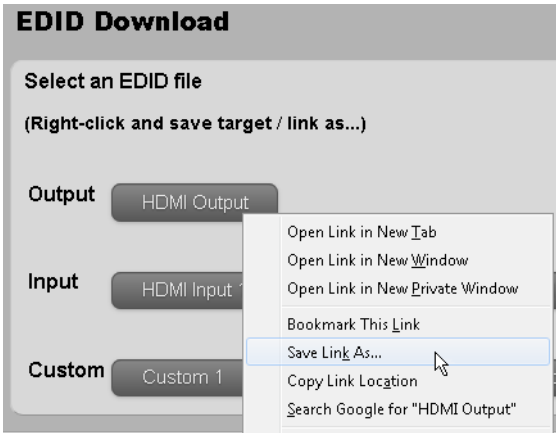
3.9.5 EDID Download

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 (**http://www.entechtaiwan.com/util/moninfo.shtm**).

WARNING	**Only advanced users should attempt to modify EDID manually. Using manually-modified EDID with an incompatible display can damage it!**

To download EDID from the HDMI Output, an input, or a Custom EDID register:

1. Right-click an **Output**, **Input**, or **Custom** button to choose the source of the downloaded EDID.
2. Select **Save Link As...** or **Save Target As...**.
3. Browse to the location in which you want to save the downloaded file.
4. Use your browser's save function to save the file to your computer.



