



# **XtendPoint™**

*KVM-over-IP*

## **User Guide**

September, 2020

RGB Spectrum  
950 Marina Village Parkway  
Alameda, CA 94501



---

## DOCUMENT

- *XtendPoint™ User Guide*
- 350-12345-01
- September, 2020

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

- *XtendPoint* firmware: 3.01.00
- *XtendPoint Central Manager* application: 3.01.00

## COPYRIGHT

© 2020 RGB Spectrum, Inc. All rights reserved.

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

- *XtendPoint* is a trademark of RGB Spectrum, Inc.
- *KlickSimple* is a trademark of RGB Spectrum, Inc.
- The RGB logo is a trademark of RGB Spectrum in the United States and other countries.

## NOTICE

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

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

Windows is a registered trademark of the Microsoft group of companies.  
HDMI is a registered trademark of HDMI Licensing LLC.  
SD, SDHC and SDXC Logos are trademarks of SD-3C, LLC.



---

## 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](mailto:tech@rgb.com) or call (510) 814-7000.

## IMPORTANT SAFETY INSTRUCTIONS

Thank you for your purchase of this quality RGB Spectrum product! To reduce the risk of fire, electric shock or product damage, please note the following:

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Install and use this apparatus in accordance with the manufacturer's instructions.



- Do not expose this apparatus to rain or moisture. Do not place liquid-filled objects, such as vases, on the apparatus.
- 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.
- Do not place any sources of open flames, such as candles, on the apparatus.
- 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.
- Keep the packing material in case the equipment should ever need to be shipped.





# TABLE OF CONTENTS

<b>CHAPTER 1</b>	<b>INTRODUCTION -----</b>	<b>1</b>
1.1	Features and Benefits .....	2
1.1.1	System Features .....	2
1.1.2	Devices .....	2
1.1.3	Control .....	2
1.2	System Control .....	3
1.3	Controls, Indicators, and Connectors .....	3
1.3.1	XtendPoint Two-Port Transmitter .....	3
	Front Panel .....	3
	Rear Panel .....	5
1.3.2	XtendPoint Two-Port Receiver .....	6
	Front Panel .....	6
	Rear Panel .....	8
1.3.3	XtendPoint Four-Port Transmitter .....	9
	Front Panel .....	9
	Rear Panel .....	10
1.3.4	XtendPoint Four-Port Receiver .....	12
	Front Panel .....	12
	Rear Panel .....	13
1.4	Specifications .....	14
1.4.1	XtendPoint Two-Port Transmitter .....	14
1.4.2	XtendPoint Two-Port Receiver .....	16
1.4.3	XtendPoint Four-Port Transmitter .....	17
1.4.4	XtendPoint Four-Port Receiver .....	19
1.5	Maximum Distances (Point-to-Point Mode) .....	20
<b>CHAPTER 2</b>	<b>INSTALLATION -----</b>	<b>21</b>
2.1	Mounting an XtendPoint device .....	21
2.2	Cooling an XtendPoint device .....	22
2.3	Connection Overview .....	23
2.3.1	Networked Mode Setup .....	23
2.3.2	Point-to-Point Mode Setup .....	23
2.3.3	Supported Monitor Adapters .....	24
2.3.4	Output Capabilities .....	24



2.4	Connections (Receiver)	25
2.4.1	USB	26
2.4.2	Audio	26
2.4.3	Video	27
2.4.4	RS232	27
2.4.5	Network (LAN2)	27
2.4.6	Network (LAN1)	28
2.4.7	Power	28
2.5	Connections (Transmitter)	29
2.5.1	Video Out	31
2.5.2	USB	31
2.5.3	Video In	31
2.5.4	Audio	31
2.5.5	RS232	32
2.5.6	Network (LAN2)	32
2.5.7	Network (LAN1)	32
2.5.8	Power	33
2.6	Using an SFP Module	33
2.6.1	Installation	33
2.6.2	Removal	33

## **CHAPTER 3                    OSD OPERATION (NETWORKED MODE) - - - - - 35**

3.1	Prerequisites	35
3.2	Available Software	36
3.3	Validating Network Discovery	36
3.4	Accessing the OSD	37
3.5	Sources Tab	38
3.6	Receiver Tab	40
3.6.1	Audio Sub-Tab	40
3.6.2	Monitors Sub-Tab	41
3.6.3	Keyboard Shortcuts Sub-Tab	42
3.7	Aggregator Mode	43
3.7.1	Prerequisites	43
3.7.2	Configuring Aggregator Mode	44
3.7.3	Editing Layout Video Streams	45
3.7.4	Removing a Layout Video Stream	45
3.7.5	Removing a Layout	45

## **CHAPTER 4                    OSD OPERATION (POINT-TO-POINT MODE) - - - 47**

4.1	Prerequisites	47
4.2	Available Software	48
4.3	Accessing the OSD	48
4.4	Sources Tab	49
4.5	Receiver Tab	50
4.5.1	Audio Sub-Tab	51
4.5.2	Monitors Sub-Tab	52
4.5.3	RS232 Sub-Tab	53
4.5.4	OSD Access Sub-Tab	54
4.5.5	More Options Sub-Tab	55



---

## **CHAPTER 5                    LINK REDUNDANCY   - - - - - 57**

5.1	Prerequisites .....	57
5.2	Enabling Link Redundancy .....	58
5.3	Disabling Link Redundancy .....	58

## **CHAPTER 6                    XTENDPOINT CENTRAL MANAGER APPLICATION 59**

6.1	Prerequisites .....	59
6.2	Installation .....	60
6.3	Accessing the Application .....	60
6.3.1	Logging Out .....	60
6.3.2	User Access Levels .....	61
	XtendPoint Administrator .....	61
	Local Users .....	61
6.3.3	Domain users .....	61
6.4	Interface .....	62
6.4.1	Main Menu .....	63
6.4.2	Shortcut Menu .....	63
6.4.3	Basic Functions .....	64
6.5	XtendPoint Devices .....	64
6.5.1	Device Groups .....	64
6.5.2	Device Tiles .....	65
	Managing Device Tiles .....	65
	Filtering Device Tiles .....	66
	Showing Details .....	66
6.5.3	Information Dashboard .....	66
6.5.4	Device Tile and Border Colors .....	66
	Device Status .....	66
	User Access Privileges .....	67
6.6.1	Quick Device Setup .....	68
6.6.2	Full Device Setup .....	68
6.6	Device Setup .....	68
6.7	Manual Device Discovery .....	69
6.8	Connection Broker .....	70
6.8.1	Connection Broker Icons .....	71
6.8.2	Allowing Device Connections .....	71
6.9	Managing Users .....	72
6.9.1	Adding a User .....	72
6.9.2	Deleting a User .....	73
6.9.3	Overwriting a Password .....	73
6.9.4	Granting User Privileges .....	73
6.9.5	Automatic Log In .....	73
6.10	Transmitter Settings .....	74
6.10.1	Connection .....	74
6.10.2	EDID .....	75
	Using a Cached EDID .....	75
	Using a Fixed EDID .....	75
	Using the EDID from a File .....	76
	Reporting No Monitor .....	76
	Using the Current EDID .....	76



---

6.10.3	Streaming .....	77
6.10.4	Exporting XtendPoint Stream Addresses .....	77
6.10.5	Network .....	78
	Enabling Link Redundancy .....	78
	IP Addressing .....	78
6.10.6	Date and Time .....	79
6.10.7	More Options .....	80
6.11	Receiver Settings .....	81
6.11.1	Connection .....	82
6.11.2	Monitors .....	83
	Exporting EDID Settings .....	83
6.11.3	USB .....	84
6.11.4	Audio .....	85
6.11.5	Transmitter Discovery .....	86
6.11.6	Network .....	86
	Enabling Link Redundancy .....	87
	IP Addressing .....	87
6.11.7	Date and Time .....	88
6.11.8	RS232 .....	88
6.11.9	Keyboard Shortcuts .....	89
	OSD Access .....	89
	USB Switching .....	90
	Switching Transmitters .....	90
	Removing Keyboard Shortcuts .....	90
6.11.10	More Options .....	91
6.12	Exporting and Import Device Settings .....	92
6.12.1	Exporting Device Settings .....	92
6.12.2	Importing Device Settings .....	92
6.13	Device Date and Time .....	93
<b>CHAPTER 7</b>	<b>CONFIGURING AUDIO SETTINGS - - - - -</b>	<b>95</b>
7.1	XtendPoint Receiver Output .....	95
7.2	XtendPoint Receiver Input .....	96
7.3	XtendPoint Receiver Audio Destination .....	97
<b>CHAPTER 8</b>	<b>SOFTWARE &amp; FIRMWARE UPDATES - - - - -</b>	<b>99</b>
8.2	Firmware Update (Networked Mode) .....	100
8.1	Before Updating the Firmware .....	100
8.3	Firmware Update (Point-to-Point Mode) .....	101
<b>CHAPTER 9</b>	<b>MAINTENANCE &amp; TROUBLESHOOTING - - - - -</b>	<b>103</b>
9.1	Rebooting/Resetting an XtendPoint Device .....	103
9.2	Troubleshooting .....	104
9.3	Changing the Device Operation Mode .....	107



---

<b>CHAPTER 10</b>	<b>FIREWALL SETTINGS</b>	<b>-----109</b>
	10.1 Ports	109
<b>CHAPTER 11</b>	<b>CONTACT INFORMATION</b>	<b>-----111</b>
	11.1 Corporate Headquarters	111
	11.2 Sales and Product Information	111
	11.3 Technical Support	111



---

*This page intentionally left blank.*

# LIST OF FIGURES

Figure 1-1	XtendPoint Two-Port Transmitter - Front Panel .....	3
Figure 1-2	XtendPoint Two-Port Transmitter - Rear Panel .....	5
Figure 1-3	XtendPoint Two-Port Receiver - Front Panel .....	6
Figure 1-4	XtendPoint Two-Port Receiver - Rear Panel .....	8
Figure 1-5	XtendPoint Four-Port Transmitter - Front Panel .....	9
Figure 1-6	XtendPoint Four-Port Transmitter - Rear Panel .....	10
Figure 1-7	XtendPoint Four-Port Receiver - Front Panel .....	12
Figure 1-8	XtendPoint Four-Port Receiver - Rear Panel .....	13
Figure 2-1	Rack Mounting Shelf .....	21
Figure 2-2	XtendPoint Four-Port Receiver Front Connections .....	25
Figure 2-3	XtendPoint Four-Port Receiver Rear Connections .....	26
Figure 2-4	XtendPoint Four-Port Transmitter Front Connections .....	29
Figure 2-5	XtendPoint Four-Port Transmitter Rear Connections .....	30
Figure 3-1	XtendPoint in Networked Mode .....	35
Figure 3-2	OSD Sources Tab (Networked Mode) .....	38
Figure 3-3	Audio Sub-Tab .....	40
Figure 3-4	Monitors Sub-Tab .....	41
Figure 3-5	Keyboard Shortcuts Sub-tab .....	42
Figure 3-6	XtendPoint Receiver in Aggregator Mode .....	43
Figure 4-1	XtendPoint in Point-to-Point Mode .....	47
Figure 4-2	OSD Startup Screen .....	48
Figure 4-3	OSD Sources Tab (Point-to-Point Mode) .....	49
Figure 4-4	Audio Sub-Tab .....	51
Figure 4-5	Monitors Sub-Tab .....	52
Figure 4-6	RS232 Sub-Tab .....	53
Figure 4-7	OSD Access Sub-tab .....	54
Figure 4-8	More Options Sub-tab .....	55
Figure 5-1	Redundant Network Connections .....	57
Figure 6-1	XtendPoint Central Manager Interface .....	62
Figure 6-2	XtendPoint Device Tile .....	65
Figure 6-3	Information Dashboard .....	66
Figure 6-4	Quick Setup Window (right) .....	68
Figure 6-5	Device Discovery Window (right) .....	70
Figure 6-6	Connection Broker .....	70
Figure 6-7	User Privileges Example .....	73
Figure 6-8	Sharing Mode Screen .....	74
Figure 6-9	EDID Management Window .....	75
Figure 6-10	Streaming Settings Window .....	77
Figure 6-11	Network Settings Screen .....	78
Figure 6-12	Date and Time Screen .....	79
Figure 6-13	More Options Screen .....	80



---

Figure 6-14	Connection Status Screen .....	82
Figure 6-15	Monitor Settings Screen .....	83
Figure 6-16	USB Device Management Screen .....	84
Figure 6-17	Audio Settings Screen .....	85
Figure 6-18	Discovery Status of Transmitters Screen .....	86
Figure 6-19	Network Settings Screen .....	86
Figure 6-20	Date and Time Screen .....	88
Figure 6-21	RS232 Virtualization Screen .....	88
Figure 6-22	Keyboard Shortcut Customization Screen .....	89
Figure 6-23	More Options Screen .....	91
Figure 9-1	RESET Switch .....	104



# LIST OF TABLES

Table 1-1	XtendPoint Two-Port Transmitter - Front Panel .....	4
Table 1-2	XtendPoint Two-Port Transmitter - Rear Panel .....	5
Table 1-3	XtendPoint Two-Port Receiver - Front Panel .....	7
Table 1-4	XtendPoint Two-Port Receiver - Rear Panel .....	8
Table 1-5	XtendPoint Four-Port Transmitter - Front Panel .....	9
Table 1-6	XtendPoint Four-Port Transmitter - Rear Panel .....	10
Table 1-7	XtendPoint Four-Port Receiver - Front Panel .....	12
Table 1-8	XtendPoint Four-Port Receiver - Rear Panel .....	13
Table 1-9	Specifications - XtendPoint Two-Port Transmitter .....	14
Table 1-10	Specifications - XtendPoint Two-Port Receiver .....	16
Table 1-11	Specifications - XtendPoint Four-Port Transmitter .....	17
Table 1-12	Specifications - XtendPoint Four-Port Receiver .....	19
Table 2-1	Output Capabilities .....	24
Table 2-2	Video Connections .....	27
Table 2-3	Video In Connections .....	31
Table 6-1	Connection Broker Icons .....	71
Table 7-1	XtendPoint receiver Output Settings .....	95
Table 7-2	XtendPoint receiver Input Settings .....	96
Table 7-3	XtendPoint receiver Audio Destination Settings .....	97
Table 9-1	Troubleshooting .....	105
Table 10-1	TCP/UDP Ports Used by XtendPoint .....	109



*This page intentionally left blank.*



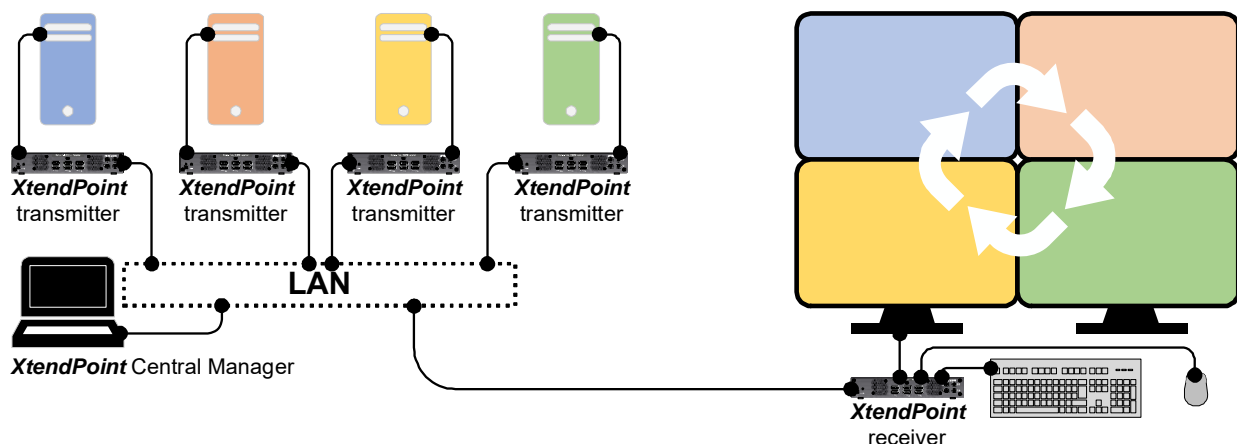
# CHAPTER 1

# INTRODUCTION

The RGB Spectrum *XtendPoint* is a KVM-over-IP extender that enables remote control of devices across the enterprise. The scalable *XtendPoint* KVM-over-IP matrix switching architecture delivers outstanding 4Kp60 4:4:4 UHD visual performance and excellent keyboard and mouse responsiveness over a LAN or WAN with latency as low as 40 milliseconds. Users can view and operate one or more computer systems in a one-to-one, one-to-many, or many-to-many configuration from a remote station using a single keyboard and mouse without installing any software. A single endpoint can even support dual- and quad-monitor configurations.

*XtendPoint* leverages existing networking equipment by transmitting up to four video signals plus audio and USB keyboard/mouse control over a single copper or fiber optic cable in a standard 1Gb Ethernet infrastructure.

The *XtendPoint Central Manager* application provides simple, secure control for users to easily discover, configure, manage, and monitor all transmitter and receiver endpoints. Users can view connections on a system level and switch control of computers using an advanced on-screen-display (OSD) that features thumbnail previews. The *XtendPoint Central Manager* application handles user authentication and privileges using either an internal user management system or Microsoft Active Directory Services. The system uses the secure HTTPS communication protocol and encrypts all audio, video, and USB signals.





## 1.1 Features and Benefits

*XtendPoint* provides these key features and functions:

### 1.1.1 System Features

- Control up to four (4) remote computers at once from a single location.
- *KlickSimple*™ cursor navigation mode allows you to control a remote computer in Aggregator mode by simply mousing over the desired display.
- Provides exceptional performance with low bitrates and minimal latency.
- Available as a standalone device.
- Standard Gigabit Ethernet connectivity uses your existing network infrastructure.
- Usable with either CATx or fiber optic network cables.
- Supports DisplayPort 1.1 and 1.2, USB 2.0, analog or digital stereo audio, and RS232 connections.
- AES-128 HTTPS encryption protocol secures all audio, video, and USB signals.
- Controllable via both on-screen display and the *XtendPoint Central Manager* application.

### 1.1.2 Devices

RGB Spectrum offers the following *XtendPoint* devices:

- **Two-port transmitter:** Transmits up to two (2) video signals, audio, USB, and RS232 via either one or two Gigabit Ethernet connections. Part number XP 102 TX. See [“\*XtendPoint Two-Port Transmitter\*” on page 3](#).
- **Two-port receiver:** Receives up to two (2) video signals, audio, USB, and RS232 over either one or two Gigabit Ethernet connections, and displays up to two (2) video outputs. Part number XP 102 RX. See [“\*XtendPoint Two-Port Receiver\*” on page 6](#).
- **Four-port transmitter:** Transmits up to four (4) video signals, audio, USB, and RS232 via either one or two Gigabit Ethernet connections. Part number XP 104 TX. See [“\*XtendPoint Four-Port Transmitter\*” on page 9](#).
- **Four-port receiver:** Receives up to four (4) video signals, audio, USB, and RS232 over either one or two Gigabit Ethernet connections, and displays up to four (4) video outputs. Part number XP 104 RX. See [“\*XtendPoint Four-Port Receiver\*” on page 12](#).

### 1.1.3 Control

- Keyboard and mouse.
- On-screen display (OSD)
- *XtendPoint Central Manager* application.



## 1.2 System Control

The Ethernet port(s) provide system control for *XtendPoint* by connecting transmitters and receivers as follows:

- Networked mode:
  - ◆ Single network switch (standard or aggregator Network mode).
  - ◆ Dual network switched (standard or aggregator Network mode with link redundancy)
- Directly to each other (Point to Point mode).

## 1.3 Controls, Indicators, and Connectors

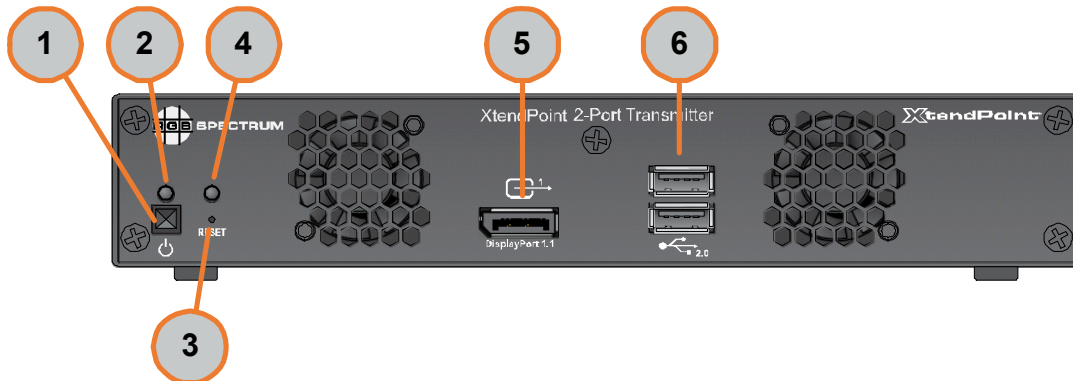
This section describes the front and rear panel controls, indicators, and connections on *XtendPoint* devices.

### 1.3.1 *XtendPoint* Two-Port Transmitter

This section describes the front and rear panel controls, indicators, and connections on an *XtendPoint* two-port transmitter.

#### FRONT PANEL

[Figure 1-1](#) shows the connectors and indicators on the front panel of an *XtendPoint* two-port transmitter, and [Table 1-1](#) describes them.



**Figure 1-1** *XtendPoint* Two-Port Transmitter - Front Panel

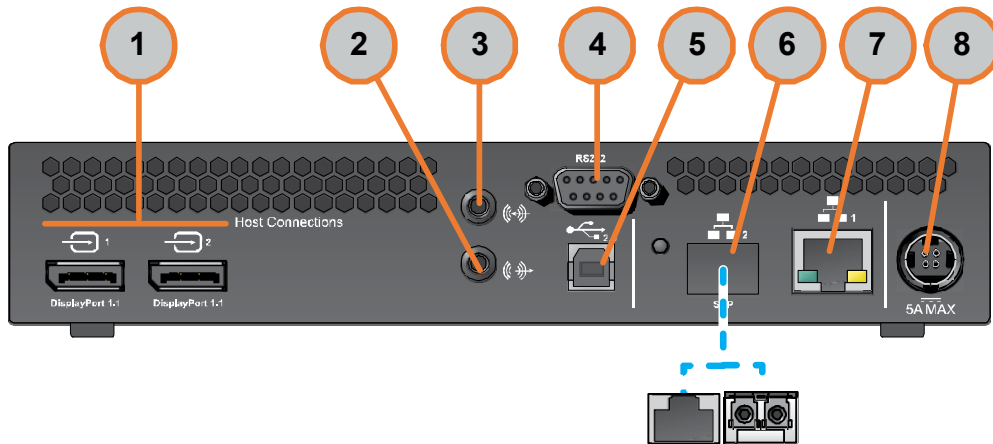


**Table 1-1** *XtendPoint* Two-Port Transmitter - Front Panel

ID	Name	Description
1	POWER switch.	Turns the device on or off.
2	POWER LED	Indicates the current device status as follows: <ul style="list-style-type: none"><li>◆ <b>Off</b>: Device is not receiving power.</li><li>◆ <b>Green (standby)</b>: Device is turned off but still has power.</li><li>◆ <b>Green (solid)</b>: Device is active.</li><li>◆ <b>Green (slow blink)</b>: Device is restarting.</li><li>◆ <b>Green (fast blink)</b>: Device configuration is resetting.</li><li>◆ <b>Amber (solid)</b>: Device is in Maintenance mode.</li><li>◆ <b>Amber (slow blink)</b>: Device is in Maintenance mode and is restarting.</li><li>◆ <b>Amber (fast blink)</b>: Device firmware update in progress.</li><li>◆ <b>Red (fast blink)</b>: Driver error detected.</li></ul>
3	RESET switch	Resets the device configuration. See <a href="#">“Rebooting/Resetting an XtendPoint Device” on page 103</a> .
4	STATUS LED	Indicates the current device status as follows: <ul style="list-style-type: none"><li>◆ <b>Green (solid)</b>: Software is ready.</li><li>◆ <b>Amber (fast blink)</b>: USB is not connected.</li><li>◆ <b>Red (solid)</b>: No monitor detected.</li><li>◆ <b>Red (slow blink)</b>: No network connection, or invalid network cable connection.</li><li>◆ <b>Red (fast blink)</b>: Fatal error.</li></ul>
5	Video Out	If desired, connect a local digital monitor to this port for use as a console display. Shielded DisplayPort cable is required.
6	USB 2.0	These ports are not used; only use the rear USB ports.

## REAR PANEL

**Figure 1-2** shows the connectors and indicators on the rear panel of an *XtendPoint* two-port transmitter, and **Table 1-2** describes them.



**Figure 1-2** *XtendPoint* Two-Port Transmitter - Rear Panel

**Table 1-2** *XtendPoint* Two-Port Transmitter - Rear Panel

ID	Name	Description
1	Video In.	Connect to the video output(s) on the source computer. Shielded DisplayPort cable is required.
2	Line In	Connect to either: <ul style="list-style-type: none"> <li>◆ The <b>LINE OUT</b> connector of the host computer.</li> <li>◆ Another audio source.</li> </ul>
3	Line Out	Connect to either: <ul style="list-style-type: none"> <li>◆ The <b>LINE IN</b> connector of the host computer.</li> <li>◆ Another audio source.</li> </ul>
4	RS232	Connect to an RS232 device to be controlled from the Receiver.
5	USB 2.0	Connect the host computer here.
6	LAN2	Optional. Connect an SFP module (either RJ45 or LC-LC; not sold by RGB Spectrum). See <a href="#">“Using an SFP Module” on page 33</a> . This LAN port includes an LED that indicates the following: <ul style="list-style-type: none"> <li>◆ <b>Off</b>: No power.</li> <li>◆ <b>Green (solid)</b>: Network activity detected.</li> <li>◆ <b>Green (fast blink)</b>: Data transfer in progress.</li> <li>◆ <b>Amber (solid)</b>: No transceiver detected.</li> <li>◆ <b>Red (solid)</b>: Error establishing communications. Verify all network connections, and then restart the device, as described in <a href="#">“Rebooting/Resetting an XtendPoint Device” on page 103</a>.</li> </ul>

**Table 1-2** *XtendPoint* Two-Port Transmitter - Rear Panel (Continued)

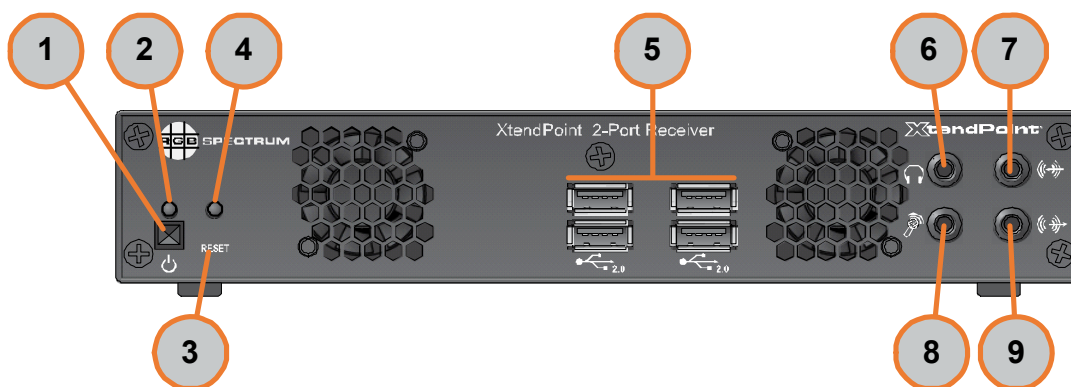
ID	Name	Description
7	LAN1	Connect an RJ45 CATX cable. This LAN port has the following LEDs: <ul style="list-style-type: none"> <li>◆ <b>Activity (green; left):</b> This light blinks rapidly when the network is active.</li> <li>◆ <b>Speed (amber; right):</b> This light illuminates when network speed is 100Mbps; it is off when network speed is 1Gbps.</li> </ul>
8	Power	Connect the 12V DC power supply here.

### 1.3.2 *XtendPoint* Two-Port Receiver

This section describes the front and rear panel controls, indicators, and connections on an *XtendPoint* two-port receiver.

#### FRONT PANEL

[Figure 1-3](#) shows the connectors and indicators on the front panel of an *XtendPoint* two-port receiver, and [Table 1-3](#) describes them.



**Figure 1-3** *XtendPoint* Two-Port Receiver - Front Panel



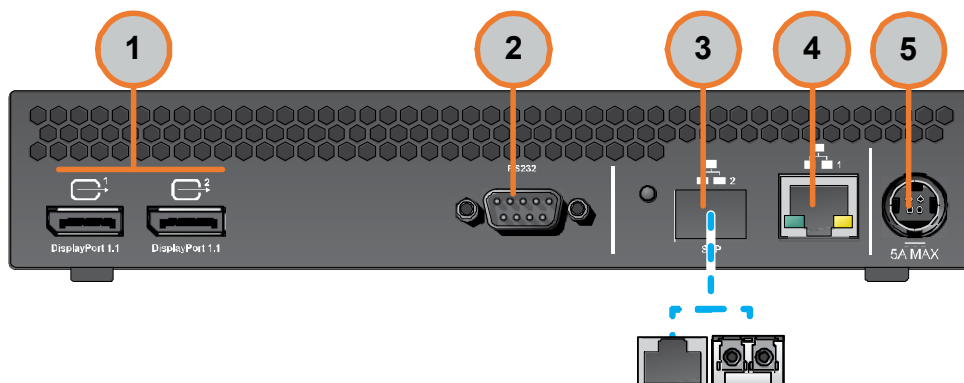


**Table 1-3** *XtendPoint* Two-Port Receiver - Front Panel

ID	Name	Description
1	POWER switch.	Turns the device on or off.
2	POWER LED	Indicates the current device status as follows: <ul style="list-style-type: none"> <li>◆ <b>Off</b>: Device is not receiving power.</li> <li>◆ <b>Green (standby)</b>: Device is turned off but still has power.</li> <li>◆ <b>Green (solid)</b>: Device is active.</li> <li>◆ <b>Green (slow blink)</b>: Device is restarting.</li> <li>◆ <b>Green (fast blink)</b>: Device configuration is resetting.</li> <li>◆ <b>Amber (solid)</b>: Device is in Maintenance mode.</li> <li>◆ <b>Amber (slow blink)</b>: Device is in Maintenance mode and is restarting.</li> <li>◆ <b>Amber (fast blink)</b>: Device firmware update in progress.</li> <li>◆ <b>Red (fast blink)</b>: Driver error detected.</li> </ul>
3	RESET switch	Resets the device configuration. See <a href="#">“Rebooting/Resetting an XtendPoint Device” on page 103</a> .
4	STATUS LED	Indicates the current device status as follows: <ul style="list-style-type: none"> <li>◆ <b>Green (solid)</b>: Software is ready.</li> <li>◆ <b>Amber (fast blink)</b>: USB is not connected.</li> <li>◆ <b>Red (solid)</b>: No monitor detected.</li> <li>◆ <b>Red (slow blink)</b>: No network connection, or invalid network cable connection.</li> <li>◆ <b>Red (fast blink)</b>: Fatal error.</li> </ul>
5	USB 2.0	Connect one or more USB device(s) here. You may connect: <ul style="list-style-type: none"> <li>◆ Keyboard</li> <li>◆ Mouse</li> </ul> USB and/or CAC drive(s)
6	Headphone	Connect a set of headphones to this connector.
7	Line in	Connect to the <b>LINE OUT</b> connector on an audio source.
8	Microphone	Connect a microphone to this connector.
9	Line Out	Connect to the <b>LINE IN</b> connector on an audio source.

## REAR PANEL

**Figure 1-4** shows the connectors and indicators on the rear panel of an *XtendPoint* two-port receiver, and **Table 1-4** describes them.



**Figure 1-4** *XtendPoint* Two-Port Receiver - Rear Panel

**Table 1-4** *XtendPoint* Two-Point Receiver - Rear Panel

ID	Name	Description
1	Video Out	Connect to the monitor(s) you will use to control the remote computer(s).
2	RS232	Connect to an RS232 device to be controlled from the Receiver.
3	LAN2	Optional. Connect an SFP module (either RJ45 or LC-LC; not sold by RGB Spectrum). See <a href="#">“Using an SFP Module” on page 33</a> . This LAN port includes an LED that indicates the following: <ul style="list-style-type: none"> <li>◆ <b>Off</b>: No power.</li> <li>◆ <b>Green (solid)</b>: Network activity detected.</li> <li>◆ <b>Green (fast blink)</b>: Data transfer in progress.</li> <li>◆ <b>Amber (solid)</b>: No transceiver detected.</li> <li>◆ <b>Red (solid)</b>: Error establishing communications. Verify all network connections, and then restart the device, as described in <a href="#">“Rebooting/Resetting an XtendPoint Device” on page 103</a>.</li> </ul>
4	LAN1	Connect an RJ45 CATX cable. This LAN port has the following LEDs: <ul style="list-style-type: none"> <li>◆ <b>Activity (green; left)</b>: This light blinks rapidly when the network is active.</li> <li>◆ <b>Speed (amber; right)</b>: This light illuminates when network speed is 100Mbps; it is off when network speed is 1Gbps.</li> </ul>
5	Power	Connect the 12V DC power supply here.

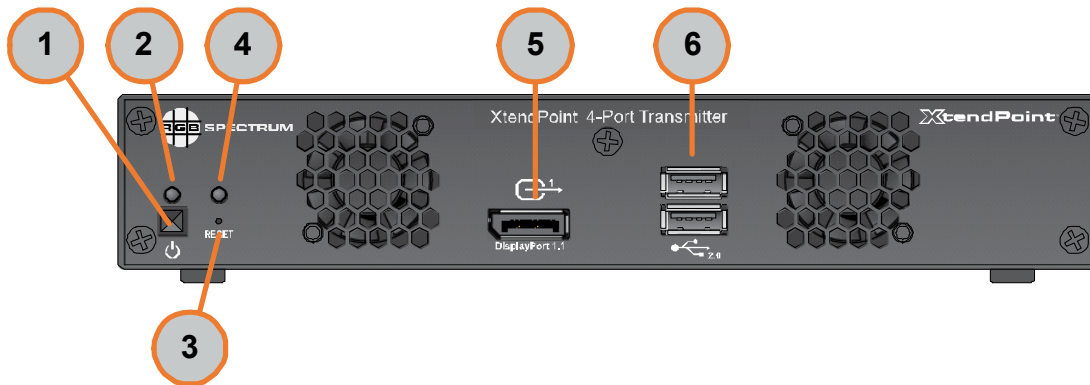


### 1.3.3 XtendPoint Four-Port Transmitter

This section describes the front and rear panel controls, indicators, and connections on an XtendPoint four-port transmitter.

#### FRONT PANEL

[Figure 1-5](#) shows the connectors and indicators on the front panel of an XtendPoint four-port transmitter, and [Table 1-5](#) describes them.



**Figure 1-5** XtendPoint Four-Port Transmitter - Front Panel

**Table 1-5** XtendPoint Four-Port Transmitter - Front Panel

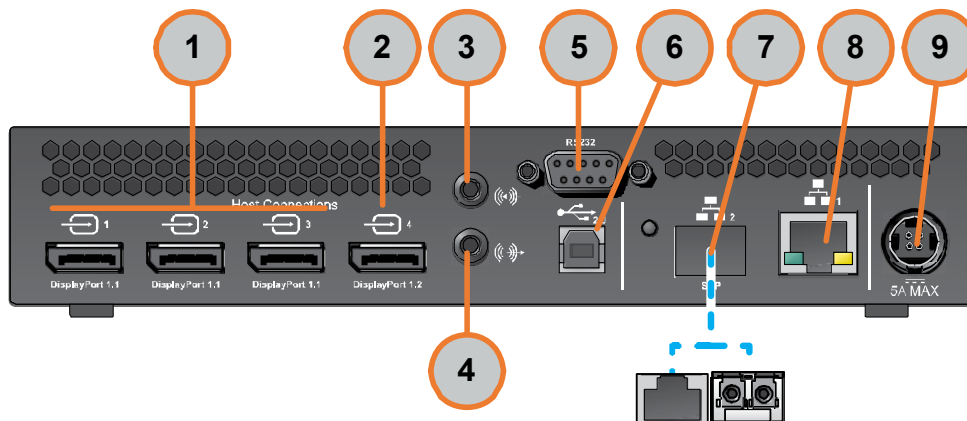
ID	Name	Description
1	POWER switch.	Turns the device on or off.
2	POWER LED	Indicates the current device status as follows: <ul style="list-style-type: none"> <li>◆ <b>Off:</b> Device is not receiving power.</li> <li>◆ <b>Green (standby):</b> Device is turned off but still has power.</li> <li>◆ <b>Green (solid):</b> Device is active.</li> <li>◆ <b>Green (slow blink):</b> Device is restarting.</li> <li>◆ <b>Green (fast blink):</b> Device configuration is resetting.</li> <li>◆ <b>Amber (solid):</b> Device is in Maintenance mode.</li> <li>◆ <b>Amber (slow blink):</b> Device is in Maintenance mode and is restarting.</li> <li>◆ <b>Amber (fast blink):</b> Device firmware update in progress.</li> <li>◆ <b>Red (fast blink):</b> Driver error detected.</li> </ul>
3	RESET switch	Resets the device configuration. See <a href="#">“Rebooting/Resetting an XtendPoint Device” on page 103.</a>

**Table 1-5** *XtendPoint* Four-Port Transmitter - Front Panel (Continued)

ID	Name	Description
4	STATUS LED	Indicates the current device status as follows: <ul style="list-style-type: none"> <li>◆ <b>Green (solid)</b>: Software is ready.</li> <li>◆ <b>Amber (fast blink)</b>: USB is not connected.</li> <li>◆ <b>Red (solid)</b>: No monitor detected.</li> <li>◆ <b>Red (slow blink)</b>: No network connection, or invalid network cable connection.</li> <li>◆ <b>Red (fast blink)</b>: Fatal error.</li> </ul>
5	Video Out	If desired, connect a local digital monitor to this port for use as a console display. Shielded DisplayPort cable is required.
6	USB 2.0	These ports are not used; only use the rear USB port.

## REAR PANEL

**Figure 1-6** shows the connectors and indicators on the rear panel of an *XtendPoint* four-port transmitter, and **Table 1-6** describes them.



**Figure 1-6** *XtendPoint* Four-Port Transmitter - Rear Panel

**Table 1-6** *XtendPoint* Four-Port Transmitter - Rear Panel

ID	Name	Description
1	Video In (DisplayPort 1.1)	Connect to the video output(s) on the source computer. Shielded DisplayPort cable is required.
2	Video In (DisplayPort 1.2)	Connect to the video output(s) on the source computer. Shielded DisplayPort cable is required.
3	Line In	Connect to either: <ul style="list-style-type: none"> <li>◆ The <b>LINE OUT</b> connector of the host computer.</li> <li>◆ Another audio source.</li> </ul>



**Table 1-6** *XtendPoint* Four-Port Transmitter - Rear Panel (Continued)

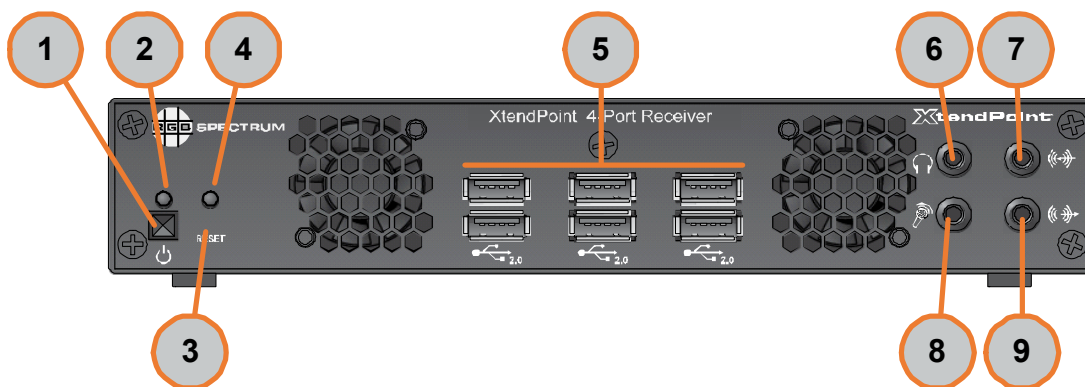
ID	Name	Description
4	Line Out	Connect to either: <ul style="list-style-type: none"> <li>◆ The <b>LINE IN</b> connector of the host computer.</li> <li>◆ Another audio source.</li> </ul>
6	RS232	Connect to an RS232 device to be controlled from the Receiver.
6	USB 2.0	Connect the host computer here.
7	LAN2	Optional. Connect an SFP module (either RJ45 or LC-LC; not sold by RGB Spectrum). See <a href="#">“Using an SFP Module” on page 33</a> . This LAN port includes an LED that indicates the following: <ul style="list-style-type: none"> <li>◆ <b>Off</b>: No power.</li> <li>◆ <b>Green (solid)</b>: Network activity detected.</li> <li>◆ <b>Green (fast blink)</b>: Data transfer in progress.</li> <li>◆ <b>Amber (solid)</b>: No transceiver detected.</li> <li>◆ <b>Red (solid)</b>: Error establishing communications. Verify all network connections, and then restart the device, as described in <a href="#">“Rebooting/Resetting an XtendPoint Device” on page 103</a>.</li> </ul>
8	LAN1	Connect an RJ45 CATX cable. This LAN port has the following LEDS: <ul style="list-style-type: none"> <li>◆ <b>Activity (green; left)</b>: This light blinks rapidly when the network is active.</li> <li>◆ <b>Speed (amber; right)</b>: This light illuminates when network speed is 100Mbps; it is off when network speed is 1Gbps.</li> </ul>
9	Power	Connect the 12V DC power supply here.

### 1.3.4 XtendPoint Four-Port Receiver

This section describes the front and rear panel controls, indicators, and connections on an XtendPoint four-port receiver.

#### FRONT PANEL

[Figure 1-7](#) shows the connectors and indicators on the front panel of an XtendPoint four-port receiver, and [Table 1-7](#) describes them.



**Figure 1-7 XtendPoint Four-Port Receiver - Front Panel**

**Table 1-7 XtendPoint Four-Port Receiver - Front Panel**

ID	Name	Description
1	POWER switch.	Turns the device on or off.
2	POWER LED	Indicates the current device status as follows: <ul style="list-style-type: none"> <li>◆ <b>Off:</b> Device is not receiving power.</li> <li>◆ <b>Green (standby):</b> Device is turned off but still has power.</li> <li>◆ <b>Green (solid):</b> Device is active.</li> <li>◆ <b>Green (slow blink):</b> Device is restarting.</li> <li>◆ <b>Green (fast blink):</b> Device configuration is resetting.</li> <li>◆ <b>Amber (solid):</b> Device is in Maintenance mode.</li> <li>◆ <b>Amber (slow blink):</b> Device is in Maintenance mode and is restarting.</li> <li>◆ <b>Amber (fast blink):</b> Device firmware update in progress.</li> <li>◆ <b>Red (fast blink):</b> Driver error detected.</li> </ul>
3	RESET switch	Resets the device configuration. See <a href="#">“Rebooting/Resetting an XtendPoint Device” on page 103.</a>

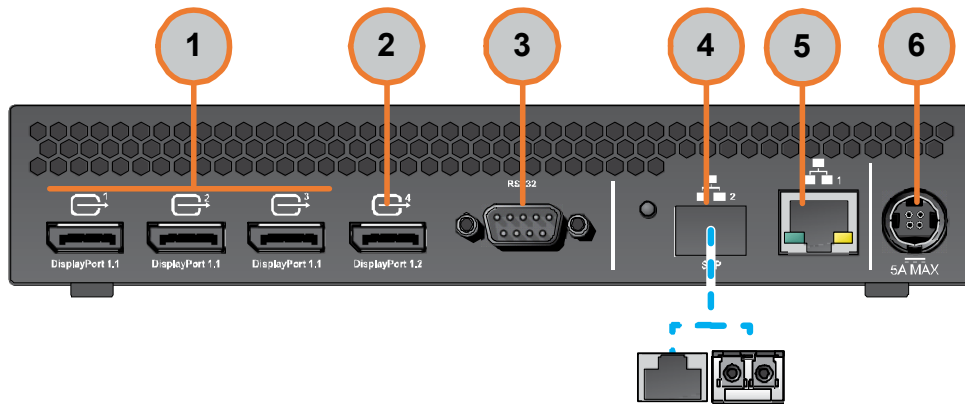


**Table 1-7** *XtendPoint* Four-Port Receiver - Front Panel (Continued)

ID	Name	Description
4	STATUS LED	Indicates the current device status as follows: <ul style="list-style-type: none"> <li>◆ <b>Green (solid)</b>: Software is ready.</li> <li>◆ <b>Amber (fast blink)</b>: USB is not connected.</li> <li>◆ <b>Red (solid)</b>: No monitor detected.</li> <li>◆ <b>Red (slow blink)</b>: No network connection, or invalid network cable connection.</li> <li>◆ <b>Red (fast blink)</b>: Fatal error.</li> </ul>
5	USB 2.0	Connect one or more USB device(s) here. You may connect: <ul style="list-style-type: none"> <li>◆ Keyboard</li> <li>◆ Mouse</li> <li>◆ USB and/or CAC drive(s)</li> </ul>
6	Headphone	Connect a set of headphones to this connector.
7	Line in	Connect to the <b>LINE OUT</b> connector on an audio source.
8	Microphone	Connect a microphone to this connector.
9	Line Out	Connect to the <b>LINE IN</b> connector on an audio source.

## REAR PANEL

[Figure 1-8](#) shows the connectors and indicators on the rear panel of an *XtendPoint* four-port receiver, and [Table 1-8](#) describes them.



**Figure 1-8** *XtendPoint* Four-Port Receiver - Rear Panel

**Table 1-8** *XtendPoint* Four-Port Receiver - Rear Panel

ID	Name	Description
1	Video Out (DisplayPort 1.1).	Connect to the monitor(s) you will use to control the remote computer(s). Shielded DisplayPort cable required.
2	Video Out (DisplayPort 1.2).	Connect to the monitor(s) you will use to control the remote computer(s). Shielded DisplayPort cable required.



**Table 1-8 XtendPoint Four-Port Receiver - Rear Panel (Continued)**

ID	Name	Description
3	RS232	Connect to an RS232 device to be controlled from the Receiver.
4	LAN2	Optional. Connect an SFP module (either RJ45 or LC-LC; not sold by RGB Spectrum). See <a href="#">“Using an SFP Module” on page 33</a> . This LAN port includes an LED that indicates the following: <ul style="list-style-type: none"> <li>◆ <b>Off:</b> No power.</li> <li>◆ <b>Green (solid):</b> Network activity detected.</li> <li>◆ <b>Green (fast blink):</b> Data transfer in progress.</li> <li>◆ <b>Amber (solid):</b> No transceiver detected.</li> <li>◆ <b>Red (solid):</b> Error establishing communications. Verify all network connections, and then restart the device, as described in <a href="#">“Rebooting/Resetting an XtendPoint Device” on page 103</a>.</li> </ul>
5	LAN1	Connect an RJ45 CATX cable. See This LAN port has the following LEDs: <ul style="list-style-type: none"> <li>◆ <b>Activity (green; left):</b> This light blinks rapidly when the network is active.</li> <li>◆ <b>Speed (amber; right):</b> This light illuminates when network speed is 100Mbps; it is off when network speed is 1Gbps.</li> </ul>
6	Power	Connect the 12V DC power supply here.

## 1.4 Specifications

This section lists the specifications for *XtendPoint* devices.

### 1.4.1 XtendPoint Two-Port Transmitter

[Table 1-9](#) lists the specifications for an *XtendPoint* two-port transmitter .

**Table 1-9 Specifications - XtendPoint Two-Port Transmitter**

Parameter	Description
<b>Inputs</b>	
Video	2x Displayport 1.1 (with stereo L-PCM audio)
Maximum Resolution	Either: <ul style="list-style-type: none"> <li>◆ 2x 1920 x 1200 @ 60Hz</li> <li>◆ 1x 2560 x 1600 @ 60Hz</li> </ul>
Color space	<ul style="list-style-type: none"> <li>◆ YUV 4:4:4</li> <li>◆ RGB 8:8:8</li> </ul>
Audio	1x mini stereo jack (3.5mm)
USB	<ul style="list-style-type: none"> <li>◆ <b>Front:</b> 2x USB 2.0</li> <li>◆ <b>Rear:</b> 1x USB 2.0</li> </ul>





**Table 1-9 Specifications - XtendPoint Two-Port Transmitter (Continued)**

Parameter	Description
RS232	1x DB9 or DE9 - female
<b>Outputs</b>	
Video	1x DisplayPort 1.1 (for local console)
Audio	1x mini stereo jack (3.5mm)
Ethernet 1	1000 Base-T Ethernet (RJ45)
Ethernet 2	1x Gigabit SFP cage for either: <ul style="list-style-type: none"> <li>◆ RJ45 adapter for twisted pair cable</li> <li>◆ LC-LC adapter for fiber optic cable</li> </ul>
<b>Control</b>	
OSD	Switch between transmitters and set up Point-to-Point mode.
Web	<i>XtendPoint Central Manager</i> application for remote management and configuration.
<b>Power</b>	
Consumption	24.5 W
Input Voltage Range	100V to 240V AC
Input Frequency	50 to 60Hz
Input Connector	IEC 60320-C13
Output Voltage	+12V - +28V DC, 5A
Output Connector	DIN 4-pin male with lock
Maximum Power	60W
<b>Environmental</b>	
Temperature	<ul style="list-style-type: none"> <li>◆ <b>Operating:</b> 32° to 104 °F (0° to 45 °C)</li> <li>◆ <b>Non-operating:</b> -40° to 158 °F (-40° to 70 °C)</li> </ul>
Humidity	<ul style="list-style-type: none"> <li>◆ <b>Operating:</b> 20% to 80% non-condensing</li> <li>◆ <b>Non-operating:</b> 5% to 95% non-condensing</li> </ul>
Altitude (max)	<ul style="list-style-type: none"> <li>◆ <b>Operating:</b> 9,842' (3,000m)</li> <li>◆ <b>Non-operating:</b> 39,370' (12,000m)</li> </ul>
<b>Physical</b>	
Form Factor	1RU, half width
Dimensions	7.45" x 8.526" x 1.676" (18.9cm x 4.26cm x 21.66cm)
Laser Emissions	850µm laser compliant with 21CFR, Subpart J, Class 1
Regulatory Compliance	<b>Class A:</b> CE, FCC, ICES-3, KC, RCM, VCCI
Specifications are subject to change without notice.	



## 1.4.2 XtendPoint Two-Port Receiver

[Table 1-10](#) lists the specifications for an *XtendPoint* two-port receiver.

**Table 1-10 Specifications - XtendPoint Two-Port Receiver**

Parameter	Description
<b>Inputs</b>	
Ethernet 1	1000 Base-T Ethernet (RJ45)
Ethernet 2	1x Gigabit SFP cage for either: <ul style="list-style-type: none"><li>◆ RJ45 adapter for twisted pair cable</li><li>◆ LC-LC adapter for fiber optic cable</li></ul>
Color space	<ul style="list-style-type: none"><li>◆ YUV 4:4:4</li><li>◆ RGB 8:8:8</li></ul>
Audio	<ul style="list-style-type: none"><li>◆ <b>Microphone:</b> 1x mini stereo jack (3.5mm)</li><li>◆ <b>Line in:</b> 1x mini stereo jack (3.5mm)</li></ul>
USB	<b>Front:</b> 4x USB 2.0
RS232	1x DB9 or DE9 - female
<b>Outputs</b>	
Video	2x Displayport 1.1 (with stereo L-PCM audio)
Maximum Resolution	Either: <ul style="list-style-type: none"><li>◆ 2x 1920 x 1200 @ 60Hz</li><li>◆ 1x 2560 x 1600 @ 60Hz</li></ul>
Audio	<ul style="list-style-type: none"><li>◆ <b>Headphones:</b> 1x mini stereo jack (3.5mm)</li><li>◆ <b>Line out:</b> 1x mini stereo jack (3.5mm)</li></ul>
<b>Control</b>	
OSD	Switch between transmitters and set up Point-to-Point mode.
Web	<i>XtendPoint Central Manager</i> application for remote management and configuration.
<b>Power</b>	
Consumption	26.5 W
Input Voltage Range	100V to 240V AC
Input Frequency	50 to 60Hz
Input Connector	IEC 60320-C13
Output Voltage	+12V - +28V DC, 5A
Output Connector	DIN 4-pin male with lock
Maximum Power	60W
<b>Environmental</b>	
Temperature	<ul style="list-style-type: none"><li>◆ <b>Operating:</b> 32° to 104 °F (0° to 45 °C)</li><li>◆ <b>Non-operating:</b> -40° to 158 °F (-40° to 70 °C)</li></ul>
Humidity	<ul style="list-style-type: none"><li>◆ <b>Operating:</b> 20% to 80% non-condensing</li><li>◆ <b>Non-operating:</b> 5% to 95% non-condensing</li></ul>



**Table 1-10 Specifications - XtendPoint Two-Port Receiver (Continued)**

Parameter	Description
Altitude (max)	<ul style="list-style-type: none"> <li>◆ <b>Operating:</b> 9,842' (3,000m)</li> <li>◆ <b>Non-operating:</b> 39,370' (12,000m)</li> </ul>
<b>Physical</b>	
Form Factor	1RU, half width
Dimensions	7.45" x 8.526" x 1.676" (18.9cm x 4.26cm x 21.66cm)
Laser Emissions	850µm laser compliant with 21CFR, Subpart J, Class 1
Regulatory Compliance	<b>Class A:</b> CE, FCC, ICES-3, KC, RCM, VCCI
Specifications are subject to change without notice.	