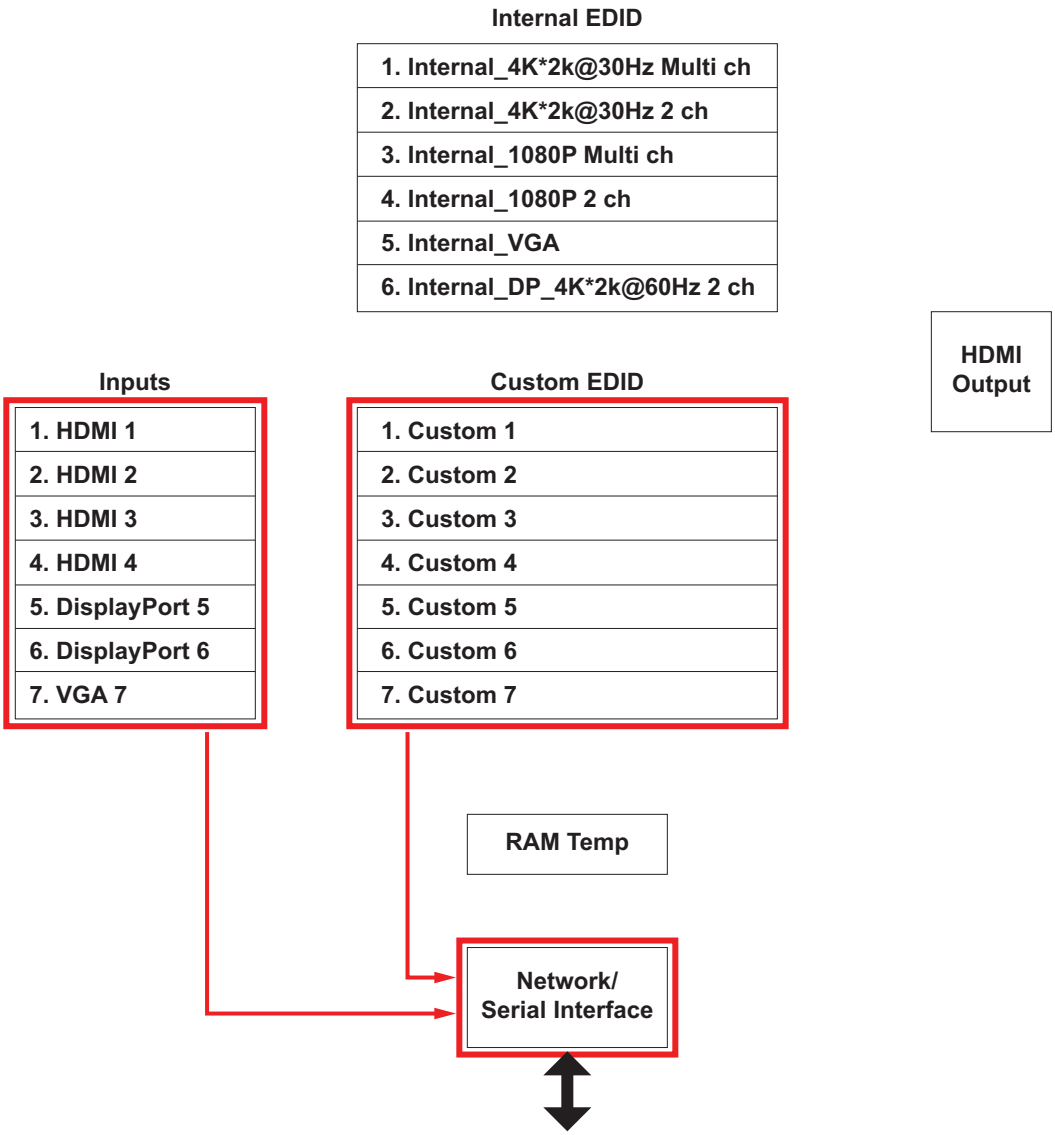


Figure 3-10 EDID Download

3.10 Network Management

Use the controls on the Network Management page (**Figure 3-11**) to configure the *QuadView UHD* network interface.

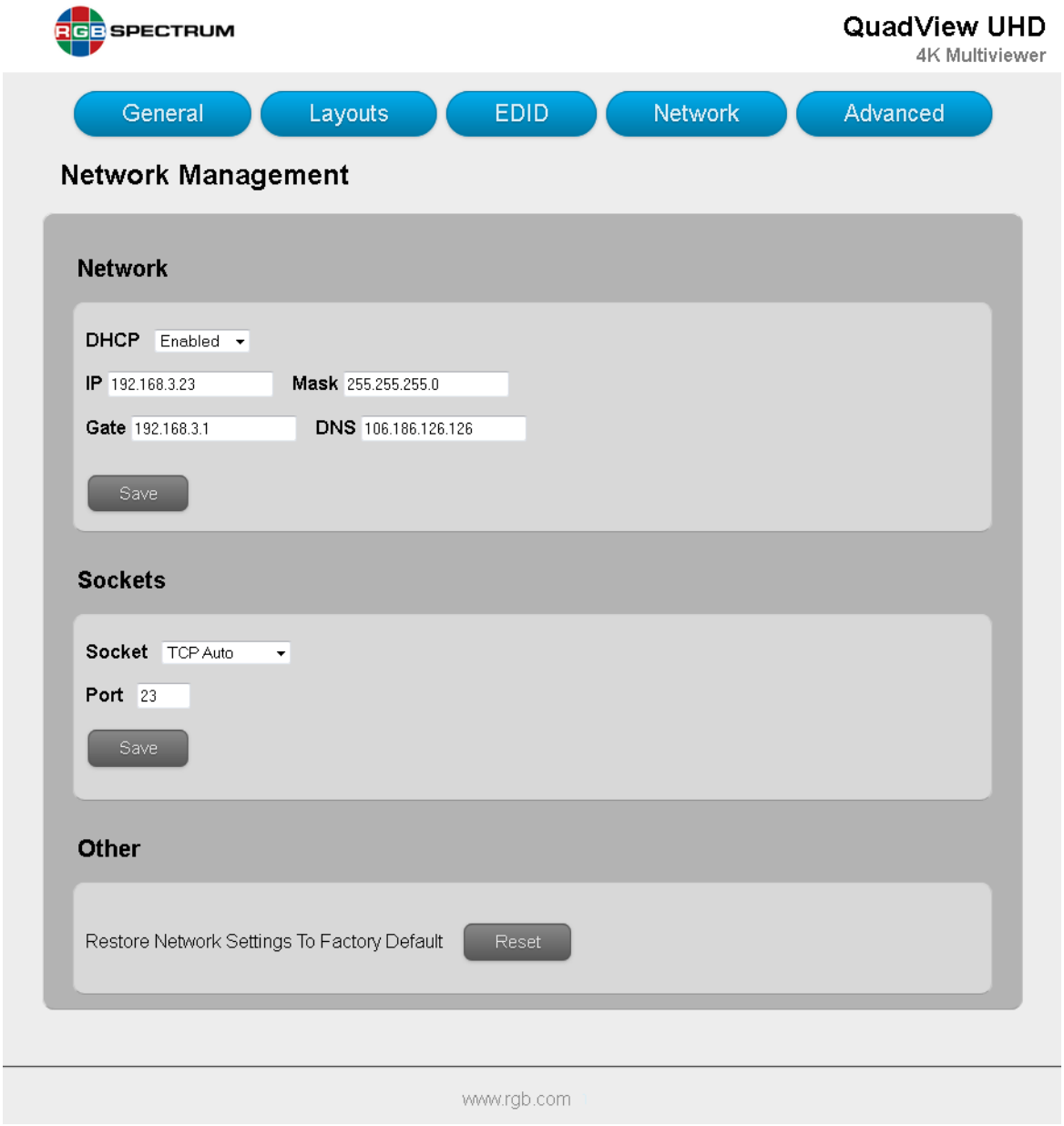


Figure 3-11 QuadView UHD Web Controller – Network Management Settings

3.10.1 Network

To configure the *QuadView UHD* network interface manually:

1. Set **DHCP** to **Disabled**.
2. Click **Save**.
3. Click **Network** to return to the Network Management page.
4. Enter values for **IP**, **Mask**, **Gate**, and **DNS** in the fields provided. If you are not sure what to enter here, consult your network administrator.
5. Click **Save** again.

To have the *QuadView UHD* automatically obtain its network settings from a DHCP server, set **DHCP** to **Enabled**, then click **Save**. (This is the default setting.)

To continue using the *QuadView UHD* Web Controller after changing the DHCP or static network settings, enter the new IP address in the address bar of your browser.

3.10.2 Sockets

For most *QuadView UHD* applications, it is not necessary to change the default **Socket** and **Port** settings (**TCP Auto** and port **23**).

3.10.3 Other

RESTORE NETWORK SETTINGS TO FACTORY DEFAULT

To reset all *QuadView UHD* network settings to their factory-default values, click **Reset**. Then, click **OK** to confirm this action or **Cancel** to keep your current network settings.

The factory-default network settings are:

- DHCP = Enabled
- IP Address = 10.0.0.10
- IP Subnet = 255.255.255.0
- IP Default Gateway = 10.0.0.1
- DNS = 202.97.16.195

Note	If (and **only** if) DHCP is enabled and the *QuadView UHD* cannot find a DHCP server, the default IP network settings are applied.

3.11 Advanced

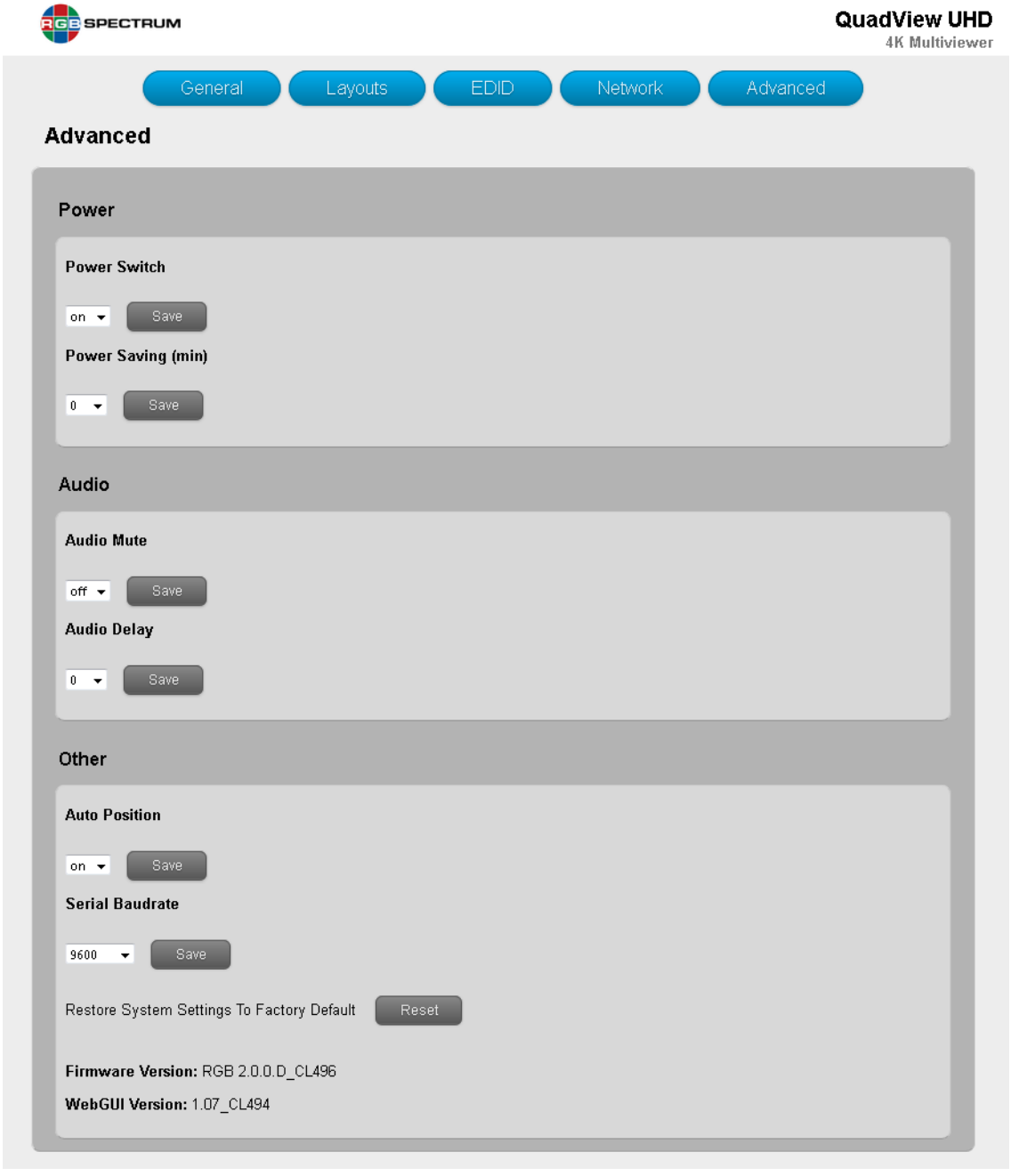


Figure 3-12 QuadView UHD Web Controller – Advanced Settings

3.11.1 Power

POWER SWITCH

Use the **Power Switch** control to put the *QuadView UHD* into Standby mode (**off**) or Normal mode (**on**). Click **Save** to confirm your selection.

POWER SAVING

Use the **Power Saving** control to have the *QuadView UHD* enter Standby mode after a specified interval when no signal is present on any displayed input.

Select a value of from **1** to **60** minutes, or select **0** to have the *QuadView UHD* remain in Normal mode regardless of the presence or absence of input signals. Then, click **Save**.

3.11.2 Audio

AUDIO MUTE

To mute the *QuadView UHD* audio output, set the **Audio Mute** control to **on**. Then, click **Save**.

To un-mute the audio output, select **off**, then click **Save**.

The OSD indicates the current audio output status as described in the **Audio Status** section.

AUDIO DELAY

Use the **Audio Delay** control to correct audio/video synchronization issues that can occur with some types of source material. Select from 0 to 400 milliseconds (ms) of delay, as needed, in 40-millisecond increments (**0** = no audio delay; **10** = 400 ms audio delay). Then, click **Save**.

3.11.3 Other

AUTO POSITION

This control automatically optimizes the position, clock and phase settings for images from a computer or other VESA-compliant, RGBHV source. To use it, set **Auto Position** to **on** and click **Save**. You should perform this adjustment whenever the output timing from the source changes.