### 1.4.3 XtendPoint Four-Port Transmitter

[Table 1-11](#) lists the specifications for an XtendPoint four-port transmitter .

**Table 1-11 Specifications - XtendPoint Four-Port Transmitter**

Parameter	Description
<b>Inputs</b>	
Video	<ul style="list-style-type: none"> <li>◆ 3x Displayport 1.1 (with stereo L-PCM audio; numbered 1-3)</li> <li>◆ 1x Displayport 1.2 (with stereo L-PCM audio; numbered 4)</li> </ul>
Maximum Resolution	Either: <ul style="list-style-type: none"> <li>◆ 4x 1920 x 1080 @60Hz</li> <li>◆ 3x 1920 x 1200 @ 60Hz</li> <li>◆ 2x 2560 x 1600 @ 60Hz</li> <li>◆ 2x 3840 x 2160 @ 30Hz</li> <li>◆ 1x 3840 x 2160 @ 60Hz (DisplayPort 1.2 only)</li> </ul>
Color space	<ul style="list-style-type: none"> <li>◆ YUV 4:4:4</li> <li>◆ RGB 8:8:8</li> </ul>
Audio	1x mini stereo jack (3.5mm)
USB	<ul style="list-style-type: none"> <li>◆ <b>Front:</b> 2x USB 2.0</li> <li>◆ <b>Rear:</b> 1x USB 2.0</li> </ul>
RS232	1x DB9 or DE9 - female
<b>Outputs</b>	
Video	1x DisplayPort 1.1 (for local console)
Audio	1x mini stereo jack (3.5mm)
Ethernet 1	1000 Base-T Ethernet (RJ45)
Ethernet 2	1x Gigabit SFP cage for either: <ul style="list-style-type: none"> <li>◆ RJ45 adapter for twisted pair cable</li> <li>◆ LC-LC adapter for fiber optic cable</li> </ul>



**Table 1-11 Specifications - XtendPoint Four-Port Transmitter (Continued)**

Parameter	Description
<b>Control</b>	
OSD	Switch between transmitters and set up Point-to-Point mode.
Web	<i>XtendPoint Central Manager</i> application for remote management and configuration.
<b>Power</b>	
Consumption	44.0 W
Input Voltage Range	100V to 240V AC
Input Frequency	50 to 60Hz
Input Connector	IEC 60320-C13
Output Voltage	+12V - +28V DC, 5A
Output Connector	DIN 4-pin male with lock
Maximum Power	60W
<b>Environmental</b>	
Temperature	◆ <b>Operating:</b> 32° to 104 °F (0° to 45 °C) ◆ <b>Non-operating:</b> -40° to 158 °F (-40° to 70 °C)
Humidity	◆ <b>Operating:</b> 20% to 80% non-condensing ◆ <b>Non-operating:</b> 5% to 95% non-condensing
Altitude (max)	◆ <b>Operating:</b> 9,842' (3,000m) ◆ <b>Non-operating:</b> 39,370' (12,000m)
<b>Physical</b>	
Form Factor	1RU, half width
Dimensions	7.45" x 8.526" x 1.676" (18.9cm x 4.26cm x 21.66cm)
Laser Emissions	850µm laser compliant with 21CFR, Subpart J, Class 1
Regulatory Compliance	<b>Class A:</b> CE, FCC, ICES-3, KC, RCM, VCCI
Specifications are subject to change without notice.	



### 1.4.4 XtendPoint Four-Port Receiver

[Table 1-12](#) lists the specifications for an *XtendPoint* four-port receiver .

**Table 1-12 Specifications - XtendPoint Four-Port Receiver**

Parameter	Description
<b>Inputs</b>	
Ethernet 1	1000 Base-T Ethernet (RJ45)
Ethernet 2	1x Gigabit SFP cage for either: <ul style="list-style-type: none"> <li>◆ RJ45 adapter for twisted pair cable</li> <li>◆ LC-LC adapter for fiber optic cable</li> </ul>
Color space	<ul style="list-style-type: none"> <li>◆ YUV 4:4:4</li> <li>◆ RGB 8:8:8</li> </ul>
Audio	<ul style="list-style-type: none"> <li>◆ <b>Microphone:</b> 1x mini stereo jack (3.5mm)</li> <li>◆ <b>Line in:</b> 1x mini stereo jack (3.5mm)</li> </ul>
USB	<b>Front:</b> 4x USB 2.0
RS232	1x DB9 or DE9 - female
<b>Outputs</b>	
Video	<ul style="list-style-type: none"> <li>◆ 3x Displayport 1.1 (with stereo L-PCM audio)</li> <li>◆ 1x DisplayPort 1.2 (with stereo L-PCM audio)</li> </ul>
Maximum Resolution	Either: <ul style="list-style-type: none"> <li>◆ 4x 1920 x 1080 @60Hz</li> <li>◆ 3x 1920 x 1200 @ 60Hz</li> <li>◆ 2x 2560 x 1600 @ 60Hz</li> <li>◆ 2x 3840 x 2160 @ 30Hz</li> <li>◆ 1x 3840 x 2160 @ 60Hz (DisplayPort 1.2 only)</li> </ul>
Audio	<ul style="list-style-type: none"> <li>◆ <b>Headphones:</b> 1x mini stereo jack (3.5mm)</li> <li>◆ <b>Line out:</b> 1x mini stereo jack (3.5mm)</li> </ul>
<b>Control</b>	
OSD	Switch between transmitters and set up Point-to-Point mode.
Web	<i>XtendPoint Central Manager</i> application for remote management and configuration.
<b>Power</b>	
Consumption	41.0 W
Input Voltage Range	100V to 240V AC
Input Frequency	50 to 60Hz
Input Connector	IEC 60320-C13
Output Voltage	+12V - +28V DC, 5A
Output Connector	DIN 4-pin male with lock
Maximum Power	60W



**Table 1-12 Specifications - XtendPoint Four-Port Receiver (Continued)**

Parameter	Description
<b>Environmental</b>	
Temperature	◆ <b>Operating:</b> 32° to 104 °F (0° to 45 °C) ◆ <b>Non-operating:</b> -40° to 158 °F (-40° to 70 °C)
Humidity	◆ <b>Operating:</b> 20% to 80% non-condensing ◆ <b>Non-operating:</b> 5% to 95% non-condensing
Altitude (max)	◆ <b>Operating:</b> 9,842' (3,000m) ◆ <b>Non-operating:</b> 39,370' (12,000m)
<b>Physical</b>	
Form Factor	1RU, half width
Dimensions	7.45" x 8.526" x 1.676" (18.9cm x 4.26cm x 21.66cm)
Laser Emissions	850µm laser compliant with 21CFR, Subpart J, Class 1
Regulatory Compliance	<b>Class A:</b> CE, FCC, ICES-3, KC, RCM, VCCI
Specifications are subject to change without notice.	

## 1.5 Maximum Distances (Point-to-Point Mode)

The following maximum distances between devices apply to *XtendPoint* devices that are being operated in Point-to-Point mode:

- **OM2, OM3, OM4 (50/125µm) multi-mode cable:** 1,804' (550m)
- **OM1 (62.5/125µm) multi-mode cable:** 902' (275m)
- **OS1, OS2 (9/125µm) single-mode cable:** 3.1 miles (5km)
- **CAT5e, CAT6 cable:** 328' (100m)



# CHAPTER 2

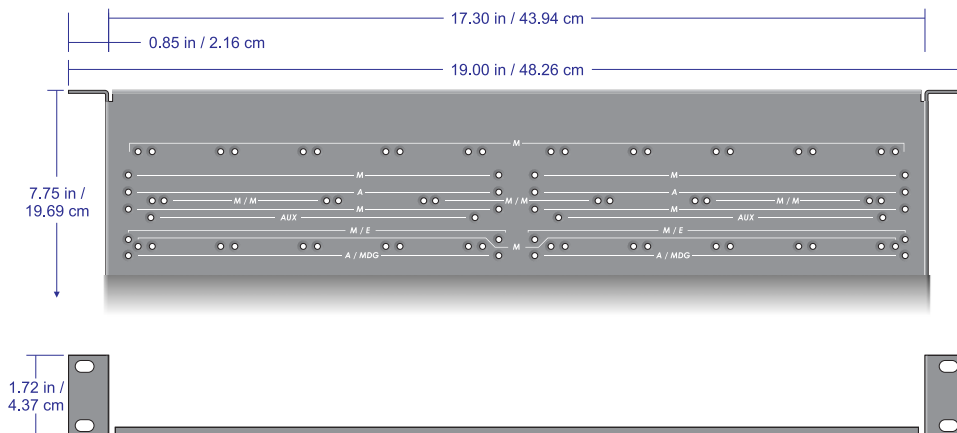
# INSTALLATION

This chapter describes the *XtendPoint* installation process in the following sections:

- [“Mounting an XtendPoint device” on page 21.](#)
- [“Cooling an XtendPoint device” on page 22.](#)
- [“Connection Overview” on page 23.](#)
- [“Connections \(Receiver\)” on page 25.](#)
- [“Connections \(Transmitter\)” on page 29.](#)
- [“Using an SFP Module” on page 33.](#)

## 2.1 Mounting an *XtendPoint* device

This section describes how to mount up to two (2) horizontal *XtendPoint* devices using an optional rack mounting shelf (p/n XP RAK). See [Figure 2-1](#).



**Figure 2-1** Rack Mounting Shelf



## Important

When rack-mounting one or more *XtendPoint* devices:

- ◆ Never stack anything directly over the device(s).
- ◆ Make sure that all cables are properly secured and that no tension is applied to them.
- ◆ Make sure that the ambient air temperature does not exceed the maximum listed in the appropriate table in [“Specifications” on page 14](#).
- ◆ Always allow at least 0.75” (19mm) between the top of an *XtendPoint* device and anything above it.

To horizontally mount up to two (2) *XtendPoint* devices on the rack mounting shelf:

1. Fasten the shelf to the rack in accordance with the instructions for your rack. The shelf includes screws that are compatible with most rack mounts. If needed (such as for clearance), you may mount the *XtendPoint* device(s) first, and then mount the shelf and devices to the rack.
2. Remove the four (4) rubber pads at the bottom of each *XtendPoint* device that you are going to mount.
3. On the rack mounting shelf, locate the three sets of mounting holes labeled **M/E**. These holes are 3.15” (8.00 cm) from the front edge of the mounting shelf.
4. Place the first *XtendPoint* device on the rack mounting shelf, being sure to line the mounting holes on the bottom of the casing with one of the sets of holes labeled **M/M**.
5. Secure the *XtendPoint* device to the rack mounting shelf using two (2) M3 x 6 flat-head screws (included in the rack mounting kit) and a hand screwdriver. Do not over-tighten the screws.
6. Repeat Steps 3-5 for up to one (1) additional *XtendPoint* device.
7. Connect the input, output, network, and power cables to the mounted device(s), as described in [“Connection Overview” on page 23](#), [“Connections \(Receiver\)” on page 25](#), and [“Connections \(Transmitter\)” on page 29](#).

## 2.2 Cooling an *XtendPoint* device

These guidelines will help ensure that an *XtendPoint* device receives adequate airflow to prevent overheating:

- Ensure that the *XtendPoint* device is placed in a location with adequate ventilation. Do not operate it in an enclosed space, such as a drawer or closet.
- Allow at least 0.75” (19mm) of clearance between the top of an *XtendPoint* device and anything above it. More space may be needed depending on the operating environment.
- Always rest an *XtendPoint* device that is not rack mounted on its original rubber feet.





## 2.3 Connection Overview

This section presents a high-level overview of *XtendPoint* device connections for both Networked and Point-to-Point Mode. It also describes the supported monitor adapters and output capabilities.

### 2.3.1 Networked Mode Setup

*XtendPoint* devices in Networked mode operate over a copper- or fiber-based Gigabit Ethernet network and are not directly connected to each other. To set up this mode:

1. Connect all *XtendPoint* devices, as described in [“Connections \(Receiver\)” on page 25](#) and [“Connections \(Transmitter\)” on page 29](#).
2. Validate the setup by reviewing all connections. See:
  - ◆ [Figure 3-1](#)
  - ◆ [“Link Redundancy” on page 57](#), if applicable.
3. Update the device firmware, as described in [“Software & Firmware Updates” on page 99](#).
4. Verify that all devices are being discovered on the network, as described in [“Validating Network Discovery” on page 36](#).
5. Install the *XtendPoint Central Manager* application, as described in [“Installation” on page 60](#).
6. Use the *XtendPoint Central Manager* application to configure the devices, as described in [“Device Setup” on page 68](#).
7. Log in to the *XtendPoint* receiver device, and then use the OSD to switch to different transmitter devices, as described in [“Sources Tab” on page 38](#).

### 2.3.2 Point-to-Point Mode Setup

*XtendPoint* devices in Point-to-Point mode operate via direct connections, where the transmitter and receiver devices are directly linked to each other. To set up this mode:

1. Connect all *XtendPoint* devices, as described in [“Connections \(Receiver\)” on page 25](#) and [“Connections \(Transmitter\)” on page 29](#).
2. Validate the setup by reviewing all connections. See [Figure 4-1](#).
3. Update the device firmware, as described in [“Software & Firmware Updates” on page 99](#).
4. Use the OSD to enable Point-to-Point mode, as described in [“Accessing the OSD” on page 48](#).
5. Configure the devices, as described in [“Sources Tab” on page 49](#) and [“Receiver Tab” on page 50](#).



### 2.3.3 Supported Monitor Adapters

If needed, *XtendPoint* devices support the following monitor adapters:

- Mini DisplayPort to DisplayPort.
- DisplayPort to Mini DisplayPort.
- DisplayPort to active DVI.
- DisplayPort to active HDMI.

#### Notes

- ◆ DisplayPort to Mini DisplayPort and Mini DisplayPort to DisplayPort adapters are not recommended for 4K60 resolutions.
- ◆ Passive DisplayPort to DVI and DisplayPort to HDMI adapters are not supported.

### 2.3.4 Output Capabilities

*XtendPoint* devices support the following outputs:

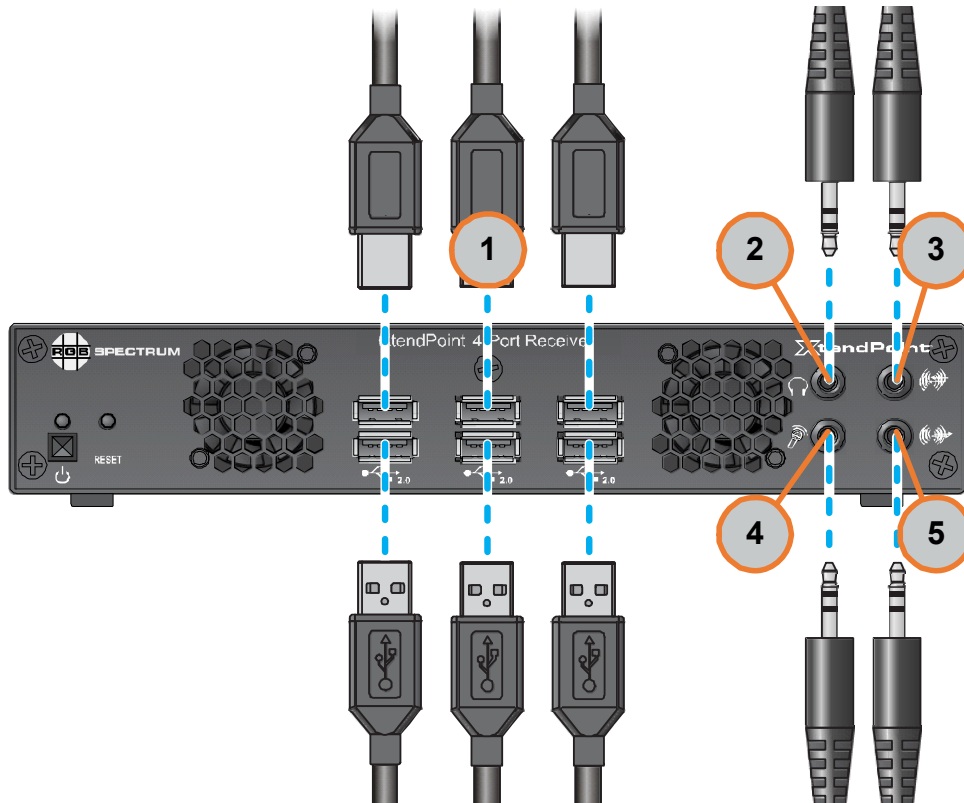
**Table 2-1 Output Capabilities**

	Connector 1	Connector 2	Connector 3 <sup>1</sup>	Connector 4 <sup>1, 2</sup>
DisplayPort 1.2	-	-	-	☑
DisplayPort 1.1	☑	☑	☑	☑
HDMI 1.4	☑	☑	☑	☑
Single-link DVI	☑	☑	☑	☑
Dual-link DVI	☑	☑	☑	☑
<b>Notes:</b>				
1. Available on four-port devices only.				
2. Connector 4 supports a single 4K (3480 x 2160 @ 60Hz) monitor.				



## 2.4 Connections (Receiver)

[Figure 2-2](#) displays the front connections on an XtendPoint four-port receiver.

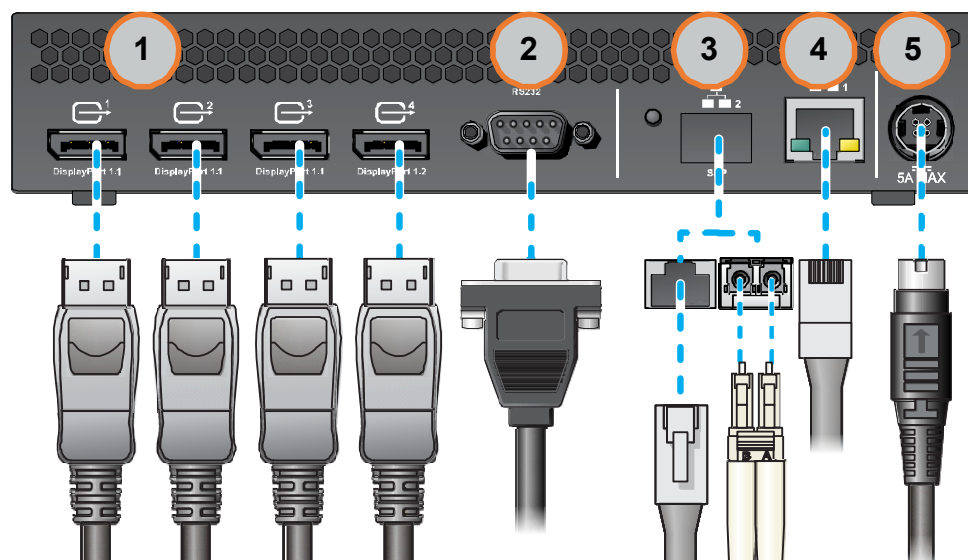


**Figure 2-2** XtendPoint Four-Port Receiver Front Connections

The callouts in this figure depict the following connections:

- **USB (1):** See [“USB” on page 26](#).
- **Headphones (2):** See [“Audio” on page 26](#).
- **Line In (3):** See [“Audio” on page 26](#).
- **Microphone (4):** See [“Audio” on page 26](#).
- **Line Out (5):** See [“Audio” on page 26](#).

**Figure 2-3** displays the rear connections on an *XtendPoint* four-port receiver.



**Figure 2-3 XtendPoint Four-Port Receiver Rear Connections**

The callouts in this figure depict the following connections:

- **Video Out (1):** See [“Video” on page 27](#).
- **RS232 (2):** See [“RS232” on page 27](#).
- **LAN2 (3):** See [“Network \(LAN2\)” on page 27](#).
- **LAN1 (4):** See [“Network \(LAN1\)” on page 28](#).
- **Power (5):** See [“Power” on page 33](#).

### Important

Never make or modify any connections to an *XtendPoint* device when that device is powered on.

#### 2.4.1 USB

Connect a USB keyboard and mouse to these ports to control the remote PC or PCs. You may also connect storage devices, such as thumb drives and CAC readers.

#### 2.4.2 Audio

The following connections are optional unless you are not using audio embedded in the DisplayPort stream:

1. Connect one end of a 3.5mm stereo audio cable to the **LINE OUT** port on an audio device.
2. Connect the other end of this cable to the **LINE IN** port on the *XtendPoint* receiver.



3. Connect one end of a second 3.5mm stereo audio cable to the **LINE IN** port on an audio device.
4. Connect the other end of this second cable to the **LINE OUT** port on the *XtendPoint* receiver.
5. If desired, connect a microphone to the **MICROPHONE** port on the *XtendPoint* receiver.
6. If desired, connect headphones to the **HEADPHONE** port on the *XtendPoint* receiver.

### 2.4.3 Video

1. Connect one end of a shielded DisplayPort cable to the first monitor you plan to use.
2. Connect the other end of the cable to the appropriate connector on the *XtendPoint* receiver. See [Table 2-2](#).

**Table 2-2 Video Connections**

Resolution	Connector 1	Connector 2	Connector 3 <sup>1</sup>	Connector 4 <sup>1, 2</sup>
1920 x 1080 @ 60Hz	☑	☑	☑	☑
1900 x 1200 @ 60Hz	☑	☑	☑	-
2560 x 1600 @ 60Hz	☑	☑	-	-
3840 x 2160 @ 30Hz	☑	☑	-	-
3840 x 2160 @ 60Hz	-	-	-	☑

**Note:**

1. Available on four-port devices only.

### 2.4.4 RS232

Connect one end of an 9-pin RS232 cable to the RS232 port on your *XtendPoint* receiver. Connect the other end of the cable to the device that will be controlled from this device.

### 2.4.5 Network (LAN2)

In general, you will only need to use this connection when one or more of the following conditions apply:

- Your network uses fiber optic connections.
- You are setting up link redundancy, as described in [“Link Redundancy” on page 57](#).

To connect to this port:

1. Determine the type of SFP module to use (RJ45 or LC-LC; not sold by RGB Spectrum).
2. Connect the SFP module to the **LAN2** port on the *XtendPoint* receiver. See [“Using an SFP Module” on page 33](#).



3. Connect one end of a network cable to the SFP module. This will be either:
  - ◆ **RJ45:** Cat 5, Cat 5e, Cat 6, or Cat 7.
  - ◆ **Fiber:** LC-LC
4. Connect the other end of the network cable to either:
  - ◆ **Networked mode:** Ethernet switch. See [Figure 3-1](#).
  - ◆ **Point-to-Point mode:** LAN port on the receiver *XtendPoint* device. See [Figure 4-1](#).

### 2.4.6 Network (LAN1)

Use this port if you will be connecting this *XtendPoint* receiver in any of the following ways:

- **Networked mode (single or with link redundancy):** To an Ethernet switch using a single RJ45 connection. See [Figure 3-1](#) and [Figure 5-1](#).
- **Point-to-Point mode:** Directly to an *XtendPoint* transmitter device using a single RJ45 connection. See [Figure 4-1](#).

To connect to this port:

1. Connect one end of a Cat-5, Cat-5e, or Cat-6 RJ45 cable to the **LAN1** port on the *XtendPoint* receiver.
2. Connect the other end of this cable to either an Ethernet switch or *XtendPoint* transmitter, as appropriate.

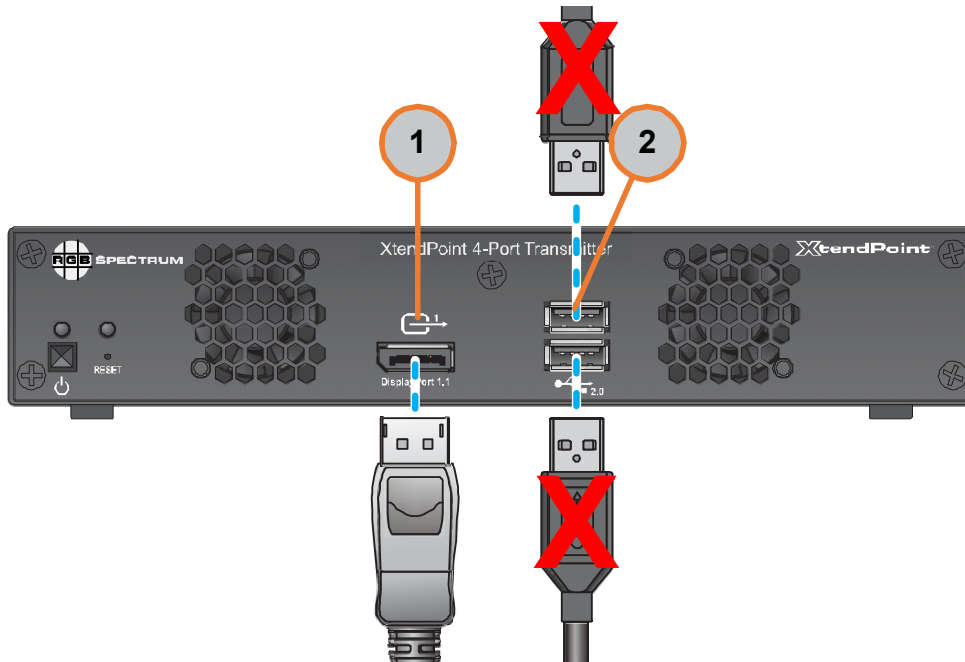
### 2.4.7 Power

Connect the 12V plug from the *XtendPoint* power supply to the **POWER** port on the *XtendPoint* receiver.



## 2.5 Connections (Transmitter)

[Figure 2-2](#) displays the front connections on an XtendPoint four-port transmitter.

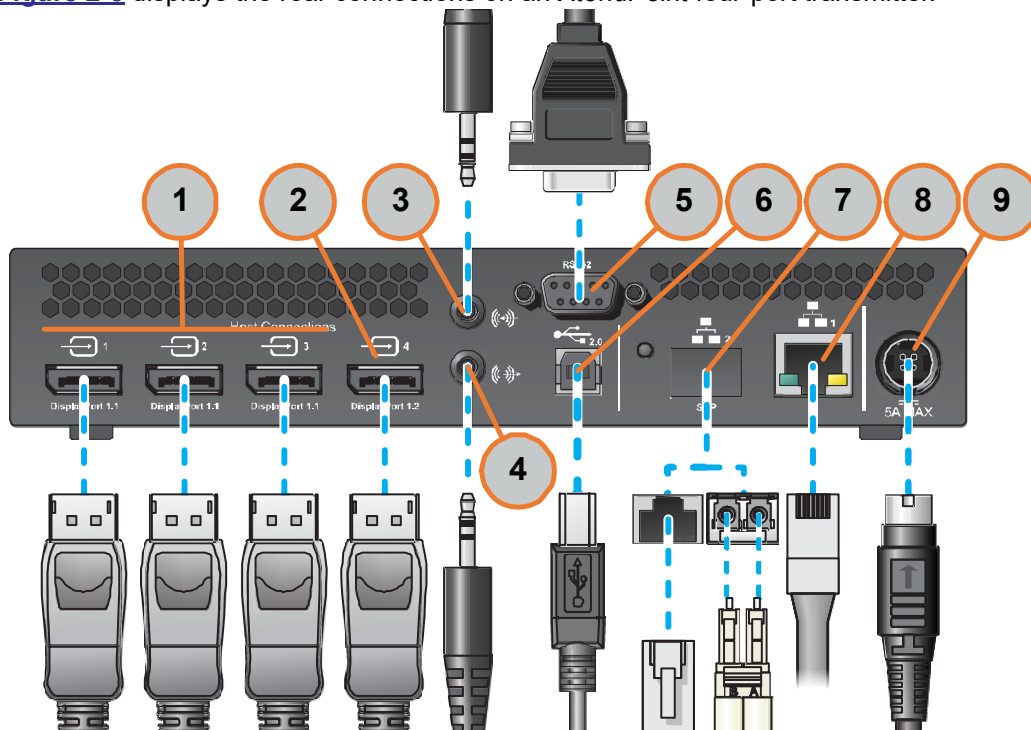


**Figure 2-4 XtendPoint Four-Port Transmitter Front Connections**

The callouts in this figure depict the following connections:

- **Video Out (1):** See [“Video Out” on page 31](#).
- **USB (2):** Do not use these ports.