The *QuadView UHD* displays this message in the VGA source window while it executes the **Auto Position** command:

SERIAL BAUDRATE

This control sets the data transfer rate of the *QuadView UHD* RS-232 port. (This setting must match the data rate of the device connected to the RS-232 port.) The recommended setting, 9600, is also the default setting. To change it, select a new baud rate from the drop-down menu and click **Save**.

RESTORE SYSTEM SETTINGS TO FACTORY DEFAULT

To reset all *QuadView UHD* settings – except for network settings – to their factory-default values, click **Reset**. Then, click **OK** to confirm this action and reboot the *QuadView UHD*, or **Cancel** to keep your current system settings.

This command is not undoable. Use it with caution!

CHAPTER 4 COMMAND LINE CONTROL

This chapter describes all of the features and functions available through the *QuadView UHD* command-line interface.

The *QuadView UHD* uses a simple text-based control protocol to take requests from control devices and to provide responses to such devices. This section describes how to send control messages over a TCP/IP or serial link between the *QuadView UHD* and an automation/control system or a PC running terminal emulation software.

RGB Spectrum recommends using the Tera Term program, provided on the *QuadView UHD Multiviewer Technical Resources* CD, for TCP/IP or serial control of the *QuadView UHD* from a PC.

4.1 Connecting to the *QuadView UHD* via a Network

To interface the *QuadView UHD* with an automation/control system or a PC via TCP/IP and Telnet, connect both devices to the same network; refer to **Figure 2-2**.

To initiate a Telnet session with the *QuadView UHD* using Tera Term:

1. Launch Tera Term.
2. Select **TCP/IP** and enter the IP address of the *QuadView UHD*. If you do not know the *QuadView UHD* IP address, refer to **Video Input Status and Network Settings** for instructions on how to obtain this information.
3. Select the **Telnet Service**.
4. Enter **23** for the **TCP port#**.
5. Click **OK**.
6. From the **Setup** menu, select **Terminal...**.

7. Set the terminal parameters as shown in **Figure 4-1**.

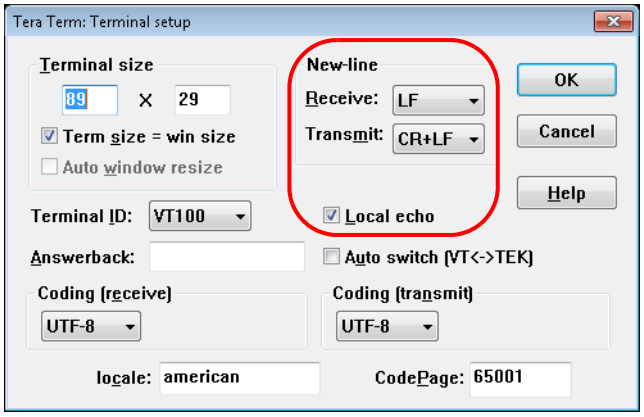


Figure 4-1 Tera Term Terminal Setup

8. Click **OK**.
9. To test the connection, type `ATM 08 CSW_VER W`.

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

10. Press Enter.

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

4.2 Connecting to the *QuadView UHD* via a Serial Link

To interface the *QuadView UHD* with an automation/control system or a PC via a serial (RS-232) link, connect the two devices as shown in **Figure 2-3**.