[Figure 2-5](#) displays the rear connections on an *XtendPoint* four-port transmitter.



**Figure 2-5** XtendPoint Four-Port Transmitter Rear Connections

The callouts in this figure depict the following connections:

- **DisplayPort 1.1 Video In (1):** See [“Video In” on page 31](#).
- **DisplayPort 1.2 Video In (2):** See [“Video In” on page 31](#).
- **Line In (3):** See [“Audio” on page 31](#).
- **Line Out (4):** See [“Audio” on page 31](#).
- **RS232 (5):** See [“RS232” on page 32](#).
- **USB (6):** See [“USB” on page 31](#).
- **LAN2 (7):** See [“Network \(LAN2\)” on page 32](#).
- **LAN1 (8):** See [“Network \(LAN1\)” on page 32](#).
- **Power (9):** See [“Power” on page 33](#).

**Important**

Never make or modify any connections to an *XtendPoint* device when that device is powered on.





### 2.5.1 Video Out

If desired, connect one end of a shielded DisplayPort cable to a monitor that you will use to view the video stream(s) being sent from the *XtendPoint* transmitter device(s).

Connect the other end of the cable to the appropriate connector on the *XtendPoint* receiver. See [Table 2-2](#).

### 2.5.2 USB

Connect the host computer to the rear USB port on the transmitter. Do not use the front USB ports.

### 2.5.3 Video In

1. Connect one end of a shielded DisplayPort cable to the first GPU output that you will use to view output from the *XtendPoint* transmitter device(s).
2. Connect the other end of the cable to the appropriate **VIDEO IN** connector on the *XtendPoint* transmitter. See [Table 2-3](#).

**Table 2-3 Video In Connections**

Resolution	Connector 1	Connector 2	Connector 3 <sup>1</sup>	Connector 4 <sup>1, 2</sup>
1920 x 1080 @ 60Hz	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1900 x 1200 @ 60Hz	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-
2560 x 1600 @ 60Hz	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-
3840 x 2160 @ 30Hz	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-
3840 x 2160 @ 60Hz	-	-	-	<input checked="" type="checkbox"/>
<b>Note:</b>				
1. Available on four-port devices only.				

### 2.5.4 Audio

The following connections are optional unless you are not using audio embedded in the DisplayPort stream:

1. Connect one end of a 3.5mm stereo audio cable to the **LINE IN** port on an audio device.
2. Connect the other end of this first cable to the **LINE OUT** port on the *XtendPoint* transmitter.
3. Connect one end of a second 3.5mm stereo audio cable to the **LINE OUT** port on the host computer or other audio device.
4. Connect the other end of this second cable to the **LINE IN** port on the *XtendPoint* transmitter.



### 2.5.5 RS232

Connect one end of an 9-pin RS232 cable to the RS232 port on your *XtendPoint* transmitter. Connect the other end of the cable to the device that will control the remote RS232 device.

### 2.5.6 Network (LAN2)

In general, you will only need to use this port when one or more of the following conditions apply:

- Your network uses fiber optic connections.
- You are setting up link redundancy, as described in [“Link Redundancy” on page 57](#).

To connect to this port:

1. Determine the type of SFP module to use (RJ45 or LC-LC; not sold by RGB Spectrum).
2. Connect the SFP module to the **LAN2** port on the *XtendPoint* transmitter. See [“Using an SFP Module” on page 33](#).
3. Connect one end of a network cable to the SFP module. This will be either:
  - ◆ **RJ45:** Cat 5, Cat 5e, Cat 6, or Cat 7.
  - ◆ **Fiber:** LC-LC
4. Connect the other end of the network cable to either:
  - ◆ **Networked mode:** Ethernet switch. See [Figure 3-1](#).
  - ◆ **Point-to-Point mode:** LAN port on the receiver *XtendPoint* device. See [Figure 4-1](#).

### 2.5.7 Network (LAN1)

Use this port if you will be connecting this *XtendPoint* transmitter in any of the following ways:

- **Networked mode (single or with link redundancy):** To an Ethernet switch using a single RJ45 connection. See [Figure 3-1](#) and [Figure 5-1](#).
- **Point-to-Point mode:** Directly to an *XtendPoint* receiver device using a single RJ45 connection. See [Figure 4-1](#).

To connect to this port:

1. Connect one end of a Cat-5, Cat-5e, or Cat-6 RJ45 cable to the **LAN1** port on the *XtendPoint* transmitter.
2. Connect the other end of this cable to either an Ethernet switch or *XtendPoint* receiver, as appropriate.



### 2.5.8 Power

Connect the 12V plug from the *XtendPoint* power supply to the **POWER** port on the *XtendPoint* transmitter.

## 2.6 Using an SFP Module

This section describes how to install and remove an SFP module. The illustrations in this section show an RJ45 adapter connecting to a PCIe card; however, the instructions are identical for both RJ45 and LC-LC adapters connecting to an *XtendPoint* device.

### 2.6.1 Installation

To install the SFP module:

1. Close the latch handle.
2. Push the module into the **LAN2** port on the *XtendPoint* device, making sure that the adapter is properly oriented. A properly oriented adapter should slide easily into the port.

**Important** Never force the adapter into the port.

3. Verify that the SFP module is inserted all the way into the port by pulling gently on the adapter without lowering the latch handle. You may hear a click when the adapter locks into place.

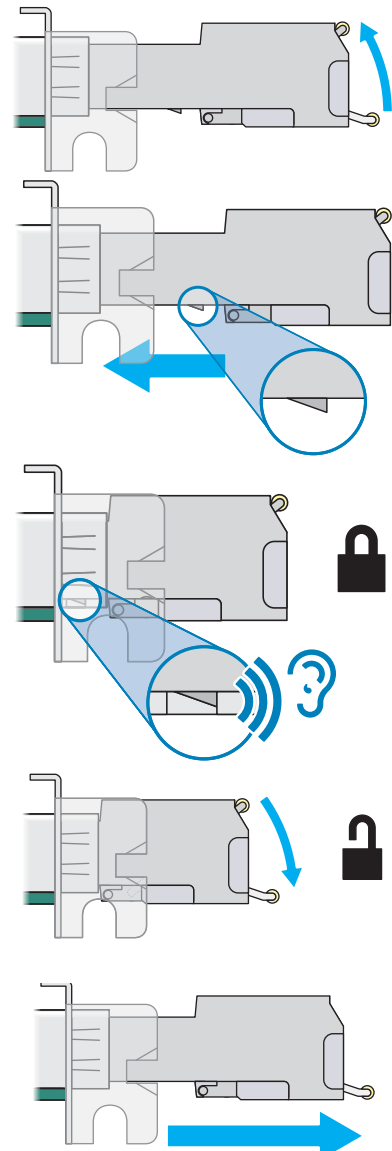
### 2.6.2 Removal

To remove the SFP module:

1. Pull the latch handle down to unlock the SFP module from the device port.

**Important** Never attempt to remove the adapter when it is locked in place.

2. Grasp the SFP module by the side walls, and then carefully pull it out of the port.



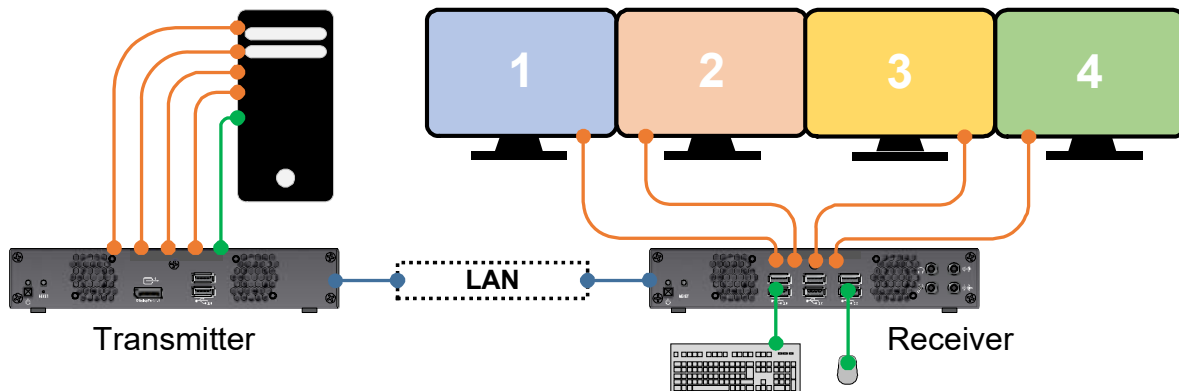


*This page intentionally left blank.*



# CHAPTER 3 OSD OPERATION (NETWORKED MODE)

In Networked mode, *XtendPoint* devices operate over a copper or fiber-optic Gigabit Ethernet network, as shown in [Figure 3-1](#).



**Figure 3-1** *XtendPoint* in Networked Mode

## 3.1 Prerequisites

Before configuring your *XtendPoint* devices to operate in Networked mode:

- Verify that all connectors are the correct type and that they are properly fastened. Never change connections when the *XtendPoint* device is powered on.
- Install the *XtendPoint Central Manager* application on a separate system on the network, and specify the allowed connections between the *XtendPoint* transmitter and receiver devices. See [“Installation” on page 60](#).



- Ensure that all *XtendPoint* transmitter and receiver devices are using the latest firmware version. All *XtendPoint* devices must be running the same firmware version, and this firmware version must also match the installed version of the *XtendPoint Central Manager* application. See [“Software & Firmware Updates” on page 99](#).
- The network must include a DHCP (Dynamic Host Configuration Protocol) server in order to assign initial IP addresses to the *XtendPoint* devices.
- If the computer being used to run the *XtendPoint Central Manager* application is running Windows Server 2016 or Windows Server 2008 R2, then enable network discovery, file sharing, and the SSDP service. Refer to your Windows documentation for instructions.
- If any *XtendPoint* device has been operating in Point-to-Point mode, then that device must be reconfigured to operate in Networked mode. See [“Changing the Device Operation Mode” on page 107](#).

### 3.2 Available Software

In Networked mode, *XtendPoint* devices can be controlled by either:

- The *XtendPoint Central Manager* application
- The On-Screen Display (OSD)

### 3.3 Validating Network Discovery

*XtendPoint* devices receive their initial IP address assignments from the DHCP server. After all *XtendPoint* devices have been connected to the network and powered on, verify that they have all been discovered, as follows:

- **Windows 10:** Select **Start > File Explorer > Network**, and then verify that all *XtendPoint* devices appear in the **Other Devices** section.
- **Windows 7:** Select **Start > Accessories > Windows Explorer > Network**, and then verify that all *XtendPoint* devices appear in the **Other Devices** section.

#### Note

If you are prompted to enable network discovery and file sharing on your network when validating network discovery, then enable these two features by clicking the prompt at the top of the Windows Explorer window. These two features must be enabled for the *XtendPoint Central Manager* application to detect the *XtendPoint* devices.



## 3.4 Accessing the OSD

### Note

The *XtendPoint Central Manager* application must be installed and configured as described in [“Installation” on page 60](#) and [“Device Setup” on page 68](#) before you can access and use the OSD.

To access the OSD on *XtendPoint* receiver devices:

1. Enter the OSD shortcut on the keyboard. The default keyboard shortcut is the [SCROLL LOCK] key. See [“Keyboard Shortcuts Sub-Tab” on page 42](#) for information on changing this shortcut.

The OSD **Login** screen appears.

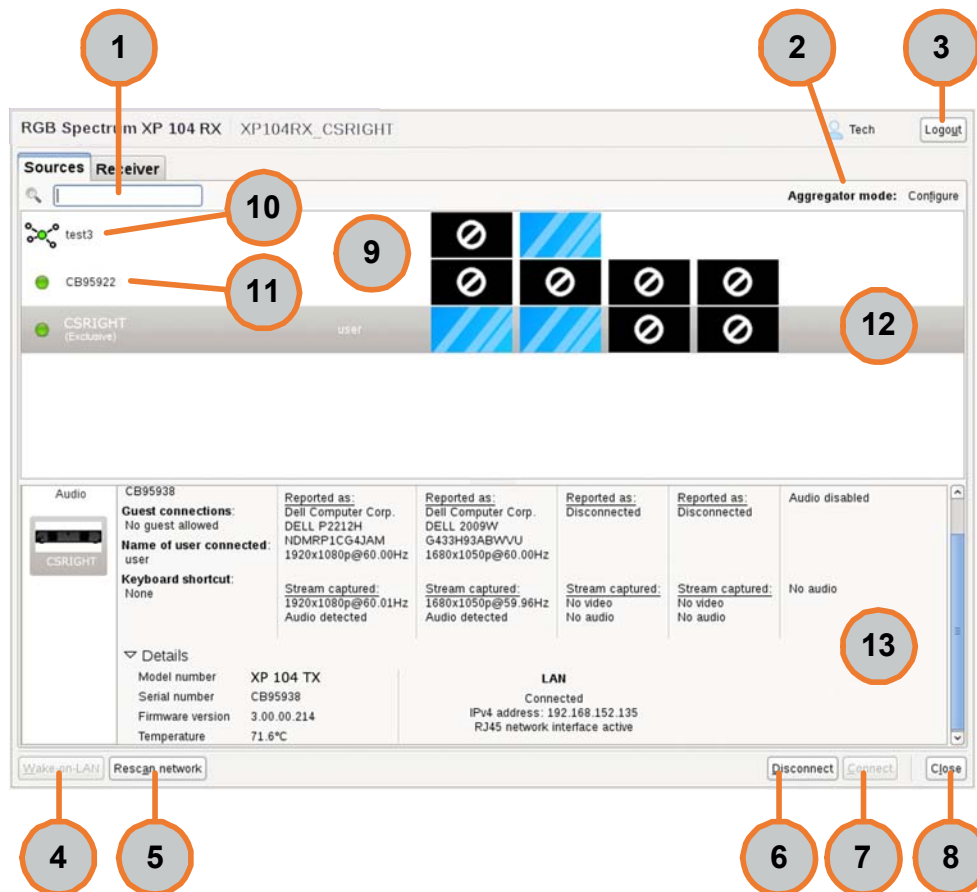
2. Enter your username and password, and then press [ENTER]. If you do not have a username and password, then see [“Managing Users” on page 72](#).

The OSD interface appears with the **Sources** tab selected.



### 3.5 Sources Tab

The **Sources** tab of the OSD interface appears as shown in [Figure 3-2](#). This tab displays all of the available *XtendPoint* transmitter devices. An *XtendPoint* transmitter must be allowed to connect to your *XtendPoint* receiver in order for that transmitter to appear in this tab. See [“Connection Broker” on page 70](#).



**Figure 3-2 OSD Sources Tab (Networked Mode)**

This tab contains the following basic functions:

- **Search (1):** Search for an *XtendPoint* device by device serial number, friendly name, IP address, or the name of a connected user by entering the desired search term in the field and then clicking the **Search** icon (magnifying glass).
- **Aggregator cursor navigation mode (2):** Allows you to configure, edit, or remove an Aggregator mode layout, streams, and audio configuration. See [“Aggregator Mode” on page 43](#).
- **Logout (3):** Clicking this button logs you out of the *XtendPoint* device.
- **Wake-on-LAN (4):** Clicking this button wakes up the *XtendPoint* transmitter if it turns off. This function requires at least one detected *XtendPoint* transmitter in order to work.





- **Rescan network (5):** Clicking this button rescans the network to discover *XtendPoint* transmitters outside of the receiver's subnet or unicast network.
  - **Disconnect (6):** Clicking this button disconnects from the selected *XtendPoint* transmitter.
  - **Connect (7):** Selecting an *XtendPoint* transmitter in the list (9) and then clicking this button connects to the selected transmitter.
  - **Close (8):** Clicking this button closes the OSD.
  - **Transmitters list (9):** This area of the **Sources** tab provides the following summary information for each detected *XtendPoint* transmitter device:
    - ◆ Device name.
    - ◆ Device friendly name (if any).
    - ◆ Keyboard shortcut, if any. If a keyboard shortcut has been assigned for this transmitter, then entering that shortcut will connect the receiver to this transmitter.
    - ◆ User who is connected to that device, if any.
    - ◆ Video stream(s). A striped blue box appears for each active video stream that is connected to Connectors 1 (left) through 4 (right). Inactive streams appear as a black box with a white barred circle.
- To connect to a transmitter, either enter the keyboard shortcut for that transmitter, or select the desired transmitter and then click the **Connect** button (7).
- **Aggregator mode layout (10):** This icon indicates that an Aggregator mode layout has been configured. Selecting a layout allows you to view, edit, or remove that layout. See [“Aggregator Mode” on page 43](#).
  - ***XtendPoint* Transmitter (11):** This icon indicates an individual *XtendPoint* transmitter device. Selecting a device allows you to view that device.
  - **Selected device indicator (12):** This gray bar indicates the currently-selected *XtendPoint* device or Aggregator mode layout.
  - **Transmitter details (13):** Selecting an *XtendPoint* transmitter in the list (9) displays the following detailed information for that transmitter:
    - ◆ Device name.
    - ◆ Device friendly name (if any).
    - ◆ Whether or not guest connections (that don't require a username or password) are allowed.
    - ◆ User who is connected to that device, if any.
    - ◆ Device information (Model number, serial number, firmware version, internal temperature)
    - ◆ Make, model, and resolution of each monitor displaying a video stream, the resolution of the captured video stream, and whether embedded audio has been detected.
    - ◆ Whether or not a separate analog audio stream (**Monitor**, **Line**, or **Microphone**) has been enabled and, if so, information about that audio stream.



- ◆ Network interface(s) being used, interface type, and IP address.

### 3.6 Receiver Tab

The **Receiver** tab of the OSD interface allows you to configure the *XtendPoint* receiver. This tab includes the following sub-tabs:

- [“Audio Sub-Tab” on page 40.](#)
- [“Monitors Sub-Tab” on page 41.](#)
- [“Keyboard Shortcuts Sub-Tab” on page 42.](#)

#### 3.6.1 Audio Sub-Tab

The **Audio** sub-tab is where you configure the following settings for the **Line In**, **Microphone**, **Line Out**, and **Headphones**. See [Figure 3-3](#).

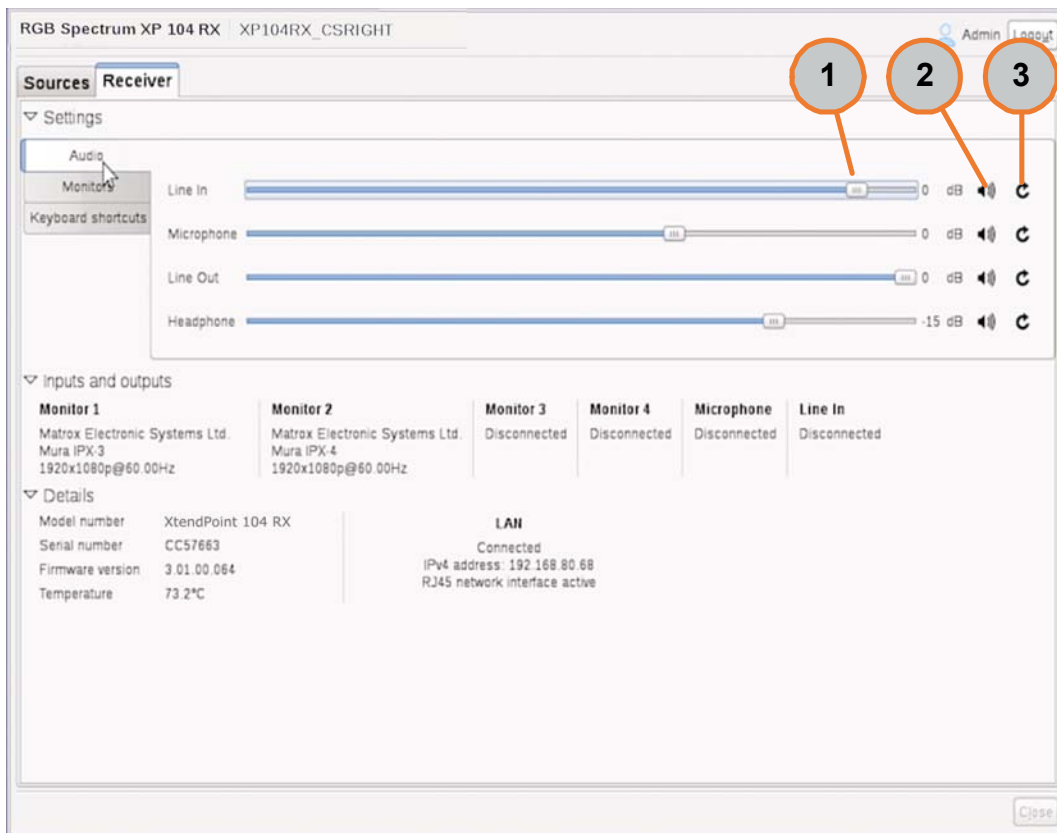


Figure 3-3 Audio Sub-Tab



This sub-tab contains the following functions for each audio device:

- **Level (1):** Click and drag the slider to increase or decrease the level (volume) for the selected audio device. An indicator on the right side of the slider indicates the current audio level, in decibels (dB).
- **Mute/Unmute (2):** Clicking the **Mute** icon (speaker) toggles the device audio on and off.
- **Default Level (3):** Clicking a **Default Level** icon (arrow) sets the level of the selected device to the factory default.

### 3.6.2 Monitors Sub-Tab

The **Monitors** sub-tab allows you to configure display layouts and other options. See [Figure 3-4](#).

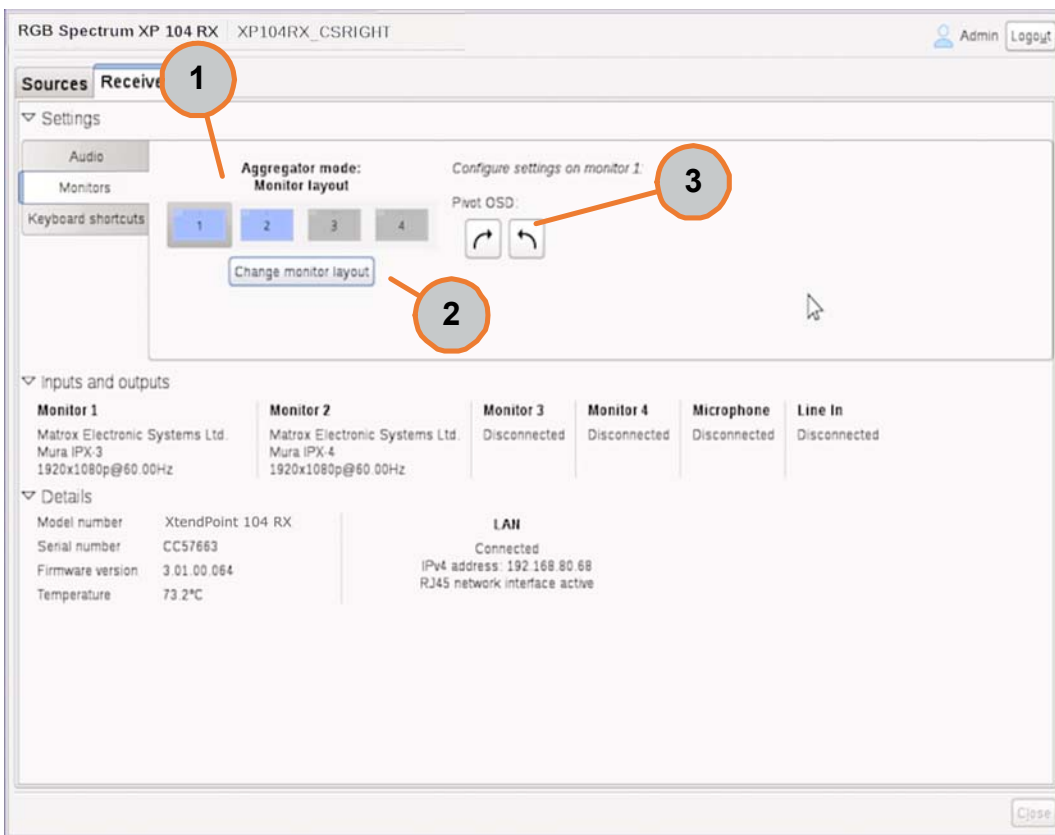


Figure 3-4 Monitors Sub-Tab

This sub-tab contains the following functions:

- **Monitors (1):** Displays the monitor(s) that can be connected to the Receiver. Clicking a monitor allows you to specify settings for that monitor.
- **Change monitor layout (2):** Only appears if Aggregator mode has been enabled. Clicking this button allows you to edit the current display layout. See [“Editing Layout Video Streams” on page 45](#).



- **Pivot OSD (2):** Clicking a **Rotate OSD** icon (arrow) rotates the OSD either left (counterclockwise) or right (clockwise) on the selected monitor (1), as appropriate.

### 3.6.3 Keyboard Shortcuts Sub-Tab

The **Keyboard Shortcuts** sub-tab displays the configure keyboard shortcuts that enable you to switch the mouse focus to a specific display (such as 1, 2, 3, or 4) in the monitor layout, when the *XtendPoint* receiver device is configured for Aggregator mode, as described in [“Configuring Aggregator Mode” on page 44](#). See [Figure 3-5](#).