To use Tera Term for serial control:

1. Launch Tera Term.
2. Select **Serial**.
3. Select the appropriate COM **Port**.
4. Click **OK**.
5. From the **Setup** menu, select **Serial Port...**.

6. Set the serial port parameters as shown in **Figure 4-2**.

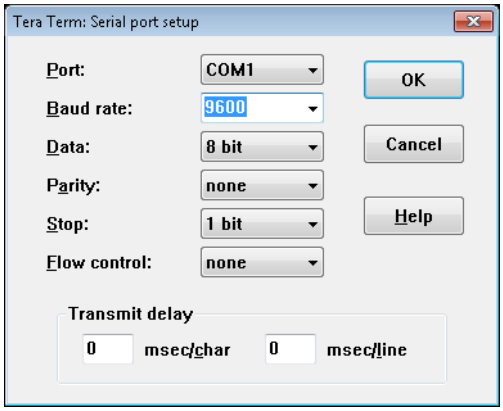


Figure 4-2 Tera Term Serial Port Setup

7. Click **OK**.
8. Follow Steps 6 through 9 for **Connecting to the QuadView UHD via a Network**.

To change the baud rate on the *QuadView UHD,* use the **Serial Baudrate** control on the *QuadView UHD* Web Controller **Advanced** tab. Or, use one of the **Set Baud Rate** commands listed in **Table 4-4**.

4.3 Command Syntax and Command Lists

The serial command syntax is as follows:

- **Commands are case-sensitive.** Alphabetic characters must be in UPPERCASE.
- You can use spaces to separate the components of a command (as has been done in the command lists that follow, to improve readability). The *QuadView UHD* 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`, `09`, `0A`, `0B`, or `13`).
- **Command:** `XXX_XXX`
- **Read/Write:** `R/W`
- **Parameter data:** `00...FF` with leading zeros suppressed. The meaning of the parameter data (if required) is dependent on the command.

Note	When using a serial connection, you do not need to send a carriage return (or press Enter) following the command.

4.3.1 General Commands

Table 4-1 describes the *QuadView UHD* general commands. These commands provide the same controls as those found on the *QuadView UHD* Web Controller **General** page.

Table 4-1 General Commands

Function	Command	Feedback	Description
Source-to-Window Routing	ATM 0A VDO_IPT W [1…4] [1…7]	0A VDO_IPT W [1…4] [1…7]	Route Input [1…7] to Window [1…4]. **Example:** To route Input 2 to Window 3, use the command: `ATM 0A VDO_IPT W 3 2`
Set Aspect Ratio	ATM 0A WIN_RAT W [1…4] [1…4]	0A WIN_RAT W [1…4] [1…4]	Set 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`
Set Output Resolution	ATM 09 OPT_TIM W 1	09 OPT_TIM W 1	Set the HDMI output resolution to Auto, outputting the resolution based on the EDID information from the display device.
	ATM 09 OPT_TIM W 2	09 OPT_TIM W 2	Sets the HDMI output resolution to 4K×2K@30Hz (UHD).
	ATM 09 OPT_TIM W 3	09 OPT_TIM W 3	Sets the HDMI output resolution to 1920×1080@60Hz 1080P (Full HD).
	ATM 09 OPT_TIM W 4	09 OPT_TIM W 4	Sets the HDMI output resolution to 1280×720@60Hz (720P).
	ATM 09 OPT_TIM W 5	09 OPT_TIM W 5	Sets the HDMI output resolution to 1920×1200@60Hz (WUXGA).
	ATM 09 OPT_TIM W 6	09 OPT_TIM W 6	Sets the HDMI output resolution to 1600×1200@60Hz (UXGA).
	ATM 09 OPT_TIM W 7	09 OPT_TIM W 7	Sets the HDMI output resolution to 1280×800@60Hz (WXGA).
	ATM 09 OPT_TIM W 8	09 OPT_TIM W 8	Sets the HDMI output resolution to 1024×768@60Hz (XGA).