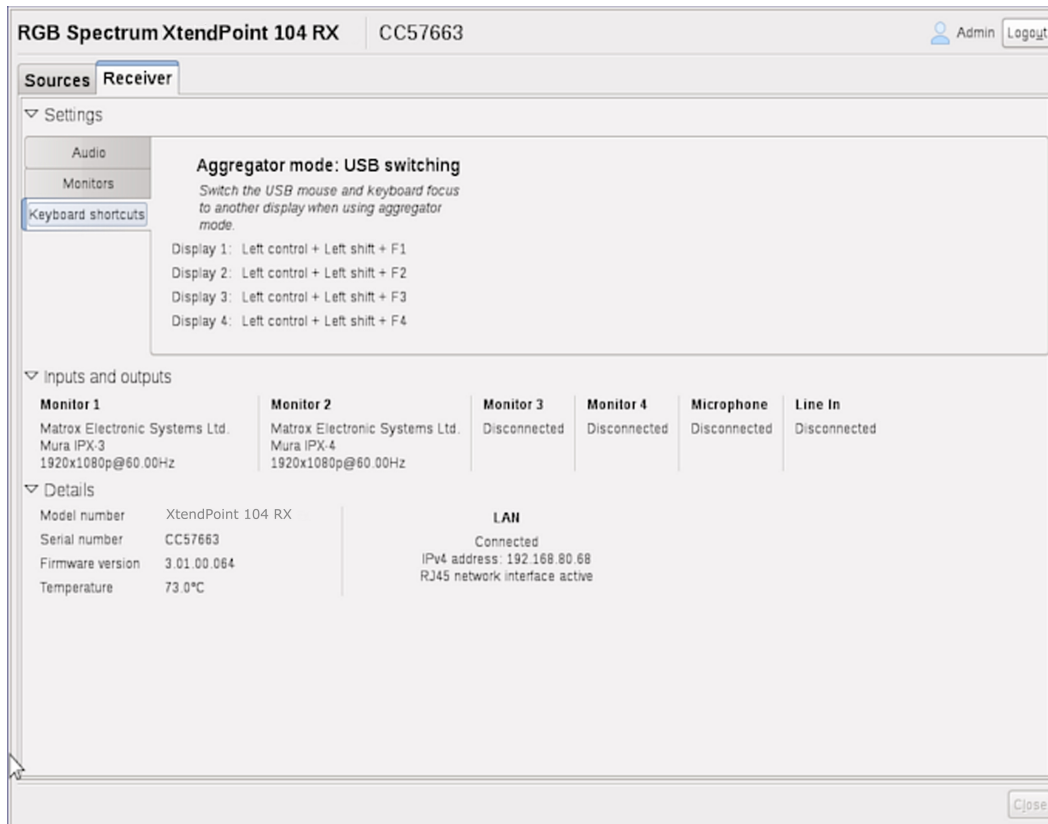


Figure 3-5 Keyboard Shortcuts Sub-tab



## 3.7 Aggregator Mode

Operating in Aggregator mode provides *KlickSimple* cursor navigation that allows an *XtendPoint* receiver to combine video streams from multiple *XtendPoint* transmitters into a single layout, as shown in [Figure 3-6](#).

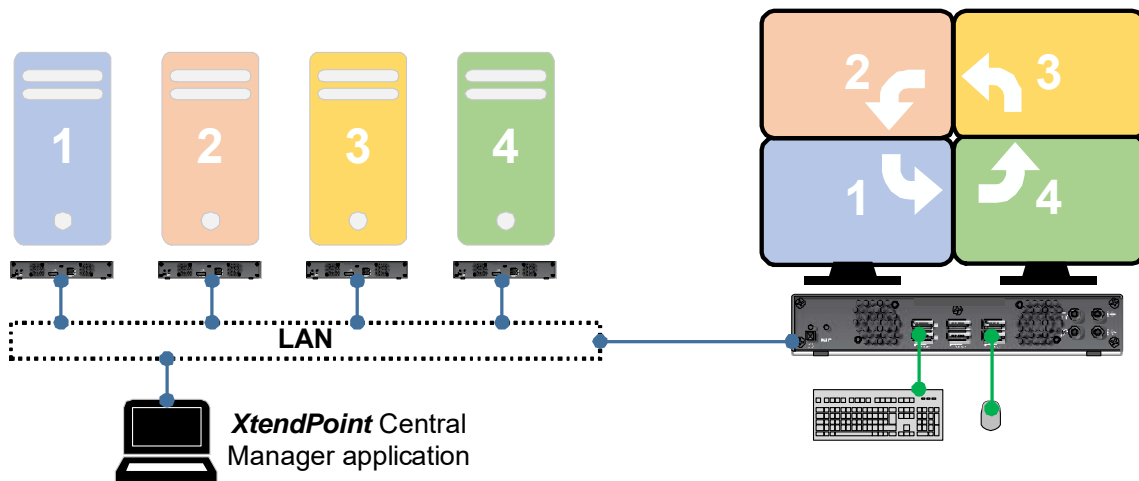


Figure 3-6 *XtendPoint* Receiver in Aggregator Mode

### 3.7.1 Prerequisites

Before configuring Aggregator mode:

- Enable the **Fixed EDID** option in the **Monitors** sub-tab. See [“Monitors Sub-Tab” on page 41](#).
- **Audio configuration:** Review the systems audio settings to determine which DisplayPort output is configured to use audio, and then review the following, as appropriate:
  - ◆ **Digital audio to displays with speakers:** The host systems must use the video output of the graphics card as the destination for the sound.
  - ◆ **Digital audio to analog (Headphone or Line Out):** Use the *XtendPoint Central Manager* application to select an *XtendPoint* receiver, and then use the **Audio** screen to select the proper **HEADPHONE** audio source and **LINE OUT** audio source for the **Video In** of the *XtendPoint* transmitter. See xref.
  - ◆ **Analog audio (Line In):** Verify where the desired Line In is coming from, such as **LINE IN** from the *XtendPoint* transmitter on monitor 1, 2, 3, or 4). Alternatively, you may configure the Line In to follow the mouse position.
- **USB switching:** By default, you can use your mouse to switch between controllable sources. You may also use a keyboard shortcut to switch sources. You can disable mouse switching by selecting an *XtendPoint* receiver in the *XtendPoint Central Manager* application and then using the **Keyboard Shortcuts** sub-tab to enable the **Use only keyboard shortcuts for USB switching** option. See [“Keyboard Shortcuts Sub-Tab” on page 42](#).



### 3.7.2 Configuring Aggregator Mode

To configure Aggregator mode:

1. Access the OSD, as described in [“Accessing the OSD” on page 37](#).
2. In the **Receiver** tab, select the **Monitors** sub-tab, and then click the **Edit Physical Layout** button. See [“Monitors Sub-Tab” on page 41](#).

The **Change monitor layout** window appears.

3. Use the pull-down menu to select a layout for your displays.
4. Drag the desired displays into or out of the layout.
5. Click **OK** when you have finished creating the layout.
6. In the **Sources** tab, select **Configure** (next to **Aggregator mode**). See [“Configuring Aggregator Mode” on page 44](#).
7. Enter a name for the monitor layout in the **Layout name** field.
8. Click a video stream (tile) from the left-hand box, and then drag it into the proper display under **Add video streams**. Repeat this step for every stream you want to add to your layout.
9. Click **Apply** when you have finished the configuration.
10. Configure the analog audio source for the audio streams by selecting the proper options for the **HEADPHONE**, **LINE OUT**, and **Source** destination options. See [“Configuring Audio Settings” on page 95](#).
11. Click **Apply** when you have finished the configuration.

#### Note

Configuring audio options via the OSD may overwrite audio settings that were previously configured using the *XtendPoint Central Manager* application. You may skip Steps 9 and 10 if you have previously configured audio options using the application.



### 3.7.3 Editing Layout Video Streams

To change the video streams in your current monitor layout:

1. In your current configuration, click **Cancel**, and then select **Yes** to confirm.
2. In the **Sources** tab, click **Edit** (next to **Aggregator mode**). See [“Sources Tab” on page 38](#).
3. Change the display layout as described in [“Configuring Aggregator Mode” on page 44](#), and then click **OK**.
4. In the **Sources** tab, change the video streams and configure the analog audio source for those stream, and then click **Apply**.

### 3.7.4 Removing a Layout Video Stream

To remove a video stream from the monitor layout, right-click the video stream in the layout, and then drag it and drop it anywhere outside of the layout.

### 3.7.5 Removing a Layout

To remove a layout:

1. In the **Sources** tab, select the **Aggregator mode** layout that you want to remove.
2. Click **Remove** (next to **Aggregator mode**).  
A confirmation dialog appears.
3. Click **OK** to permanently remove the layout.



*This page intentionally left blank.*

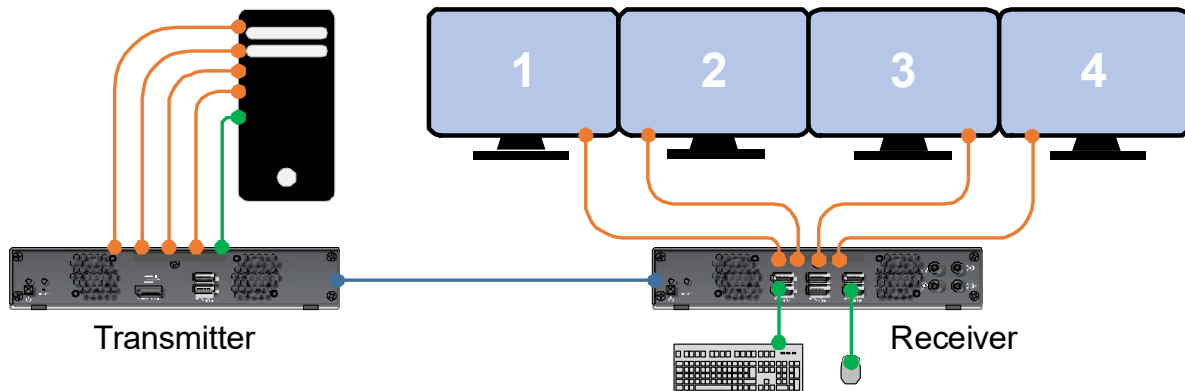




# CHAPTER 4

# OSD OPERATION (POINT-TO-POINT MODE)

In Point-to-Point mode, an *XtendPoint* transmitter connects directly to an *XtendPoint* receiver using either a copper or fiber-optic cable, as shown in [Figure 4-1](#).



**Figure 4-1** *XtendPoint* in Point-to-Point Mode

## 4.1 Prerequisites

Before configuring your *XtendPoint* devices to operate in Point-to-Point mode:

- Verify that all connectors are the correct type and that they are properly fastened. Never change connections when the *XtendPoint* device is powered on.
- Ensure that the *XtendPoint* transmitter and receiver devices are using the latest firmware version. All *XtendPoint* devices must be running the same firmware version. See [“Software & Firmware Updates” on page 99](#).
- The *XtendPoint* transmitter and receiver devices must be directly connected to each other. See [Figure 4-1](#).



- If any *XtendPoint* device has been operating in Networked mode, then that device must be reconfigured to operate in **Networked** mode. See [“Changing the Device Operation Mode” on page 107](#).

## 4.2 Available Software

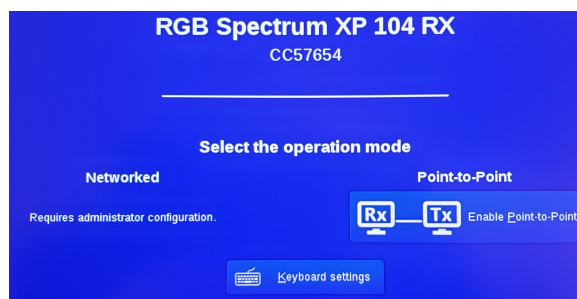
In Point-to-Point mode, *XtendPoint* devices can be controlled by the On-Screen Display (OSD).

## 4.3 Accessing the OSD

To access the OSD on *XtendPoint* receiver devices:

1. Enter the OSD shortcut on the keyboard. The default keyboard shortcut is the [SCROLL LOCK] key. See [“OSD Access Sub-Tab” on page 54](#) for information on changing this shortcut.

The **OSD Startup** screen appears. See [Figure 4-2](#).



**Figure 4-2** OSD Startup Screen

2. Select **Point-to-Point**.

The **Enabling Point-to-Point** popup appears.

3. Click **OK**, and then wait for the mode to be enabled.

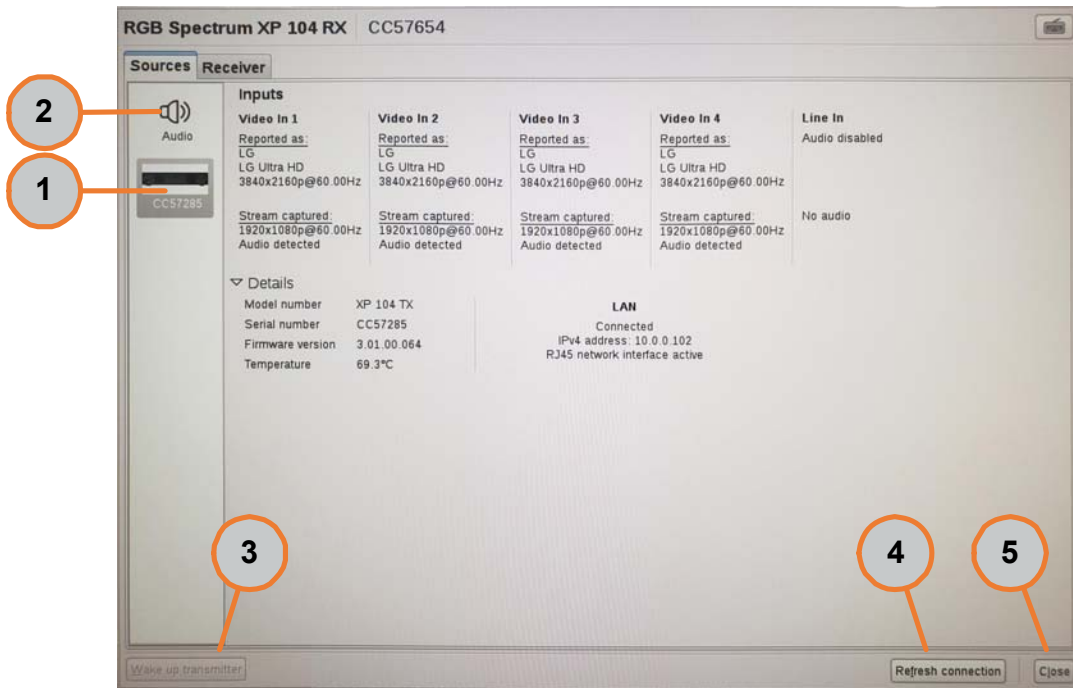
The screen will display a pair of rotating arrows and the message **Locating transmitter...** until the transmitter has been detected. It will then display the IP addresses for both *XtendPoint* devices.

The OSD interface appears with the **Sources** tab selected.



## 4.4 Sources Tab

The **Sources** tab of the OSD interface appears as shown in [Figure 4-3](#). This tab displays all of the available *XtendPoint* sources being provided by the *XtendPoint* transmitter.



**Figure 4-3** OSD Sources Tab (Point-to-Point Mode)

This tab contains the following basic functions:

- **XtendPoint Transmitter (1):** Selecting this device displays the following detailed information about the video and audio stream(s) being provided by that device:
  - ◆ Device name.
  - ◆ Device friendly name (if any).
  - ◆ Whether or not guest connections (that don't require a username or password) are allowed.
  - ◆ User who is connected to that device, if any.
  - ◆ Device information (Model number, serial number, firmware version, internal temperature)
  - ◆ Make, model, and resolution of each monitor displaying a video stream, the resolution of the captured video stream, and whether embedded audio has been detected.
  - ◆ Whether or not a separate analog audio stream (**Monitor**, **Line**, or **Microphone**) has been enabled and, if so, information about that audio stream.
  - ◆ Network interface(s) being used, interface type, and IP address.



- **Audio source (2):** Selecting this device displays the following detailed information about the audio source:
  - ◆ Headphone audio source (if any)
  - ◆ Line Out audio source (if any)
  - ◆ Microphone or Line In audio source (if any)
- **Wake up transmitter (3):** Clicking this button wakes up the *XtendPoint* transmitter if it turns off.
- **Refresh connection (4):** Clicking this button restores a lost connection between the *XtendPoint* transmitter and receiver devices. This process may take a few moments.
- **Close (5):** Clicking this button closes the OSD.

## 4.5 Receiver Tab

The **Receiver** tab of the OSD interface allows you to configure the *XtendPoint* receiver. This tab includes the following sub-tabs:

- [“Audio Sub-Tab” on page 51.](#)
- [“Monitors Sub-Tab” on page 52.](#)
- [“RS232 Sub-Tab” on page 53.](#)
- [“OSD Access Sub-Tab” on page 54.](#)
- [“More Options Sub-Tab” on page 55.](#)



### 4.5.1 Audio Sub-Tab

The **Audio** sub-tab is where you configure the following settings for the **Line In**, **Microphone**, **Line Out**, and **Headphones**. See [Figure 4-4](#).

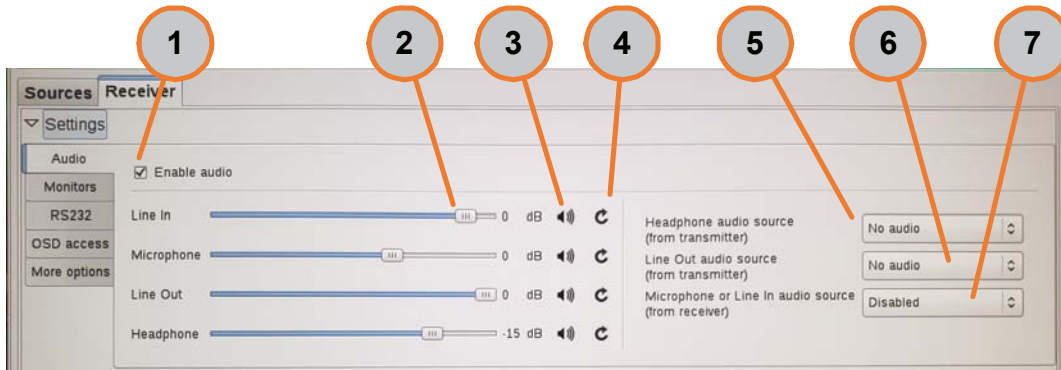


Figure 4-4 Audio Sub-Tab

This sub-tab contains the following functions for each audio device:

- **Enable audio (1):**
- **Level (2):** Click and drag the slider to increase or decrease the level (volume) for the selected audio device. An indicator on the right side of the slider indicates the current gain level, in decibels (dB).
- **Mute/Unmute (3):** Clicking the **Mute** icon (speaker) toggles the device audio on and off.
- **Default Level (4):** Clicking the **Default Level** icon (arrow) toggles the selected audio setting to its default level.
- **Headphone audio source (5):** Select the audio source for your headphones from the transmitter.
- **Line Out audio source (6):** Select the audio source for your Line Out device from the transmitter.
- **Microphone or Line In audio source (7):** Select the audio output for your Microphone or Line In device.

## 4.5.2 Monitors Sub-Tab

The **Monitors** sub-tab allows you to configure display layouts and other options. See [Figure 4-5](#).

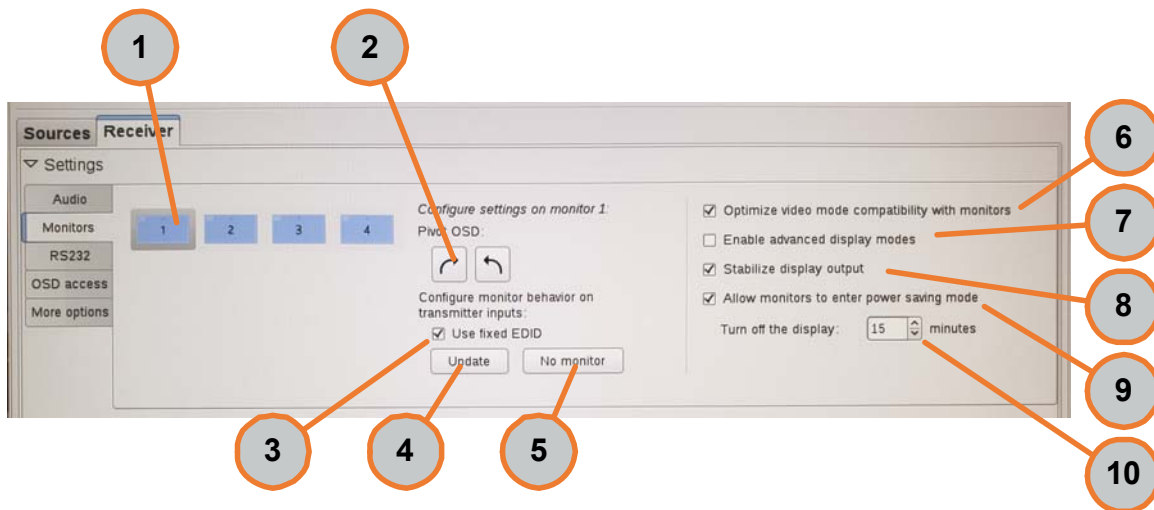


Figure 4-5 Monitors Sub-Tab

This sub-tab contains the following functions:

- **Monitors (1):** Displays the monitor(s) that can be connected to the Receiver. Clicking a monitor allows you to specify settings for that monitor.
- **Pivot OSD (2):** Clicking a **Rotate OSD** icon (arrow) rotates the OSD either left (counterclockwise) or right (clockwise) on the selected monitor (1), as appropriate.
- **Use fixed EDID (3):** Selecting a display and then checking this checkbox applies a fixed EDID to that display when you click the **Update** button (3). If you are using a 4K display, then verify that the *XtendPoint* transmitter is only reporting the supported display and that all other monitors are reported as disconnected. To report a display as disconnected, select that display, and then click the **No Monitor** button (4).
- **Update (4):** Updates EDID settings for the selected display.
- **No monitor (5):** Reports the selected display as inactive (not connected).
- **Optimize video mode compatibility with monitors (6):** Checking this checkbox optimizes display video parameters and EDID settings for maximum compatibility with the *XtendPoint* device. This option is enabled by default.
- **Enable advanced display modes (7):** Checking this checkbox enables the following advanced display modes:
  - ◆ 1 × 3840 × 2160 @ 60Hz + 1 × 1920 × 1080 @ 60Hz
  - ◆ 1 × 3840 × 1440 @ 60Hz + 1 × 1920 × 1080 @ 60Hz
  - ◆ 4 × 2560 × 1600 @ 60Hz
  - ◆ 4 × 1920 × 1200 @ 60Hz



- **Stabilize display output (8):** Checking this checkbox reduces flickering associated with video output. This option is enabled by default. See [“Troubleshooting” on page 104](#) for more information.
- **Allow monitors to enter power saving mode (9):** Checking this checkbox turns off the display(s) after the time period specified in the **Turn off the display** menu (9).
- **Turn off the display menu (10):** Allows you to specify when the monitors should turn off when the **Allow monitors to enter power saving mode** checkbox (8) is checked.

### 4.5.3 RS232 Sub-Tab

The **RS232** sub-tab allows you to configure RS232 settings. See [Figure 4-6](#).



**Figure 4-6 RS232 Sub-Tab**

This sub-tab contains the following functions:

- **Edit RS232 (1):** Click this button to modify your RS232 settings. This opens a new dialog box. To enable RS232, enable the **Enable RS232** option, edit the RS232 settings in the **Edit RS232 settings** window, and then click **OK**.
- **Status:** Status of the RS232 connection, which will be either **Enabled** or **Disabled**.
- **Baud rate** Speed used for the RS232 connection, in bits per seconds (or baud). The default is 115200.
- **Data bits:** Number of bits per block of data transmitted. The default is 8.
- **Parity** Type of parity bits used for the data transmitted (**None**, **Odd**, or **Even**). The default is **None**.
- **Stop bits:** Number of bits used to identify the end of a data block. The default is 1.
- **Flow control:** Signal type used to pause and resume data transmission (**None** or **RTS/CTS**). The default is **None**.



#### 4.5.4 OSD Access Sub-Tab

The **OSD Access** sub-tab allows you to configure the keyboard shortcut that enables you to access the OSD. See [Figure 4-7](#).

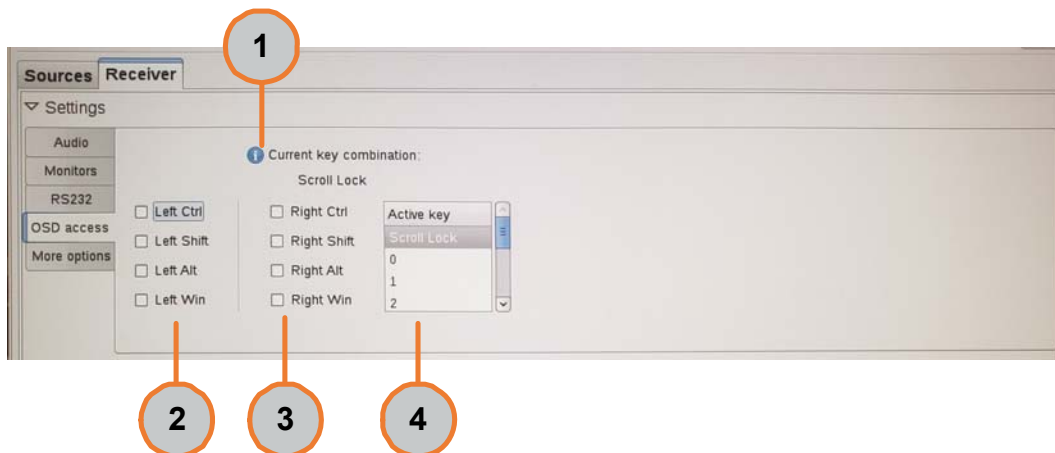


Figure 4-7 OSD Access Sub-tab

This sub-tab contains the following functions:

- **Current key combination (1):** Displays the current hotkey(s) that are used to access the OSD.
- **Left special key (2):** Check one or more of these checkbox(es) to configure one of the left-side special keys for OSD access.
- **Right special key (2):** Check one or more of these checkbox(es) to configure one of the right-side special keys for OSD access.
- **Other key (4):** Use this pull-down menu to select any other available key by clicking it. A gray highlight appears next to the selected key.

Examples:

- To require the user to press [LEFT CTRL]+[LEFT ALT]+[0] to access the OSD, check the **Left Ctrl** and **Left Alt** checkboxes, and then highlight **0** in the pull-down menu.
- To require the user to press [RIGHT WIN]+[SCROLL LOCK] to access the OSD, clear all of the **Left special key** checkboxes, check the **Right Win** checkbox, and then highlight **Scroll Lock** in the pull-down menu.
- To require the user to only press [SCROLL LOCK] to access the OSD, clear all of the **Left special key** and **Right special key** checkboxes, and then highlight **Scroll Lock** in the pull-down menu.





### 4.5.5 More Options Sub-Tab

The **OSD Access** sub-tab allows you to configure the keyboard shortcut that enables you to access the OSD. See [Figure 4-7](#).



Figure 4-8 More Options Sub-tab

This sub-tab contains the following functions:

- **Enable link redundancy (1):** Checking the **Enable link redundancy** checkbox ensures *XtendPoint* device uptime in case of network failure, when all devices are configured as described in [“Enabling Link Redundancy” on page 58](#).
- **Disable shutdown using power button (2):** Checking this checkbox disables the **POWER** button on the *XtendPoint* device.
- **Power recover policy (3):** Select one of the following:
  - ◆ **Never start:** Never start the *XtendPoint* device after a power loss.
  - ◆ **Always start:** Always start the *XtendPoint* device after a power loss.
  - ◆ **Restore last state:** Always start and restore the last state of the *XtendPoint* device after a power loss.
- **Reboot transmitter (4):** Clicking this button reboots the *XtendPoint* transmitter device.
- **Reboot receiver (5):** Clicking this button reboots the *XtendPoint* receiver device.



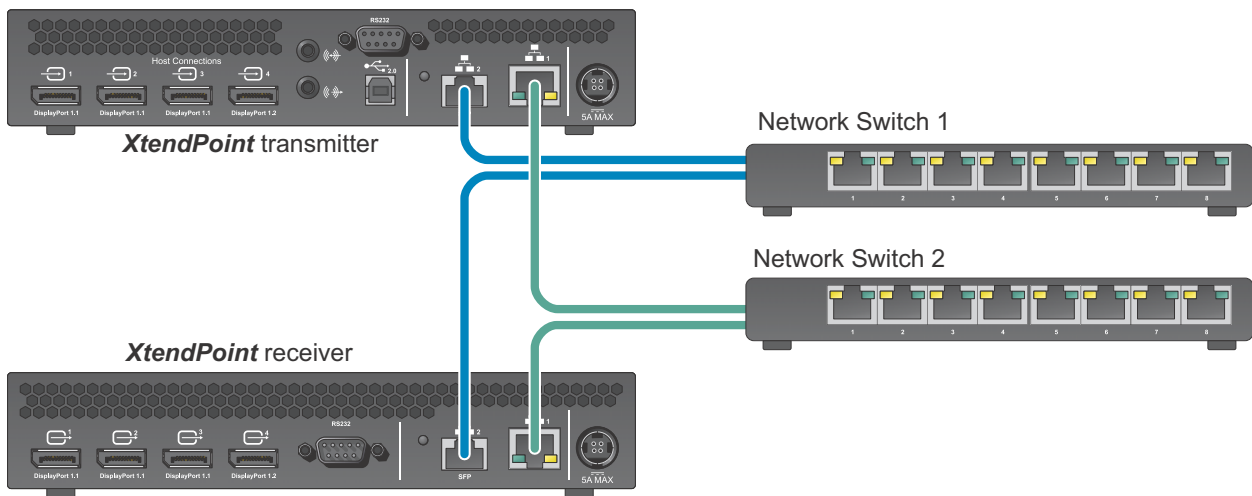
*This page intentionally left blank.*



# CHAPTER 5

# LINK REDUNDANCY

Link redundancy ensures that *XtendPoint* devices will continue working in the event of a network cable or switch failure by utilizing both network ports and dual network switches, as shown in [Figure 5-1](#).



**Figure 5-1** Redundant Network Connections

## 5.1 Prerequisites

The following requirements must be met before enabling link redundancy:

- All *XtendPoint* devices must be on the same subnet.
- Each *XtendPoint* device must be connected to a managed network switch pair.
- All LAN1 ports must be connected to **Network Switch 1**.
- All LAN2 ports must be connected to **Network Switch 2**.



- All LAN1 and LAN2 ports must be connected before enabling link redundancy. See [“Connections \(Receiver\)” on page 25](#) and [“Connections \(Transmitter\)” on page 29](#).

## 5.2 Enabling Link Redundancy

To enable link redundancy:

1. Verify that all *XtendPoint* devices have been connected as described in [Figure 5-1](#).
2. Enable the link redundancy feature, as follows:
  - ◆ **Networked mode:** In the *XtendPoint Central Manager* application, select the *XtendPoint* device, click **Network**, and then check the **Enable link redundancy** checkbox. See [“Enabling Link Redundancy” on page 78](#).
  - ◆ **Point-to-point mode:** Access the OSD as described in [“Accessing the OSD” on page 48](#), select **More options**, and then check the **Enable link redundancy** checkbox. See [“More Options Sub-Tab” on page 55](#).

The *XtendPoint* devices will automatically reboot in order for the change to take effect.

## 5.3 Disabling Link Redundancy

To disable link redundancy:

1. Disconnect the second network cable. See [“Connections \(Receiver\)” on page 25](#), [“Connections \(Transmitter\)” on page 29](#), and (if needed) [“Using an SFP Module” on page 33](#).
2. Verify that all *XtendPoint* devices are still detected on the network. See [“Validating Network Discovery” on page 36](#).
3. Disable the link redundancy feature, as follows:
  - ◆ **Networked mode:** In the *XtendPoint Central Manager* application, select the *XtendPoint* device, click **Network**, and then clear the **Enable link redundancy** checkbox. See [“Enabling Link Redundancy” on page 78](#).
  - ◆ **Point-to-point mode:** Access the OSD as described in [“Accessing the OSD” on page 48](#), select **More options**, and then clear the **Enable link redundancy** checkbox. See [“More Options Sub-Tab” on page 55](#).



# CHAPTER 6

# ***XTENDPOINT CENTRAL MANAGER APPLICATION***

The *XtendPoint Central Manager* application allows you to remotely manage, monitor, and configure *XtendPoint* devices operating in Networked mode.

## Note

The *XtendPoint Central Manager* application cannot be used when *XtendPoint* devices are running in Point-to-Point mode.

## 6.1 Prerequisites

Before using the *XtendPoint Central Manager* application:

- Verify that all *XtendPoint* devices are connected as described in [“Connections \(Receiver\)” on page 25](#), [“Connections \(Transmitter\)” on page 29](#), and [Figure 3-1](#), and that they meet all of the requirements found in [“Networked Mode Setup” on page 23](#).
- The host PC on which you will install the *XtendPoint Central Manager* application may require administrator privileges in order to proceed with the installation. Refer to your Windows® documentation and/or consult with your system administrator for assistance.
  - ◆ Windows Server 2016
  - ◆ Windows Server 2008 R2
  - ◆ Windows 10 (64-bit)
  - ◆ Windows 7
- If needed, obtain the latest version of both the *XtendPoint Central Manager* application and device firmware from RGB Spectrum, as described in [“Software & Firmware Updates” on page 99](#).



## 6.2 Installation

To install the *XtendPoint Central Manager* application:

1. Download the software from RGB Spectrum, as described in [“Software & Firmware Updates” on page 99](#).
2. Double-click the downloaded installer, and then follow the on-screen instructions to complete the installation.

### Note

You need only install one instance of the *XtendPoint Central Manager* application on your network.

## 6.3 Accessing the Application

To access the *XtendPoint Central Manager* application:

1. Select **Start > All Applications** (or **All Programs**) > **RGB Spectrum XtendPoint Central Manager > RGB Spectrum XtendPoint Central Manager**.

The *XtendPoint Central Manager* application interface appears. See [“Interface” on page 62](#).

### Note

If the application takes a long time to start, then you may need to configure a DNS server, as described in [“IP Addressing” on page 78](#).

2. In the **Main** menu, select **Log in**.

The **Log in** window appears.

3. Check the appropriate radio button to specify whether you are a **Local user** or a **Domain user**.
4. Enter the following credentials in the appropriate fields:
  - ◆ **Local user:** Username and password.
  - ◆ **Domain user:** Username, domain name of the server, and your network password.
5. Click **Apply**.

The *XtendPoint Central Manager* application will grant you the appropriate permissions based on your user access level. See [“Granting User Privileges” on page 73](#).

### 6.3.1 Logging Out

To log out, open the **Main** menu, and then select **Log out**.



### 6.3.2 User Access Levels

The *XtendPoint Central Manager* application supports two user levels: administrators and users.

#### **XTENDPOINT ADMINISTRATOR**

The *XtendPoint* administrator user:

- Creates device administrators for each *XtendPoint* device.
- Edits and manages Local user and Domain user accounts and their privileges.
- Allows device connections between *XtendPoint* transmitters and receivers.

#### **LOCAL USERS**

The *XtendPoint* administrator creates and manages local user accounts via the *XtendPoint Central Manager* application. Contact this administrator for assistance if you need a new device password or if you have lost your password.

You may change your password at any time. Passwords are case-sensitive and must consist of at least six (6) alphanumeric characters. To change your password:

1. Log out of all *XtendPoint* devices that you may be logged into, such as if you are using a device OSD. Changing your password while you are logged in to a device will prevent you from being able to access and use the OSD.
2. In the *XtendPoint* application, look at the status of the device for which you want to change your password. See [“Overwriting a Password” on page 73](#).
3. Either:
  - ◆ If the device status is **View only** (red device tile border), then change the device password to match your current password by selecting **Change password** from the *XtendPoint Central Manager* application **Main** menu.
  - ◆ Select the device tile, click the **Update password** icon (keyhole) in the upper right corner of the device tile, enter a valid device password, and then click **OK**.

Check the device tile border:

- ◆ If the tile border is black (**Modify settings**), then your password has been successfully changed.
- ◆ If the tile border is still red (**View only**), then contact the device administrator to change your user settings.

### 6.3.3 Domain users

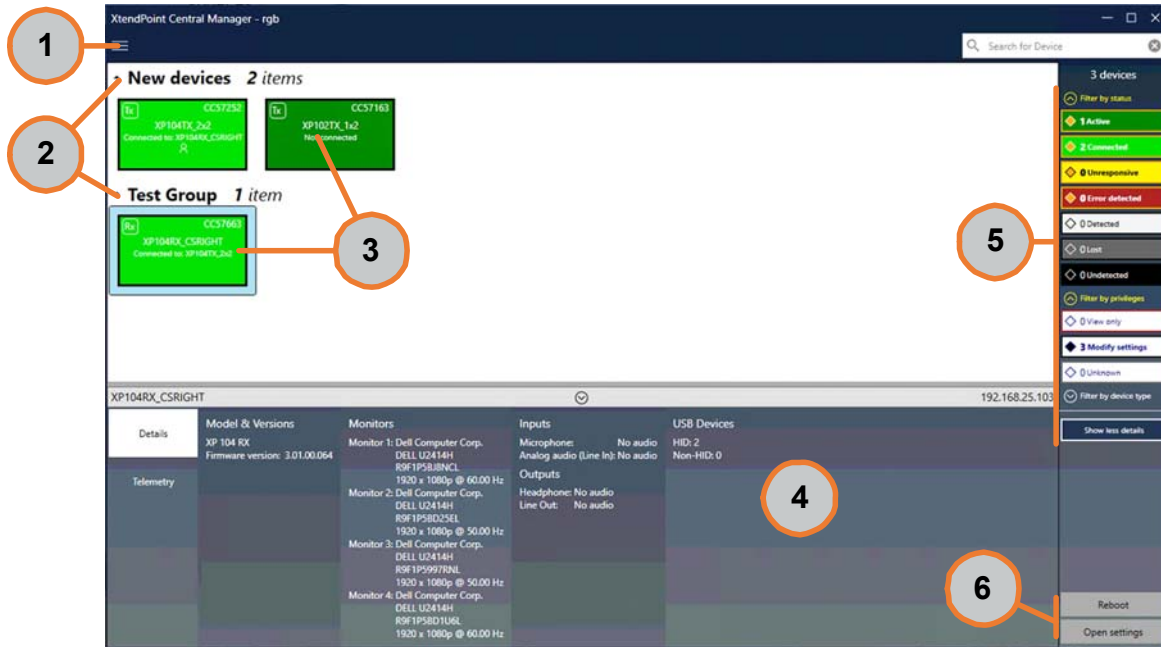
Network administrators define and manage domain users through an Active Directory® network. Both *XtendPoint* devices and the *XtendPoint* Central Manager application use Active Directory to authenticate the domain usernames and passwords. Contact your network administrator if you need a username and password, or if you have lost your password.



The *XtendPoint Central Manager* application grants a domain user who belongs to a user group the highest privilege available as either a user group member or as an individual user. Contact your network administrator for additional information.

## 6.4 Interface

**Figure 6-1** shows the main *XtendPoint Central Manager* application interface:



**Figure 6-1** *XtendPoint Central Manager* Interface

This interface contains the following basic functions

- **Main menu (1):** Contains user and password management options. See [“Main Menu” on page 63](#).
- **Device groups (2):** *XtendPoint* devices appear as colored tiles that are sorted into groups. See [“Device Groups” on page 64](#).
- **Device tiles (3):** Each *XtendPoint* device appears as a colored tile. See [“Device Tiles” on page 65](#). Right-clicking a device tile accesses the **Shortcut** menu. See [“Shortcut Menu” on page 63](#).
- **Information dashboard (4):** Provides detailed device information, such as the device type, serial number, firmware version, name, IP address, date, time, and status. See [“Information Dashboard” on page 66](#).

### Note

The *XtendPoint Central Manager* application updates the device date and time every two (2) seconds.





- **Device filtering (5):** *XtendPoint* devices are filtered by status, user privileges, and type. You can also choose to show more or less information on your device tiles. See [“Filtering Device Tiles” on page 66](#).
- **Basic functions (6):** These buttons access basic *XtendPoint Central Manager* application functions. See [“Basic Functions” on page 64](#).

### 6.4.1 Main Menu

The **Main** menu contains the following options:

- **Log in/out:** Either:
  - ◆ Log in to an *XtendPoint* device by entering the username, password, and (if applicable) domain for that device.
  - ◆ Log out of an *XtendPoint* device.
- **Manual device discovery:** Use this option if automatic discovery does not detect all of the *XtendPoint* devices on the network. See [“Manual Device Discovery” on page 69](#).
- **Connection broker:** Allow connections between *XtendPoint* transmitters and receivers. See [“Connection Broker” on page 70](#).
- **Change password:** Changes the password for non-domain *XtendPoint* devices. See [“Overwriting a Password” on page 73](#).
- **Manage users:** Manage *XtendPoint* device users. See [“Managing Users” on page 72](#).
- **Quick setup:** Allows quick device/connection configuration. See [“Quick Device Setup” on page 68](#).
- **About:** Provides version and other information about the *XtendPoint Central Manager* application.

### 6.4.2 Shortcut Menu

Right-clicking a device tile opens the **Shortcut** menu, which will display some or all of the following functions depending on the device and setup:

- **Reboot:** Reboots the device and keeps all settings, such as the IP address, password, and allowed connections. See [“Rebooting/Resetting an XtendPoint Device” on page 103](#).
- **Multi-device settings:** Selecting multiple *XtendPoint* receivers and then selecting this option opens the available settings for those receivers. You may click **Modify settings** to change the settings for those receivers. See [“Receiver Settings” on page 81](#).
- **Attempt wake:** Wakes up a sleeping *XtendPoint* transmitter device.
- **Open settings:** Opens the settings for the selected device. See [“Transmitter Settings” on page 74](#) and [“Receiver Settings” on page 81](#).
- **Remove lost devices:** Removes *XtendPoint* devices that are listed as either **Lost** (dark gray) or **Undetected** (Black).
- **Move to group:** Assigns the selected *XtendPoint* device to a group. See [“Device Groups” on page 64](#).



### 6.4.3 Basic Functions

The following buttons provide basic functions for managing your *XtendPoint Central Manager* software.

- **Reboot:** Reboots the device and keeps all settings, such as the IP address, password, and allowed connections. See [“Rebooting/Resetting an XtendPoint Device” on page 103](#).
- **Apply / Cancel:** Applies or cancels changes, as appropriate.
- **Back:** Returns to the main interface. See [“Interface” on page 62](#).
- **Open settings:** Opens the settings for the selected device. See [“Transmitter Settings” on page 74](#) and [“Receiver Settings” on page 81](#).
- **Multi-device settings:** Selecting multiple *XtendPoint* receivers and then selecting this option opens the available settings for those receivers. You may click **Modify settings** to change the settings for those receivers. See [“Receiver Settings” on page 81](#).
- **Undo changes:** Undoes the most recent change.

## 6.5 XtendPoint Devices

The *XtendPoint Central Manager* application depicts *XtendPoint* devices as colored tiles that are sorted into groups, as described in [“Device Groups” on page 64](#). Each device tile indicates the status of that device, as described in [“Device Tiles” on page 65](#).

### 6.5.1 Device Groups

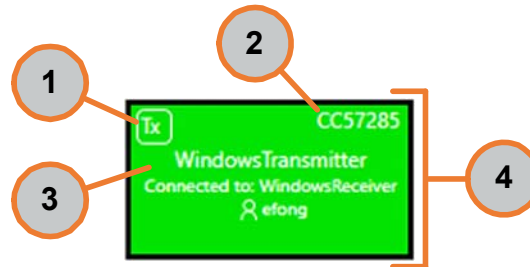
The *XtendPoint Central Manager* application groups device tiles into groups. For example, newly detected devices appear in the **New devices** group, including when you launch the application for the first time. To manage device groups:

- **Expand/collapse a device group:** Clicking the arrow icon next to the group name expands or collapses that group.
- **Move device to a new group:** Click and drag a device tile from one group to another group to reassign that device.
- **Create a new group:** Right-click a tile, select **Move to group > Create a new device group**, and then enter a name for the new group. The new group appears in the main interface with the selected tile.
- **Organize a group:** Right-click a group name, and then select a location for that group in the list of groups.
- **Rename a group:** Double-click the group name, enter a new name for the group, and then press [ENTER].
- **Delete a group:** Move all of the device tiles out of the group you are deleting.



## 6.5.2 Device Tiles

[Figure 6-2](#) displays a typical device tile.



**Figure 6-2** XtendPoint Device Tile

Each device tile displays the following information about the device:

- **Device type (1):** This will be either:
  - ◆ **Tx:** Transmitter
  - ◆ **Rx:** Receiver
- **Serial number (2):** Serial number of the device.
- **Device Information (3):** Device name, serial number, or IP address, depending on the device status. It also indicates whether the device is Connected to another device (and the name of the connected device or user name) or Not connected to another device.
- **Device status (4):** The tile and border color depict the current device status. See [“Device Status” on page 66](#).
- **Version mismatch (5):** A yellow warning icon appears if there is a mismatch between the XtendPoint Central Manager application version and the firmware version installed on the XtendPoint device. See [“Software & Firmware Updates” on page 99](#).

## MANAGING DEVICE TILES

You can manage device tiles as follows:

- **Reorder tiles:** Click and drag the device icon to a different location within the same group.
- **Move tile to a different group:** Either click and drag the device icon to the new group, or right-click the device and then select a group. To reorder your tiles, drag a tile to a new location.
- **Access device settings:** Right-click the device tile, and then select **Open settings**. See [“Transmitter Settings” on page 74](#) and [“Receiver Settings” on page 81](#).
- **Rename device:** Select **Open settings**, and then enter a new **Name** for the device.



- **Delete lost/undetected device:** Either:
  - ◆ Click the **Delete** icon (X).
  - ◆ Right-click the tile, and then select **Remove lost devices**.

### FILTERING DEVICE TILES

XtendPoint devices can be filtered by status, privileges, and type. The number at the top indicates the total number of devices. The number in the colored tiles indicate the number of devices with that status.

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

### SHOWING DETAILS

To specify the amount of information displayed on device tiles:

- **Show less details:** Selecting this option only displays the device name unless the device is selected or you mouse over the device tile.
- **Show more details:** Displays all device information described in [“Device Tiles” on page 65](#).

### 6.5.3 Information Dashboard

Selecting a device and then clicking the **Information Dashboard** icon (see [“Information Dashboard” on page 66](#)) opens the **Information Dashboard**, which provides detailed information about that device, such as the device type and firmware version, telemetry, detected monitors, inputs, and streaming statistics. See [Figure 6-3](#).

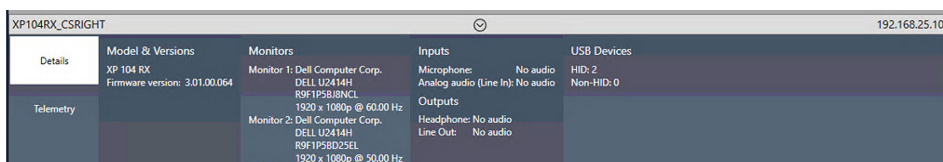


Figure 6-3 Information Dashboard

### 6.5.4 Device Tile and Border Colors

The device tile and border colors indicate the status and user access privileges for each XtendPoint device, respectively.

### DEVICE STATUS

The color of a device tile indicates the device status, as follows:

- **Active (dark green):** The XtendPoint device is active and working properly. The indication Not connected appears if the device is not connected to another device.
- **Connected (bright green):** Connection between a transmitter device and receiver device is allowed. The indication **Connected** and the name of the connected device appear here, if applicable. See [“Connection Broker Icons” on page 71](#).



- **Unresponsive (yellow):** The device is not responding.
- **Error (red):** The device has experienced an error and cannot be accessed by the *XtendPoint Central Manager* application. Try rebooting the device, as described in [“Rebooting/Resetting an XtendPoint Device” on page 103](#).
- **Detected (light gray):** The device is present on the network but is not initialized. The device IP address appears on the tile.
- **Lost (dark gray):** The device was previously detected by the *XtendPoint Central Manager* application but is no longer being detected. The last-known device IP address appears on the tile. If the device is a transmitter and you cannot reboot it, then try right-clicking the tile and then selecting **Attempt wake**.
- **Undetected (black):** The device cannot be detected. The last-known device IP address appears on the tile.

## USER ACCESS PRIVILEGES

The color of a device tile border indicates the user access privileges for that device, as follows

- **View only (solid red):** The device can be accessed, but settings cannot be modified unless you have a valid username and password for that device.
- **No administrator (dashed red):** The device can be accessed, but settings cannot be modified unless you take ownership of that device. See [“Full Device Setup” on page 68](#).
- **Unknown (gray border):** The device can be accessed but has no password. You are prompted to create a password when you click **Apply**. Creating a password changes the device user access to **View only**.
- **Modify settings (black border):** Device can be accessed and the settings can be modified, provided you have a valid username and password.



## 6.6 Device Setup

You may use either of the following methods to set up *XtendPoint* devices in the *XtendPoint Central Manager* application:

- **Quick:** See [“Quick Device Setup” on page 68](#).
- **Full:** See [“Full Device Setup” on page 68](#).

### 6.6.1 Quick Device Setup

Quick setup launches automatically the first time you open the *XtendPoint Central Manager* application. You can also access the quick setup checklist from the **Main** menu by selecting **Quick setup** to open the **Quick setup** window. See [Figure 6-4](#).

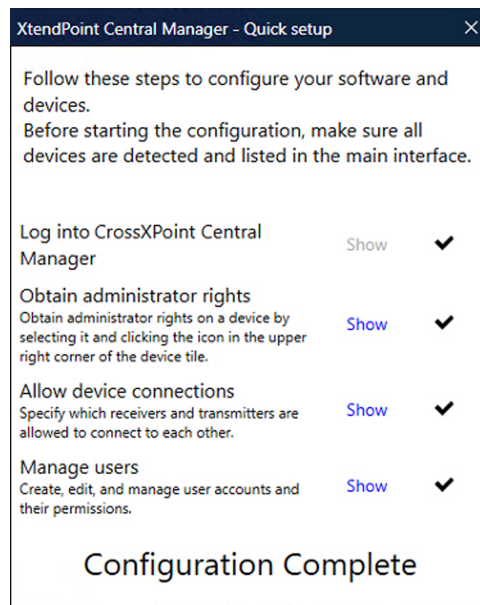
**Figure 6-4 Quick Setup Window (right)**

To set up one or more *XtendPoint* device(s) using the quick device setup method:

1. Verify that all *XtendPoint* devices are detected and listed in the main interface. See [“Interface” on page 62](#).
2. Click **Show** next to the first item in the list.

A black check mark appears once that item has been configured.

3. Repeat Step 2 for each remaining item in the list.



### 6.6.2 Full Device Setup

To set up one or more *XtendPoint* device(s) using the full device setup method:

1. Verify that all prerequisites have been met. See [“Prerequisites” on page 59](#).
2. Log into the *XtendPoint Central Manager* application by selecting **Login** from the **Main** menu, selecting the appropriate user type, and then providing the appropriate credentials.
  - ◆ **Local user:** Username and password.
  - ◆ **Domain user:** Username, server domain name, and password.
3. Verify that all *XtendPoint* devices have been detected and appear in the main interface. If needed, you may discover devices manually, as described in [“Manual Device Discovery” on page 69](#).



4. If the device status is **No device administrator**, then click the **Take ownership** icon (shield with person) in the upper right corner of the device tile, and then click **Yes**.
5. From the **Main** menu, select **Connection broker**.
6. If you previously created a group for the *XtendPoint* devices, then click **Filter by group**, select the group, and then click **Close**. Click **Apply** to save your changes.
7. Click the **Allow connections** icon (check mark) to allow connections between *XtendPoint* transmitter and receiver devices.
8. From the **Main** menu, select **Manage users**.
9. Click **Add user**, enter a user name. and then specify whether that user is a **Local user** or a **Domain user**. Click **OK** to finish adding the new user.
10. Click the **Add** icon (plus sign in a circle) for each device you want to add a user to. Adding a user to a device allows the user to log into a receiver and connect to a transmitter. To allow the connection to a transmitter, the connection must also be allowed in the Connection broker. See [“Connection Broker” on page 70](#).

You can view the users and connections allowed for a device by selecting that device next to **Display users for** when assigning privileges.

11. Repeat Steps 9 and 10 for each additional user you want to add.
12. Click **Apply** when you have finished adding users. This creates a **Local users** summary and generates a device password for each local user.
13. You may either:
  - ◆ Copy the summary to the clipboard by clicking the **Copy to clipboard** icon (sheets).
  - ◆ Close the dialog box by clicking **OK**.

**Note**

See [“Managing Users” on page 72](#) for more information on managing users.

## 6.7 Manual Device Discovery

The *XtendPoint Central Manager* application automatically detects new devices in the subnet. If one or more device(s) are not detected, then you can use the *XtendPoint Central Manager* application to manually scan one or more specific IP address(es) or an IP address range for *XtendPoint* devices.

**Note**

Slow responses from certain routers may cause slow automatic device detection in the *XtendPoint Central Manager* application.



To manually scan for XtendPoint devices:

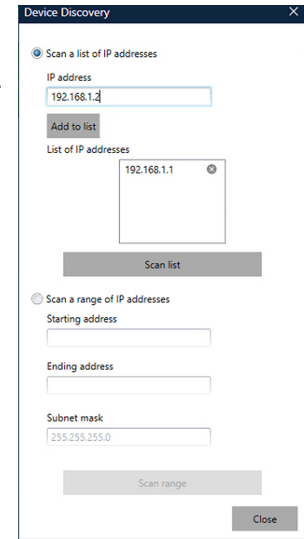
1. From the XtendPoint Main menu, select **Manual device discovery**.

The **Device Discovery** window appears. See [Figure 6-5](#).

**Figure 6-5 Device Discovery Window (right)**

2. Either:

- ◆ Select **Scan a list of IP addresses**, enter an IP address, and then click **Add to list**. Click **Scan list** when you are ready to scan the list of IP addresses.
- ◆ Select **Scan a range of IP addresses**, enter the starting and ending IP addresses of the range you want to scan plus the subnet mask, and then click **Scan range**.