Table 4-1 General Commands (Continued)

Function	Command	Feedback	Description
Audio input select	ATM 09 ADO_IPT W [1…7]	09 ADO_IPT W [1…7]	Route Audio Input [1…7] to audio outputs. **Example:** To route audio Input 4 to the audio outputs, use the command: `ATM 09 ADO_IPT W 4`
Audio volume control	ATM 09 VOL_CRL W 0	09 VOL_CRL W 0	Mute audio output.
	ATM 09 VOL_CRL W [1…9]	09 VOL_CRL W [1…9]	Set program audio output volume to [1…9].
	ATM 09 VOL_CRL W A	09 VOL_CRL W A	Set program audio output volume to 10.
	ATM 09 VOL_CRL W E	09 VOL_CRL W E	Increase program audio output by one increment.
	ATM 09 VOL_CRL W F	09 VOL_CRL W F	Decrease program audio output by one increment.
Audio Input Configuration	ATM 0A AUD_MOD W [1…6] [0 | 1]	0A AUD_MOD W [1…6] [0 | 1]	Set audio input [1…6] to Auto (embedded in HDMI/DP signal) (0) or External (1). **Example:** To select external audio on Input 3, use the command: `ATM 0A AUD_MOD W 3 1` **Note:** Input 7 always uses external audio.
Get Audio Input Configuration State	ATM 09 AUD_MOD R [1…6]	Port[1…6] Audio: [0(Auto) | 1(External)]	Report audio input configuration state for Input [1…6]. **Example:** To see the audio input configuration state of Input 4, use the command: `ATM 0A AUD_MOD R 4`

4.3.2 Layout Commands

Table 4-2 describes the *QuadView UHD* layout commands. These commands provide the same controls as those found on the *QuadView UHD* Web Controller **Layouts** page.

Note that these commands use hexadecimal values to refer to layout numbers; that is, 0A through 0F refer to layouts 10 through 15 (decimal), and 10 refers to layout 16 (decimal).

Table 4-2 Layout Commands

Function	Command	Feedback	Description
Recall Layout	ATM 0A SCR_LYT W [01…09]	0A SCR_LYT W [01…09]	Recall Layout [1…9].
	ATM 0A SCR_LYT W [0A…0F]	0A SCR_LYT W [0A…0F]	Recall Layout [10…15].
	ATM 0A SCR_LYT W 10	0A SCR_LYT W 10	Recall Layout 16.
	Example: To recall Layout 12, use the command: `ATM 0A SCR_LYT W 0C`		
Assign Layout to Button	ATM 0B LYT_MAP W [1…4] [01…09]	0B LYT_MAP W [1…4] [01…09]	Assign Layout [1…9] to layout button [1…4].
	ATM 0B LYT_MAP W [1…4] [0A…0F]	0B LYT_MAP W [1…4] [0A…0F]	Assign Layout [10…15] to layout button [1…4].
	ATM 0B LYT_MAP W [1…4] 10	0B LYT_MAP W [1…4] 10	Assign Layout 16 to layout button [1…4].

	Examples:
	To assign Layout 3 to layout button 2, use the command:
	`ATM 0B LYT_MAP W 2 03`
	To assign Layout 14 to layout button 3, use the command:
	`ATM 0B LYT_MAP W 3 0E`
	To assign Layout 16 to layout button 4, use the command:
	`ATM 0B LYT_MAP W 4 10`		

4.3.3 EDID Commands

Table 4-3 describes the *QuadView UHD* EDID commands. These commands provide the same controls as those found on the *QuadView UHD* Web Controller **EDID Management** page.

Table 4-3 EDID Commands

Function	Command	Feedback	Description
Copy Internal EDID to Input	ATM 0B EDI_POR W [1…7] C [1…6]	0B EDI_POR W [1…7] C [1…6]	Copy Internal EDID [1…6] to Input [1…7]. **Example:** To copy Internal EDID 1 to Input 3, use the command: `ATM 0B EDI_POR W 3 C 1`
Copy Custom (User-defined) EDID to Input	ATM 0B EDI_POR W [1…7] E [1…7]	0B EDI_POR W [1…7] E [1…7]	Copy Custom (User-defined) EDID [1…7] to Input [1…7] **Example:** To copy Custom (User-defined) EDID 2 to Input 3, use the command: `ATM 0B EDI_POR W 3 E 2`
Copy EDID from HDMI output to Input	ATM 09 EDI_CPY 1 [1…7]	09 EDI_CPY 1 [1…7]	Copy EDID from HDMI Output to Input [1…7].
Name Custom (User-defined) EDID	ATM 13 EDI_NAE W [1…7] [EDID__NAME]	13 EDI_NAE W [1…7] [EDID__NAME]	Name User-defined EDID [1…7] [EDID__NAME]. [EDID__NAME] can be up to 10 characters long and contain upper- or lower-case letters, numbers, the hyphen, or the underscore (_) character.