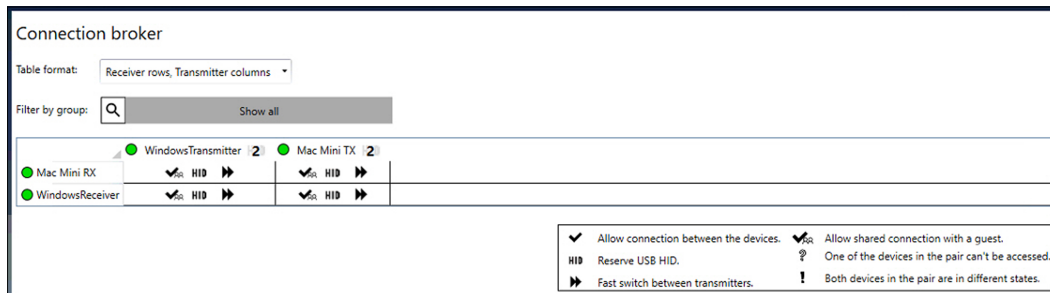
**Notes**

- ◆ If you are scanning IP addresses, then you can enter another IP address after clicking **Add to list**.
- ◆ If you are scanning an IP address range, then contact your network administrator to provide the subnet to use, if you do not know it already.
- ◆ The **Scan range** button is disabled if you enter an invalid starting and/or ending IP address.

The XtendPoint Central Manager application scans the specified IP address(es) or range, and adds any newly discovered XtendPoint device to the **New devices** group.

**6.8 Connection Broker**

The connection broker allows you to allow and route connections between XtendPoint transmitter and receiver devices. See [Figure 6-6](#).



**Figure 6-6 Connection Broker**





### 6.8.1 Connection Broker Icons

[Table 6-1](#) lists the connection broker icons and their meaning.

**Table 6-1 Connection Broker Icons**

Icon	Meaning
	Connection between a transmitter and receiver is allowed.
	Devices are available, but a connection between a transmitter and receiver hasn't been allowed.
<b>HID</b>	Reserve USB HID (Human Interface Device). This allows you to reserve the USB port so that a previously-connected keyboard or mouse can connect more quickly. The connection broker allows you up to 16 USB reservations and lists the number of HID USB devices.
HID	USB HID is not reserved.
	Shared connection with a guest is allowed.
	Devices may be unresponsive, lost, or undetected.
	Conflict between a transmitter and receiver is detected.
	Fast switching between transmitters is enabled.
	Fast switching between transmitters is not enabled.

### 6.8.2 Allowing Device Connections

To allow connections between *XtendPoint* transmitter and receiver devices:

1. From the *XtendPoint Central Manager* **Main** menu, select **Connection broker**.

The **Connection broker** screen appears.

2. If you created a group for the *XtendPoint* devices, then click **Filter by group**, select the group, and then click **Close**. See [“Filtering Device Tiles” on page 66](#).
3. Click the **Allow connection** icon (white check mark) icon to allow the connection between your *XtendPoint* transmitter and receiver devices.
4. Click **Apply** to apply your changes.



## 6.9 Managing Users

Users must be added to a device and given privileges in order for them to be able to access and use an *XtendPoint* device.

### 6.9.1 Adding a User

Users can log into an *XtendPoint* receiver and then connect to an *XtendPoint* transmitter, so long as that connection has been allowed in the connection broker. See [“Connection Broker” on page 70](#). To add a user to a device:

1. From the *XtendPoint Central Manager* **Main** menu, select **Manage users**.

1. The **Add or remove users...** screen appears.

2. Click **Add new user**.

The **Add new user** window appears.

3. Specify whether the new user is a **Local user** or a **Domain user** by clicking the appropriate button.

4. Enter a username and, if the user is a domain user, the domain to use to authenticate that user.

5. Click **Add user**.

6. Click the **Add** icon (plus sign) icon for each device you want to add a user to, and then select either **Administrator** or **User**.

When granting privileges, you can restrict your view to only the users and connections allowed for a device by selecting that device next to **Display users for**.

7. Repeat Steps 2 through 6 for each user you want to add.

8. Click **Apply**.

The *XtendPoint Central Manager* application creates a summary of the newly created local users and generates a device password for each local user.

You may now:

- Copy the summary to the clipboard by clicking the **Copy to clipboard** icon (sheets).
- Close the dialog box by clicking **OK**.



### 6.9.2 Deleting a User

To delete a user from a device:

1. Select the user you want to delete, and then click **Delete user from device**.
2. Click **Apply**.

### 6.9.3 Overwriting a Password

To overwrite the password for a local user:

1. Select the user whose password you want to overwrite, and then click **Overwrite password**.
2. Enter the new password, and then confirm the new password. Pass words are case-sensitive.
3. Click **Change**, and then click **Apply**..

#### Notes

- ◆ This feature is only valid for local users; it does not work for domain users.
- ◆ Note the new password to prevent loss.

### 6.9.4 Granting User Privileges

You can grant device **Administrator** or **User** privileges to a user. To do this:

1. From the *XtendPoint Central Manager Main* menu, select **Manage users**.

The **Add or remove users...** screen appears.

2. Click the table cell that corresponds to the user/device for which you want to update privileges. In this example, you will be adjusting the privileges of user **efong2** on device **Mac Mini TX**. See [Figure 6-7](#).

	Mac Mini RX CC64653	WindowsReceiver CC57654	WindowsTransmitter CC57285	Mac Mini TX CC57176	
admin					
efong					
efong2					
RGB\efong					

Privileges

- Administrator
- User
- Automatic login

**Figure 6-7 User Privileges Example**

3. Click the appropriate **Privileges** icon (**Administrator** or **User**).
4. Click **Apply**.

### 6.9.5 Automatic Log In

To allow a local user to automatically log in to the OSD on an *XtendPoint* device, check the **Automatic login** checkbox.



## 6.10 Transmitter Settings

You can specify the following settings for an *XtendPoint* transmitter device by double-clicking that device and then selecting one of the following options from the left-hand menu:

- **Connection:** See [“Connection” on page 74](#).
- **EDID:** See [“EDID” on page 75](#).
- **Streaming:** See [“Streaming” on page 77](#).
- **Network:** See [“Network” on page 78](#).
- **Date and time:** See [“Date and Time” on page 79](#).
- **More options:** See [“More Options” on page 80](#).

### 6.10.1 Connection

Selecting **Connection** in the left-hand menu opens the **Sharing mode** screen. See [Figure 6-8](#).



**Figure 6-8** Sharing Mode Screen

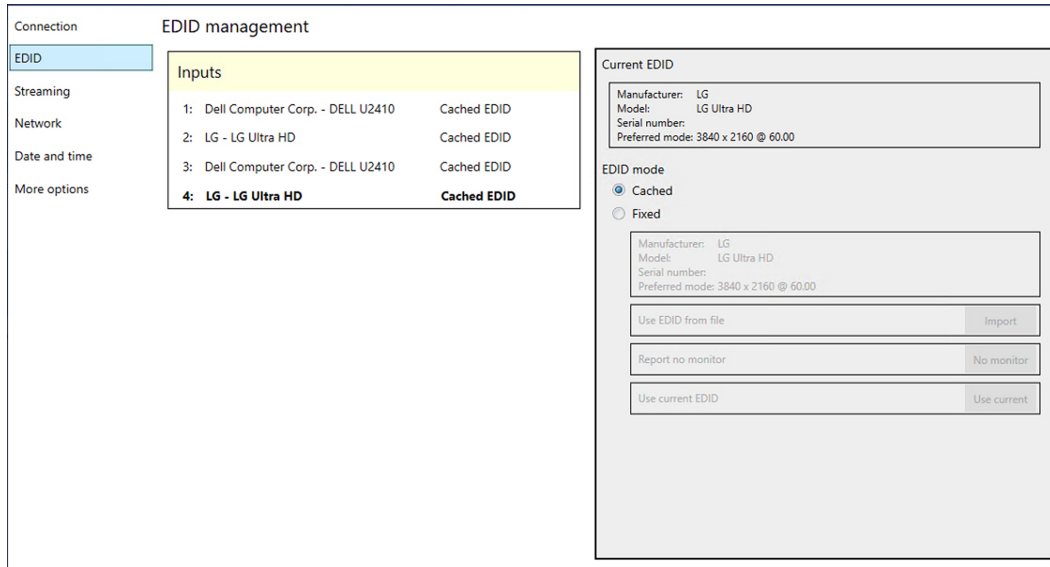
The following settings configure how the *XtendPoint* transmitter is shared with a guest:

- **Guest connections:** The following options are available:
  - ◆ **No guest allowed:** Do not allow guest connections.
  - ◆ **Guest allowed (without USB devices):** Allow guest connections. The first user connected to the system controls the keyboard and mouse. Guest connections do not control the USB devices.
  - ◆ **Guest allowed (with USB devices):** Allow guest connections. Guests can control the keyboard and mouse.
- **Show name of user connected:** Show the name of the user who is connected to the device.
- **Show previews in OSD when a user is connected:** Show a monitor preview in the OSD when a user is connected to the selected *XtendPoint* receiver.



## 6.10.2 EDID

Selecting **EDID** in the left-hand menu opens the **EDID management** screen. See [Figure 6-9](#). EDID management features enable you to specify the input connector EDID settings used by the *XtendPoint* device



**Figure 6-9 EDID Management Window**

### USING A CACHED EDID

- If a monitor is connected to an output connector on the *XtendPoint* receiver, then the *XtendPoint* transmitter will use the EDID settings of that monitor.
- If a monitor is not connected to an output connector on the *XtendPoint* receiver (such as if the monitor was disconnected), then the *XtendPoint* transmitter uses the EDID settings of the monitor that was last connected to that output connector.

### USING A FIXED EDID

RGB Spectrum recommends using a fixed EDID on all *XtendPoint* transmitter inputs (both used and unused) in order to avoid unwanted changes to the source system.

- If a monitor is connected to an output connector on the *XtendPoint* receiver, then the *XtendPoint* transmitter uses the EDID settings of that monitor.
- If a monitor is not connected to an output connector on the receiver, then no EDID is applied.



## USING THE EDID FROM A FILE

To use the EDID from a file:

1. Verify that a file exists that contains exported EDID settings (see [“Exporting EDID Settings” on page 83](#)).
2. Select the monitor (output) that you want to use.
3. Make sure that the output is set to use a **Fixed EDID**.
4. Click **Import**.

The **Import settings from file** window opens.

5. Browse to the location where you saved your EDID file, and then open that EDID file (.bin).
6. Click **Apply**.

## REPORTING NO MONITOR

The *XtendPoint* transmitter may report no more than the number of monitors supported when using the following resolutions:

- **3840 × 2160 @ 60 Hz:** One (1) monitor on Connector 4.
- **3840 × 2160 @ 30 Hz:** Two (2) monitors.
- **1920 × 1200 @ 60 Hz:** Three (3) monitors.
- **1920 × 1080 @ 60 Hz (or lower):** Four (4) monitors.

The *XtendPoint* transmitter must report the other monitors as **Disconnected** (no monitor). To configure the transmitter to report the disconnected monitors:

From the list, select the monitor (output) that is not being used by the *XtendPoint* transmitter. Make sure the output is set to use a **Fixed EDID**.

1. Next to **Report no monitor**, click **No monitor**.
2. Repeat Steps 1 and 2 for each additional monitor (output) that is not used by the transmitter.
3. Click **Apply**.

## USING THE CURRENT EDID

To use the current EDID:

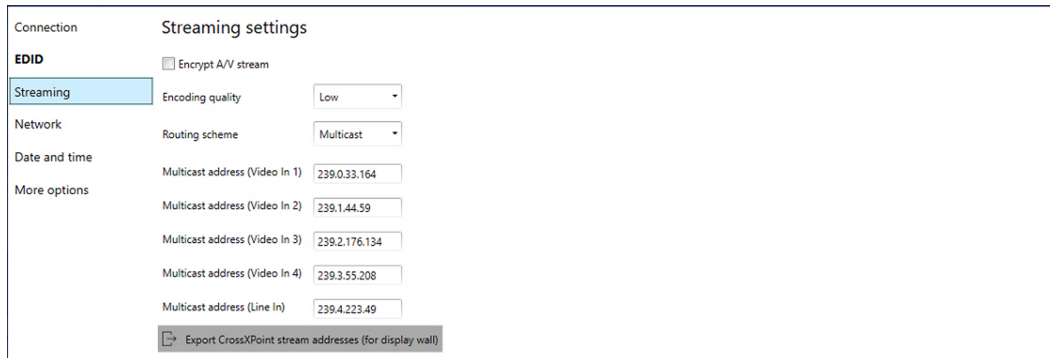
1. From the list, select the monitor (output) with the desired EDID.
2. Set the output to **Use a Fixed EDID**.



3. Next to **Use current EDID**, click **Use current**.
4. Click **Apply**.

### 6.10.3 Streaming

Selecting **Streaming** in the left-hand menu opens the **Streaming settings** screen. See [Figure 6-10](#).



**Figure 6-10 Streaming Settings Window**

The following streaming and encryption settings are available for *XtendPoint* transmitter devices:

- **Encrypt A/V stream:** Secure the stream. This option is enabled by default.
- **Encoding quality:** Set the encoding quality to **Low**, **Typical** (default), **High**, or **Very high**.
- **Routing scheme:** Select either:
  - ◆ **Unicast:** Establishes a direct connection between a transmitter and a receiver. You can specify the destination IP address for the stream.
  - ◆ **Multicast:** A single stream is received by all receivers that are connected to the same multicast address receive a single stream, thereby allowing the transmitter to use less bandwidth. Enter the **Multicast address** for each port of the stream. This option may require additional network configuration to support the transmission protocol, because some network switches and routers can block multicast signals. This is the default. Contact your network administrator.

#### Notes

RGB Spectrum recommends using a router with multicast addressing support and switches with IGMP v2 support for multicast streams.

### 6.10.4 Exporting *XtendPoint* Stream Addresses

You must export the *XtendPoint* stream addresses in order to use *XtendPoint* transmitters with a display wall product, such as a Galileo. To do this:

1. Click **Export *XtendPoint* stream addresses**.

The **Save settings to file** window appears.



2. Browse to the location where you want to save the file.
3. When prompted, enter a **File name**, and then click **Save**.

### 6.10.5 Network

Selecting **Network** in the left-hand menu opens the **Network settings** screen. See [Figure 6-11](#). These settings configure the **LAN1** and **LAN2** connections and the *XtendPoint* device IP address.

The screenshot shows the Network Settings screen with a left-hand menu containing 'Connection', 'EDID', 'Streaming', 'Network' (highlighted), 'Date and time', and 'More options'. At the top, there is a checkbox for 'Enable link redundancy' which is checked. Below this, the settings are divided into two columns: LAN 1 and LAN 2. LAN 1 is active, while LAN 2 is marked '(ethernet interface not used)'. For each LAN, there are radio buttons for 'Dynamic IP address (DHCP)' (selected) and 'Static IP address'. Below these are input fields for MTU (set to 1500), IPv4 address, IPv4 netmask, IPv4 gateway, and DNS servers. For LAN 1, the IPv4 address is 192.168.34.68, netmask is 255.255.255.0, gateway is 192.168.34.1, and DNS servers are 192.168.1.250 and 192.168.1.249.

**Figure 6-11** Network Settings Screen

#### Notes

You must reboot the *XtendPoint* device after changing either the device IP address or the method of assigning IP addresses. See [“Rebooting/Resetting an XtendPoint Device” on page 103](#).

### ENABLING LINK REDUNDANCY

To enable link redundancy:

1. Verify that all *XtendPoint* devices are on the same subnet and connected to a switch. If you are using multiple switches, then all switches must be connected to each other. See [“Prerequisites” on page 57](#).
2. Enable the **Enable link redundancy** option to ensure network availability in case of network cable or switch failure. In the case of a network cable or switch failure, your device will automatically switch to a secondary network path. Switching may take up to five (5) seconds, depending on network configuration.
3. Verify that link redundancy is enabled on both the *XtendPoint* transmitter and receiver devices.

### IP ADDRESSING

By default, *XtendPoint* uses dynamic IP addresses (DHCP). The *XtendPoint Central Manager* application uses the UPnP (Universal Plug and Play) protocol to automatically detect all *XtendPoint* devices in the same subnet. Alternatively, once the *XtendPoint Central Manager* application has detected a device, you can manually assign a static IP address to your device by specifying the following parameters:

- **IPv4 address:** This will typically be between 192.168.0.0 and 192.168.255.255. RGB Spectrum recommends assigning an IP address within the existing network subnet.





- **IPv4 netmask:** The netmask that defines the IP addresses in your subnet. The default subnet mask is 255 . 255 . 255 . 0.
- **IPv4 gateway:** Network device that forwards traffic outside the local network, such as a router or switch.
- **DNS servers:** IP address of one or more Domain Name System (DNS) server(s). When entering multiple IP addresses, be sure to separate each IP address a space.

Contact your network administrator for assistance, if needed.

### 6.10.6 Date and Time

Selecting **Date and time** in the left-hand menu opens the **Date and time** screen. See [Figure 6-12](#).

Connection

EDID

Streaming

Network

**Date and time**

More options

NTP server: Disabled

NTP server URL: time.matrox.com

Time zone: (UTC-8:00) Los Angeles

**Date and time**

Use current date and time settings of the device

Use date and time of the current system

Use the following date and time

Wednesday, May 27, 2020 6:45:45 PM

Enable synchronization with an NTP (Network Time Protocol) server

NTP server URL: time.matrox.com

Disable synchronization with an NTP server

**Time zone**

Use current time zone of the device

Use the following time zone

(UTC-8:00) Los Angeles

**Figure 6-12** Date and Time Screen

See [“Device Date and Time” on page 93](#).

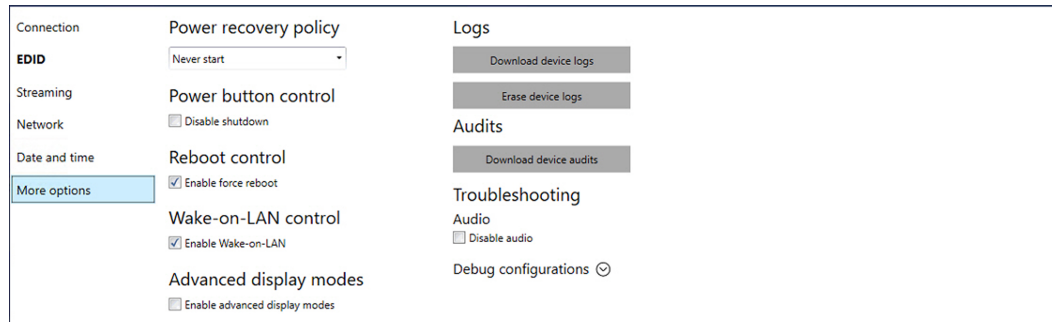
#### Note

The *XtendPoint Central Manager* application updates the device date and time every two (2) seconds.



### 6.10.7 More Options

Selecting **More options** in the left-hand menu opens the **More options** screen. See [Figure 6-13](#).



**Figure 6-13** More Options Screen

The following additional options are available for *XtendPoint* transmitter devices:

#### Notes

Some options may not be available for all *XtendPoint* transmitters.

- **Power recovery policy:** Defines how the device behaves after a power loss. The available options are:
  - ◆ **Never start:** Never turn on the *XtendPoint* device after a power loss.
  - ◆ **Always start:** Always turn on the *XtendPoint* device after a power loss.
  - ◆ **Restore last state:** Always turn on and restore the last state of the *XtendPoint* device after a power loss.
- **Power button control:** Check the **Disable shutdown** checkbox to prevent manual device shutdown.
- **Enable force reboot:** Check the **Enable force reboot** checkbox to force a remote reboot if the device stops responding.
- **Wake-on-LAN:** Check the **Wake-on-LAN** checkbox to allow the *XtendPoint* device to wake up when it detects network traffic.
- **Advanced display modes (four-port devices only):** Checking the **Enable advanced display modes** checkbox allows support for the following display modes:
  - ◆ 1 × 3840 × 2160 @ 60Hz + 1 × 1920 × 1080 @ 60Hz
  - ◆ 1 × 3840 × 1440 @ 60Hz + 1 × 1920 × 1080 @ 60Hz
  - ◆ 4 × 2560 × 1600 @ 60Hz
  - ◆ 4 × 1920 × 1200 @ 60Hz

#### Note

This option is intended for *XtendPoint* four-port devices only. Enabling this option in an environment that mixes *XtendPoint* four-port and two-port devices may cause unpredictable results.



- **Download device logs:** Downloads the log files containing information about the *XtendPoint* devices. RGB Technical Support may request these files for debugging purposes.
- **Erase device logs:** Erase the *XtendPoint* log files.
- **Audits:** Download the audit file. This file contains information on user interactions with *XtendPoint* devices and is intended for use by the *XtendPoint* administrator.
- **Troubleshooting:** The following options are useful for troubleshooting *XtendPoint* devices:
  - ◆ **Audio:** Checking the **Disable audio** checkbox disables audio on that device. The device will reboot for this change to take effect.
  - ◆ **Debug configurations:** Get help and troubleshooting information for your configuration. Contact RGB Spectrum Technical Support. See [“Technical Support” on page 111](#).

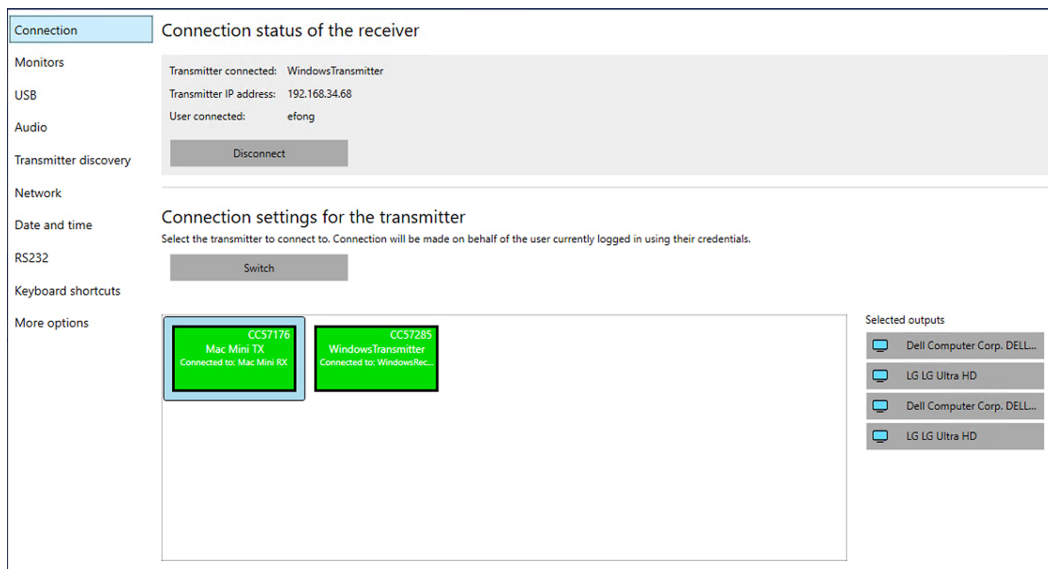
## 6.11 Receiver Settings

You can specify the following settings for an *XtendPoint* receiver device:

- **Connection:** See [“Connection” on page 82](#).
- **Monitors:** See [“Monitors” on page 83](#).
- **USB:** See [“USB” on page 84](#).
- **Audio:** See [“Audio” on page 85](#).
- **Transmitter Discovery:** See [“Transmitter Discovery” on page 86](#).
- **Network:** See [“Network” on page 86](#).
- **Date and Time:** See [“Date and Time” on page 88](#).
- **RS232:** See [“RS232” on page 88](#).
- **Keyboard Shortcuts:** See [“Keyboard Shortcuts” on page 89](#).
- **More Options:** See [“More Options” on page 91](#).

### 6.11.1 Connection

Selecting **Connection** in the left-hand menu opens the **Connection status** screen. See [Figure 6-14](#).



**Figure 6-14 Connection Status Screen**

These settings allow you to:

- Remotely connect an *XtendPoint* receiver to a transmitter.
- Disconnect a transmitter.
- Switch connections.

The following connection settings are available:

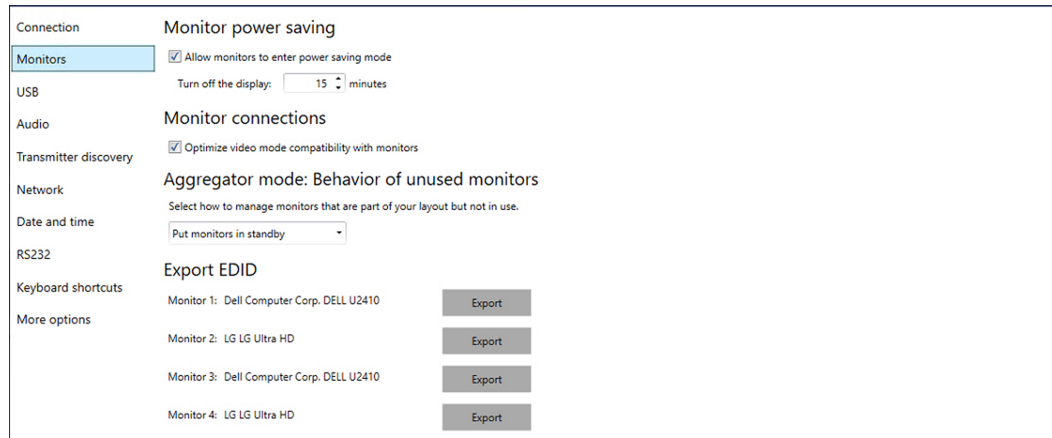
- **Receiver connection status:** Displays the name and IP address of the *XtendPoint* transmitter device connected to the receiver, and may also show the username connected to that transmitter. See [“Receiver Settings” on page 81](#). Clicking **Disconnect** stops this connection.
- **Transmitter connection settings:** Displays the *XtendPoint* transmitter devices that are available to connect to the receiver, based on the connection broker settings. See [“Transmitter Settings” on page 74](#).
- **Switch:** If the *XtendPoint* receiver is already connected to a transmitter, then select the transmitter you want to connect to, and then click **Switch**.
- **Connect:** If the *XtendPoint* receiver is not connected to a transmitter, then select the transmitter you want to connect to, and then click **Connect**. If the receiver is connected, then you can click **Disconnect** to disconnect it.
- **Selected outputs:** Select the monitors to use when connecting to a transmitter. Each output represents a physical *XtendPoint* transmitter connection. For example, to use a 4K resolution, disable outputs 1, 2, and 3, and select only output 4 (**Connector 4**).



Click an output to disable it. Disabling an output turns that monitor icon black, and that monitor will not be used when connecting to a transmitter.

### 6.11.2 Monitors

Selecting **Monitors** in the left-hand menu opens the **Monitor settings** screen. See [Figure 6-15](#). This window lists the monitors currently connected to the *XtendPoint* transmitter device and allows you to export the monitor EDID settings to a file. See [“Exporting EDID Settings” on page 83](#).