Read Custom (User-defined) EDID Name	ATM 09 EDI_NAE R [1…7]	Name of User-defined EDID [1…7]	Report name of User-defined EDID [1…7].
			Example: If Custom EDID 1 is named **rgb_custom**, this command…
			`ATM 09 EDI_NAE R 1`
			...returns:
			`rgb_custom`

Write uploaded EDID	ATM 09 EDI_EEP W [1…7]	09 EDI_EEP W [1…7]	Write uploaded EDID to Custom (User-defined) EDID register [1…7]. **Example:** To write an uploaded EDID to Custom EDID register 4, use the command: `ATM 09 EDI_EEP W 4`

Table 4-3 EDID Commands (Continued)

Function	Command	Feedback	Description
Read Custom (User-defined) EDID	ATM 09 EDI_EEP R [1…7]	[256-byte EDID]	Displays contents of Custom EDID register [1…7], in hexadecimal format.
Read EDID from Input	ATM 09 EDI_POR R [1…7]	[256-byte EDID]	Displays contents of Input [1…7] EDID register, in hexadecimal format.

4.3.4 Advanced Commands

Table 4-4 describes the *QuadView UHD* advanced commands. These commands provide the same controls as those found on the *QuadView UHD* Web Controller **Advanced** page.

Table 4-4 Advanced Commands

Function	Command	Feedback	Description
Standby/Normal mode	ATM 09 POW_CRL W 0	09 POW_CRL W 0	Switch from Standby to Normal mode. **Note:** The last character is a zero, not the letter “O.”
	ATM 09 POW_CRL W [1…F]	09 POW_CRL W [1…F]	Switch from Normal to Standby mode. **Note:** The last character can be any non-zero value.
	ATM 09 POW_WUP W 1	09 POW_WUP W 1	Switch from Standby to Normal mode. **Notes:** **1.** This command works only over a serial connection. **2.** If you send this command when the *QuadView UHD* is already in Normal mode, you get an “unknown command” message.

Table 4-4 Advanced Commands (Continued)

Function	Command	Feedback	Description
Power saving	ATM 0A POW_SAV W 00	0A POW_SAV W 00	Disable Power Saving.
	ATM 0A POW_SAV W 05	0A POW_SAV W 05	Automatically enter Power Saving mode when no input signal is present for 5 minutes.
	ATM 0A POW_SAV W 0A	0A POW_SAV W 0A	Automatically enter Power Saving mode when no input signal is present for 10 minutes.
	ATM 0A POW_SAV W 0F	0A POW_SAV W 0F	Automatically enter Power Saving mode when no input signal is present for 15 minutes.
	ATM 0A POW_SAV W 1E	0A POW_SAV W 1E	Automatically enter Power Saving mode when no input signal is present for 30 minutes.
	ATM 0A POW_SAV W 3C	0A POW_SAV W 3C	Automatically enter Power Saving mode when no input signal is present for 60 minutes.
Audio Mute	ATM 09 AUD_MUT W 0	09 AUD_MUT W 0	Mute the audio output.
	ATM 09 AUD_MUT W F	09 AUD_MUT W F	Un-mute the audio output.
Audio Delay	ATM 09 AUD_DLY W 0	09 AUD_DLY W 0	Set audio delay time to 0 ms (no delay).
	ATM 09 AUD_DLY W 1	09 AUD_DLY W 1	Set audio delay time to 40 ms.
	ATM 09 AUD_DLY W 2	09 AUD_DLY W 2	Set audio delay time to 80 ms.
	ATM 09 AUD_DLY W 3	09 AUD_DLY W 3	Set audio delay time to 120 ms.
	ATM 09 AUD_DLY W 4	09 AUD_DLY W 4	Set audio delay time to 160 ms.
	ATM 09 AUD_DLY W 5	09 AUD_DLY W 5	Set audio delay time to 200 ms.
	ATM 09 AUD_DLY W 6	09 AUD_DLY W 6	Set audio delay time to 240 ms.
	ATM 09 AUD_DLY W 7	09 AUD_DLY W 7	Set audio delay time to 280 ms.
	ATM 09 AUD_DLY W 8	09 AUD_DLY W 8	Set audio delay time to 320 ms.
	ATM 09 AUD_DLY W 9	09 AUD_DLY W 9	Set audio delay time to 360 ms.
	ATM 09 AUD_DLY W A	09 AUD_DLY W A	Set audio delay time to 400 ms.
VGA Input Auto-Position	ATM 08 VGA_AUT W	08 VGA_AUT W	Optimize position, clock, and phase of VGA input signals.

Table 4-4 Advanced Commands (Continued)

Function	Command	Feedback	Description
OSD Messages	ATM 09 AUD_OSD W [0 | 1]	09 AUD_OSD W [0 | 1]	Enable/disable audio volume and mute OSD indications. 0: audio OSD on; 1: audio OSD off
	ATM 09 VDO_OSD W [0 | 1]	09 VDO_OSD W [0 | 1]	Enable/disable video source and IP address OSD indications. 0: video OSD on; 1: video OSD off
HDMI output audio control	ATM 09 AUD_OPT W [0 | 1]	09 AUD_OPT W [0 | 1]	Mute/Unmute HDMI embedded audio. 0: Mute; 1: Unmute
Restore Default Setting	ATM 08 RST_SET W	08 RST_SET W	Reset to factory default settings.
Set Baud Rate	ATM 09 BAU_RAT W 1	09 BAU_RAT W 1	Set serial baud rate to 9600.
	ATM 09 BAU_RAT W 2	09 BAU_RAT W 2	Set serial baud rate to 14400.
	ATM 09 BAU_RAT W 3	09 BAU_RAT W 3	Set serial baud rate to 19200.
	ATM 09 BAU_RAT W 4	09 BAU_RAT W 4	Set serial baud rate to 38400.
	ATM 09 BAU_RAT W 5	09 BAU_RAT W 5	Set serial baud rate to 56000.
	ATM 09 BAU_RAT W 6	09 BAU_RAT W 6	Set serial baud rate to 57600.
	ATM 09 BAU_RAT W 7	09 BAU_RAT W 7	Set serial baud rate to 115200.
Others	ATM 08 CSW_VER W	08 CSW_VER W [Firmware version] [Build Date]	Reports *QuadView UHD* firmware version and build date.
	ATM 09 SYS_UPT W 1	09 SYS_UPT W 1	Update *QuadView UHD* firmware using file stored on connected USB storage device.
	ATM 09 HDC_POO W [0 | 1]	09 HDC_POO W [0 | 1]	Enable/disable HDCP and reboot the *QuadView UHD*. 0: HDCP off; 1: HDCP on
	ATM 08 HDC_POO R	08 HDC_POO R HDCP: [ON | OFF]	Reports HDCP status.

CHAPTER 5

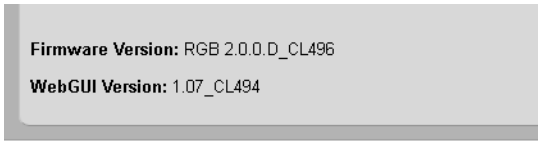
FIRMWARE UPDATES

From time to time, RGB Spectrum updates product firmware to add new features or improve product performance.

To check for firmware updates for your RGB Spectrum product, visit the **Partner Portal** section of our web site (**http://www.rgb.com/partners/**). (Registration and log-in are required.) Or, visit the applicable Products page (for example, **http://www.rgb.com/products/quadview-uhd-multiviewer**) and select "Downloads."

To determine your current firmware version number, do either of the following:

- Using the *QuadView UHD* Web Controller, select **Advanced** (the firmware and Web Controller versions appear at the bottom of the page); or



- Send the ASCII command `ATM 08 CSW_VER W` from a PC or other controller via the LAN or RS-232 interface.

To update your *QuadView UHD* firmware.

1. Copy the update file **MERGE.bin** to the root directory of a USB drive.
2. Connect the USB drive to the USB port on the *QuadView UHD* rear panel.
3. Connect an HDMI display to the *QuadView UHD*.
4. Turn on the *QuadView UHD*. The display device displays the HDMI output signal after normal boot of the device.
5. Press and hold the **INPUT 1** button for at least five seconds;

   – OR –

   Send the ASCII command `ATM 09 SYS_UPT W 1` from a PC or other controller via the LAN or RS-232 interface.

   To indicate a firmware update in progress, "System upgrading…" appears on the display device, and all of the front-panel button indicators blink.

6. After approximately 90 seconds, the *QuadView UHD* reboots automatically. After it finishes rebooting, turn off the unit using the rear-panel power switch (see **Figure 1-2**).
7. When the front-panel indicators turn off (indicating a full power-down state), restart the *QuadView UHD*. The firmware update is complete.

CHAPTER 6

CONTACT INFORMATION

6.1 Corporate Headquarters

RGB Spectrum
950 Marina Village Parkway
Alameda, CA 94501

Phone: +1-510-814-7000

Fax: +1-510-814-7026

Web: **http://www.rgb.com**

6.2 Sales and Product Information

Web: **http://www.rgb.com/contact**

Phone: +1-510-814-7000, option 3

6.3 Technical Support

Email: **tech@rgb.com**

Phone: +1-510-814-7000, option 1

Web: **http://www.rgb.com/support**