**Figure 6-15** Monitor Settings Screen

This window contains the following settings:

- **Monitor power saving:** Enable **Allow monitors to enter power saving mode** to turn off the display after **X** minutes of inactivity, and then click **Apply**.
- **Optimize video mode compatibility with monitors:** Different monitor models support different video parameters (such as resolutions, formats, or EDID), which may cause image quality or performance to vary in a multi-monitor setup to vary. Checking the **Optimize video mode compatibility with monitors** checkbox can improve image quality and optimize monitor compatibility with the *XtendPoint* device. This option is enabled by default.
- **Behavior of unused monitors:** Aggregator mode only. Select how to manage monitors that are part of your layout but that not in use, such as the layout has four (4) monitors with only two (2) in use. You may either:
  - **Put monitors in standby:** Force all unused monitors into standby mode.
  - **Keep monitors awake:** Keep all unused monitors awake.

### EXPORTING EDID SETTINGS

To export EDID settings to a file:

1. Select the monitor whose EDID you want to export, and then click **Export**.

The **Save As** window appears.

2. Save the EDID file (.bin).

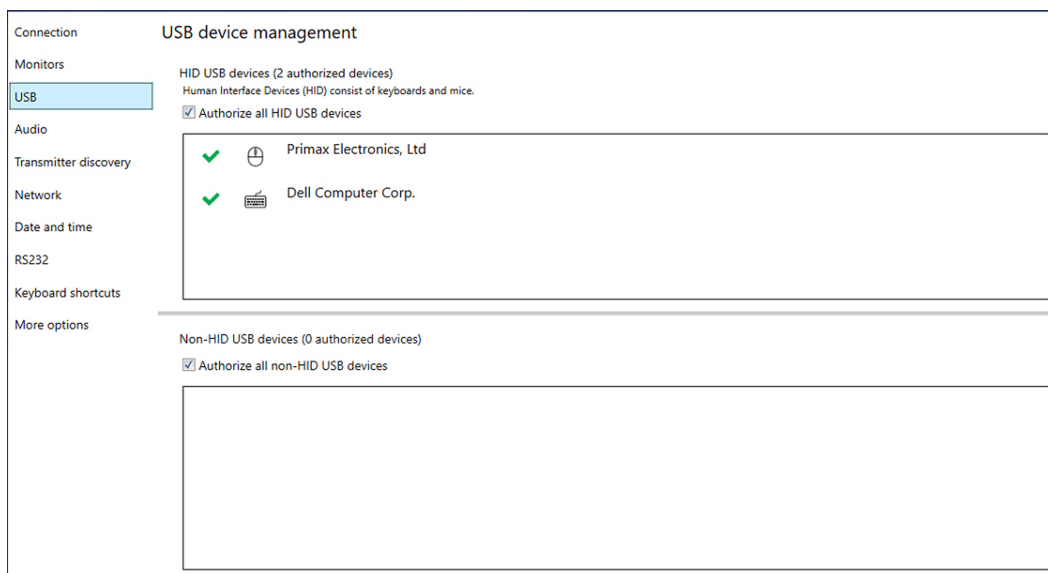


3. When prompted, click **OK**.

See [“Using the EDID from a File” on page 76](#) for information on using EDID settings that have been exported to a file.

### 6.11.3 USB

Selecting **USB** in the left-hand menu opens the **USB device management** screen. See [Figure 6-16](#). This screen allows you to view and authorize which USB devices can connect to the XtendPoint receiver.



**Figure 6-16** USB Device Management Screen

Each detected HID and non-HID USB device appears in this window and has one of the following statuses:

- **Authorized:** A green check mark icon indicates that the device is authorized to connect to the XtendPoint receiver.
- **Blocked:** A red barred circle icon indicates that the device is blocked from being able to connect to the XtendPoint receiver.

To authorize or block USB devices:

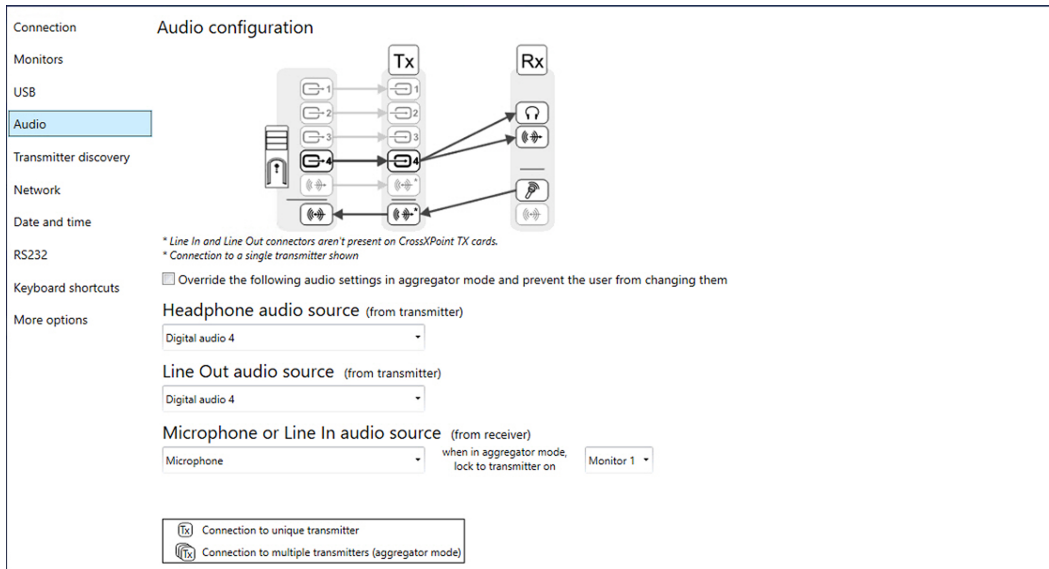
- **Authorize all HID USB devices:** Checking this checkbox authorizes USB connections to all USB HID devices (e.g. keyboard and mouse). Clearing this checkbox allows you to authorize HID USB devices on a per-device basis.
- **Authorize all non-HID USB devices:** Checking this checkbox authorizes USB connections to all non-HID USB devices. Clearing this checkbox allows you to authorize non-HID USB devices on a per-device basis.
- **Block an individual USB device:** To prevent a single USB device from connecting to the XtendPoint receiver, clear the appropriate **Authorize** checkbox, and then click the **Authorized** icon for that device. The device status changes to **Blocked**.



- **Authorize an individual USB device:** To authorize a single USB device to connect to the *XtendPoint* receiver, click the **Blocked** icon for that device. The device status changes to **Authorized**.

### 6.11.4 Audio

Selecting **Audio** in the left-hand menu opens the **Audio configuration** screen. See [Figure 6-17](#). This screen contains the audio settings for the *XtendPoint* device.



**Figure 6-17 Audio Settings Screen**

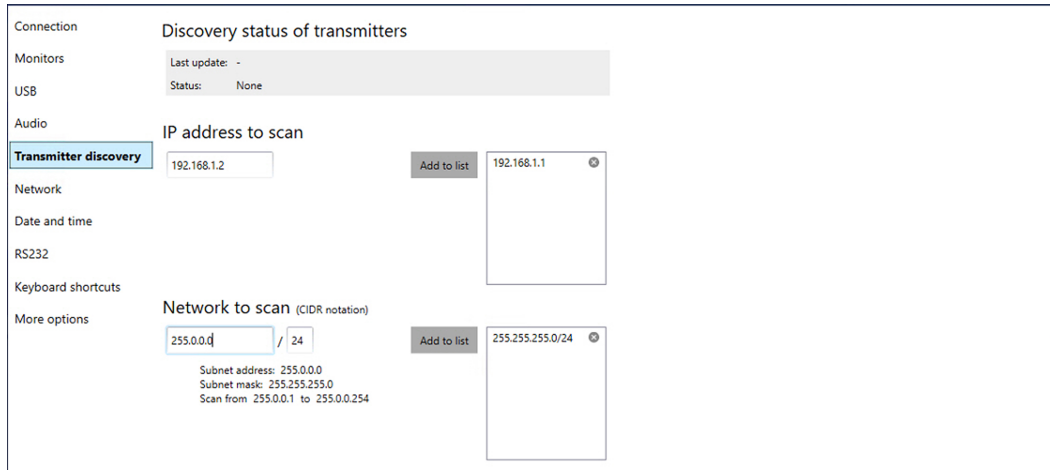
The following audio settings are available:

- **Preventing Aggregator mode changes:** Checking the **Override the following audio settings in aggregator mode and prevent the user from changing them** checkbox overrides the settings you will provide below and prevents users from being able to change these settings via the OSD, as described in [“Audio Sub-Tab” on page 40](#) and [“Audio Sub-Tab” on page 51](#).
- **Headphone audio source:** Select the transmitter audio source for your headphones.
- **Line Out audio source:** Select the **LINE OUT** audio source for the *XtendPoint* device from the transmitter.
- **Microphone or Line In audio source:** Select the input audio source for your **MICROPHONE** or **LINE IN** device from the *XtendPoint* receiver.
- **Aggregator mode audio source:** Use the **When in aggregator mode...** pull-down menu to select the audio source to be used when operating in Aggregator mode. You can select either:
  - ◆ A specific monitor to use, regardless of the mouse location or active source.
  - ◆ The active monitor will provide the audio source as the mouse moves around.

See [“Configuring Audio Settings” on page 95](#) for additional information on selecting the proper audio settings for your configuration.

### 6.11.5 Transmitter Discovery

Selecting **Transmitter discovery** in the left-hand menu opens the **Discovery status of transmitters** screen. See [Figure 6-18](#). These settings allow you to detect and connect to *XtendPoint* transmitters that are on multiple subnets, a WAN network, or a unicast-only network.



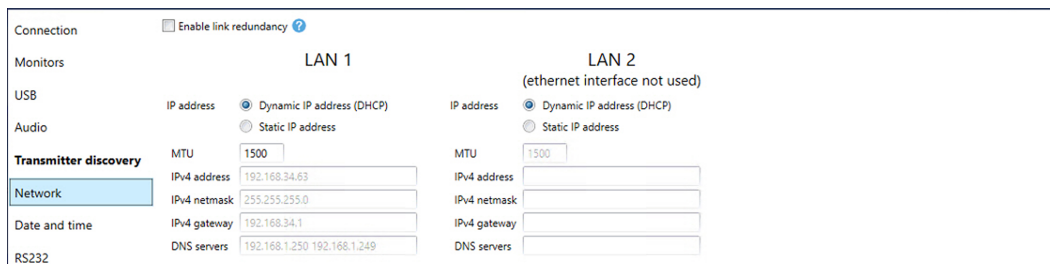
**Figure 6-18** Discovery Status of Transmitters Screen

This screen contains the following settings:

- **Discovery status of transmitters:** Shows the name and IP address of the *XtendPoint* transmitter device that is connected to the receiver.
- **IP address to scan:** Enter the IP address for the device you want to scan, and then select **Add to list > Apply**.
- **Network to scan:** Enter the (Classless Inter-Domain Routing (CIDR) subnet mask for the network to scan, and then select **Add to list > Apply**.

### 6.11.6 Network

Selecting **Network** in the left-hand menu opens the **Network settings** screen. See [Figure 6-19](#). These settings configure the **LAN1** and **LAN2** connections and the *XtendPoint* device IP address.



**Figure 6-19** Network Settings Screen





## Notes

You must reboot the *XtendPoint* device after changing either the device IP address or the method of assigning IP addresses. See [“Rebooting/Resetting an XtendPoint Device” on page 103](#).

### ENABLING LINK REDUNDANCY

To enable link redundancy:

1. Verify that all *XtendPoint* devices are on the same subnet and connected to a switch. If you are using multiple switches, then all switches must be connected to each other. See [“Prerequisites” on page 57](#).
2. Enable the **Enable link redundancy** option to ensure network availability in case of network cable or switch failure. In the case of a network cable or switch failure, your device will automatically switch to a secondary network path. Switching may take up to five (5) seconds, depending on network configuration.
3. Verify that link redundancy is enabled on both the *XtendPoint* transmitter and receiver devices.

### IP ADDRESSING

By default, *XtendPoint* uses dynamic IP addresses (DHCP). The *XtendPoint Central Manager* application uses the UPnP (Universal Plug and Play) protocol to automatically detect all *XtendPoint* devices in the same subnet. Alternatively, once the *XtendPoint Central Manager* application has detected a device, you can manually assign a static IP address to your device by specifying the following parameters:

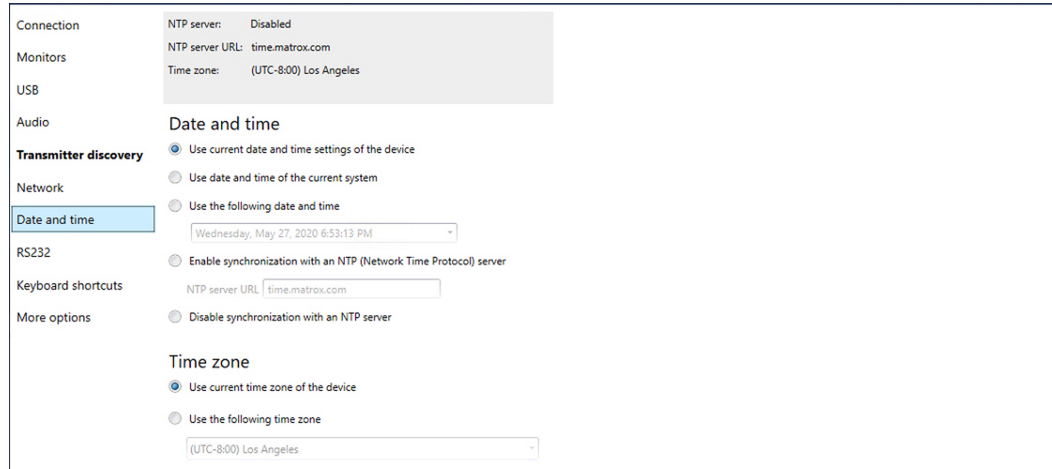
- **IPv4 address:** This will typically be between `192.168.0.0` and `192.168.255.255`. RGB Spectrum recommends assigning an IP address within the existing network subnet.
- **IPv4 netmask:** The netmask that defines the IP addresses in your subnet. The default subnet mask is `255.255.255.0`.
- **IPv4 gateway:** Network device that forwards traffic outside the local network, such as a router or switch.
- **DNS servers:** IP address of one or more Domain Name System (DNS) server(s). When entering multiple IP addresses, be sure to separate each IP address a space.

Contact your network administrator for assistance, if needed.



### 6.11.7 Date and Time

Selecting **Date and time** in the left-hand menu opens the **Date and time** screen. See [Figure 6-20](#).



**Figure 6-20** Date and Time Screen

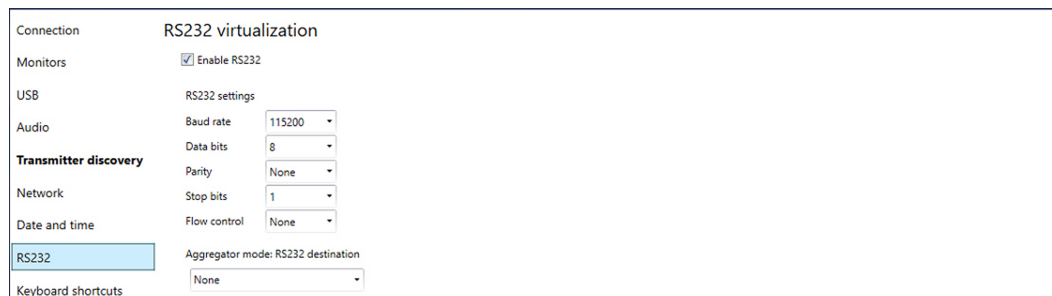
See [“Device Date and Time” on page 93](#).

#### Note

The *XtendPoint Central Manager* application updates the device date and time every two (2) seconds.

### 6.11.8 RS232

Selecting **RS232** in the left-hand menu opens the **RS232 virtualization** screen. See [Figure 6-21](#).



**Figure 6-21** RS232 Virtualization Screen

Checking the **Enable RS232** checkbox and then clicking **Apply** allows you to virtualize an RS232 (or serial) connection. You must then configure the following settings:

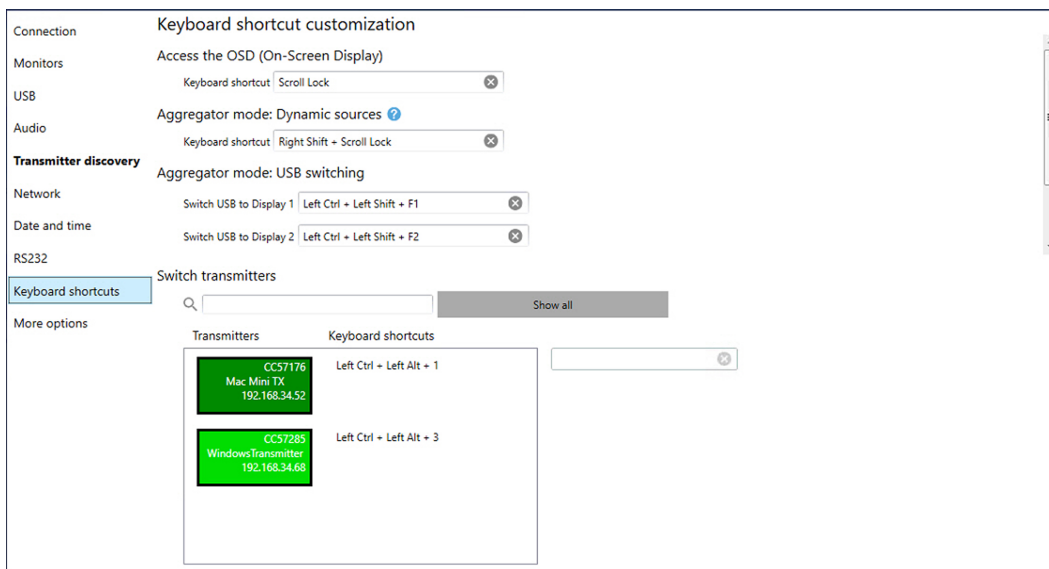
- **Baud rate:** Speed, in bits per seconds (or baud), used for the RS232 connection. The default is **115200**.
- **Data bits:** Number of bits per block of data transmitted. The default is **8**.



- **Parity:** Type of parity bits (**None**, **Odd**, or **Even**) used for the data transmitted. The default is **None**.
- **Stop bits:** Number of bits used to identify the end of a data block. The default is **1**.
- **Flow control:** Signal type (**None** or **RTS/CTS**) used to pause and resume data transmission. The default is **None**.
- **RS232 destination (Aggregator mode only):** Choose the *XtendPoint* transmitter to be controlled through RS232.

### 6.11.9 Keyboard Shortcuts

Selecting **Keyboard shortcuts** in the left-hand menu opens the **Keyboard shortcut customization** screen. See [Figure 6-22](#).



**Figure 6-22 Keyboard Shortcut Customization Screen**

Keyboard shortcuts allows you quickly switch to a different *XtendPoint* transmitter device by entering a few keystrokes.

#### Note

A standalone key (letter, number, or symbol) must be used with a modifier key ([ALT], [SHIFT], or [CTRL]).

#### OSD ACCESS

To assign a key combination for OSD access:

1. Next to **Keyboard shortcut**, click the **Edit** box.
2. Press a key combination, such as [CTRL]+[F10].
3. Click **Apply**.



## USB SWITCHING

By default, you can use the mouse to switch between sources when operating in Aggregator mode. You can also use either the default keyboard shortcuts or assign your own shortcuts. To assign a custom keyboard shortcut:

1. Next to **Switch USB to Display X**, click the **Edit** box.
2. Press a key combination, such as [LEFT CTRL]+[LEFT SHIFT]+[F10].
3. Repeat Step 2 for each display (**Display 1**, **Display 2**, **Display 3**, and/or **Display 4**) in the monitor layout.
4. Click **Apply**.

Checking the **Use only keyboard shortcuts for USB** switching checkbox prevents users from switching displays using the mouse and forces them to use the specified keyboard shortcuts.

## SWITCHING TRANSMITTERS

To assign a key combination for switching to a transmitter:

1. From the list of transmitters, select a transmitter.

### Note

You can filter your devices by group by selecting the groups you want to view, and then clicking **Close**. To select all of the groups, select **Select all**.

2. Next to the list of transmitters, click the **Edit** box.
3. Press a key combination, such as [CTRL]+[F10].
4. Click **Apply**.

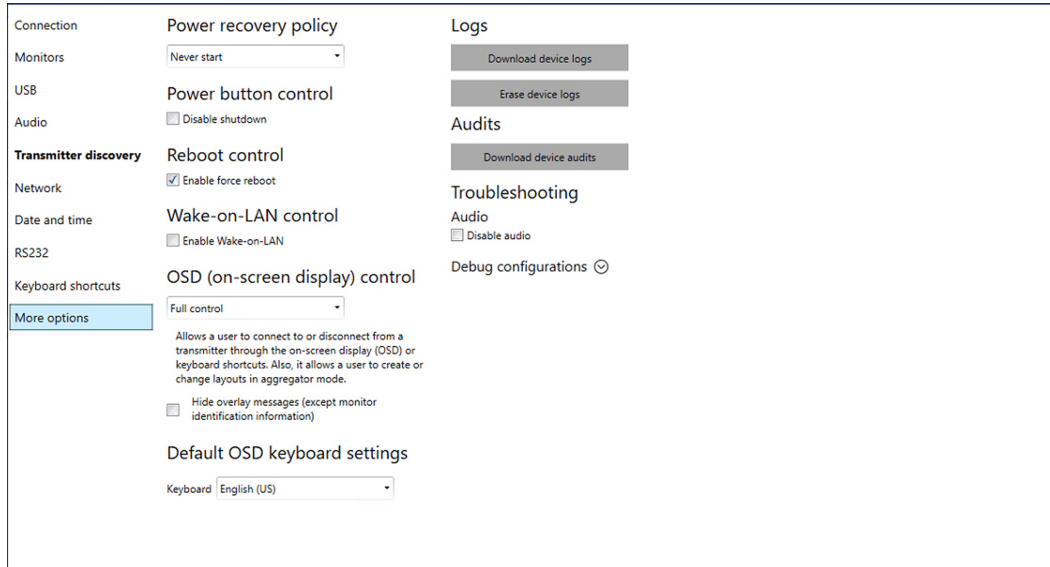
## REMOVING KEYBOARD SHORTCUTS

To remove a keyboard shortcut, click the **Delete** (X) icon. You can also click the **Edit** box, and then press either [BACKSPACE] or [DEL].



### 6.11.10 More Options

Selecting **More options** in the left-hand menu opens the **More options** screen. See [Figure 6-23](#).



**Figure 6-23 More Options Screen**

The following additional options are available for *XtendPoint* transmitter devices:

**Note** Some options may not be available for all *XtendPoint* transmitters.

- **Power recovery policy:** Defines how the device behaves after a power loss. The available options are:
  - ◆ **Never start:** Never turn on the *XtendPoint* device after a power loss.
  - ◆ **Always start:** Always turn on the *XtendPoint* device after a power loss.
  - ◆ **Restore last state:** Always turn on and restore the last state of the *XtendPoint* device after a power loss.
- **Power button control:** Check the **Disable shutdown** checkbox to prevent manual device shutdown.
- **Enable force reboot:** Check the **Enable force reboot** checkbox to force a remote reboot if the device stops responding.
- **Wake-on-LAN:** Check the **Wake-on-LAN** checkbox to allow the *XtendPoint* device to wake up when it detects network traffic.
- **OSD Control:** Select the level of control a user has for managing OSD information:
  - ◆ **Full control:** Allows a user to connect to or disconnect from an *XtendPoint* transmitter via either the OSD or keyboard shortcuts. Users may also create or change layouts in Aggregator mode.



- ◆ **Full control, less details:** Allows a user to connect to or disconnect from an *XtendPoint* transmitter via either the OSD or keyboard shortcuts. Users may also change layouts in Aggregator mode. The OSD provides fewer.
- ◆ **No control:** Users have no OSD control, and fewer details are provided.

If you want to hide the overlay messages but keep the monitor information in the top left-hand of the display, then check the **Hide overlay messages...** checkbox.

- **Default OSD Keyboard Settings:** Select the language of the **Keyboard** connected to the *XtendPoint* receiver. This sets the default keyboard language to use in the OSD.
- **Download device logs:** Downloads the log files containing information about the *XtendPoint* devices. RGB Technical Support may request these files for debugging purposes.
- **Erase device logs:** Erase the *XtendPoint* log files.
- **Audits:** Download the audit file. This file contains information on user interactions with *XtendPoint* devices and is intended for use by the *XtendPoint* administrator.
- **Troubleshooting:** The following options are useful for troubleshooting *XtendPoint* devices:
  - ◆ **Audio:** Checking the **Disable audio** checkbox disables audio on that device. The device will reboot for this change to take effect.
  - ◆ **Debug configurations:** Get help and troubleshooting information for your configuration. Contact RGB Spectrum Technical Support. See [“Technical Support” on page 111](#).

## 6.12 Exporting and Import Device Settings

You may back up (export) and restore (import) *XtendPoint* device settings that are specific to an individual device. You must export device settings before you can import them.

### 6.12.1 Exporting Device Settings

To export device settings:

1. Click **Export settings**.

The **Save settings to file window** appears.

2. Browse to the location where you want to save the backup device file.
3. When prompted, enter a **File name**, and then click **Save**.

### 6.12.2 Importing Device Settings

To import device settings:

1. Click **Import settings**.

The **Import settings from file window** appears.

2. Browse to the location where the device backup file was saved.



3. Select the device file to import. This will be either:
  - ◆ `.TX.backup` for a transmitter.
  - ◆ `.RX.backup` for a receiver.
4. Click **Open**.

### 6.13 Device Date and Time

[Figure 6-12](#) and [Figure 6-20](#) show the **Date and time** screen, which allows you to update the *XtendPoint* device date, time, and time zone. The top of this screen displays the current device date and time settings, which are updated every two (2) seconds.

#### Notes

It may take some time for new settings to take effect.

The following date and time options are available:

- **Use current date and time settings of the device:** Checking this radio button keeps the current device date, time, and NTP synchronization settings for your devices. This is the default.
- **Use date and time of the current system:** Checking this radio button uses the date and time of the host PC to update the *XtendPoint* devices and disables NTP server synchronization. The date and time on the host PC and *XtendPoint* device will vary if different time zones are being used.
- **Use the following date and time:** Checking this radio button and then entering a date and time in the field updates the *XtendPoint* devices to use that date and time and disables NTP server synchronization. This setting does not use the host PC time zone. You can use the arrow keys to change the specified date and time specified.
- **Enable synchronization with an NTP server:** Checking this radio button and then entering a valid NTP server URL in the field uses that server to regularly update the *XtendPoint* device date and time. Contact your network administrator for assistance.

#### Notes

You must always provide a valid NTP Server URL when selecting this option.

- **Disable synchronization with an NTP server:** Checking this option disables using an NTP server to update the device date and time for your device and keeps the current time.
- **Time zone:** Select the time zone to use for *XtendPoint* devices. RGB Spectrum recommends setting a device time zone when using an NTP server. You may select either:
  - ◆ **Use current time zone of the device:** Use the current device time zone. This is the default.
  - ◆ **Use the following time zone:** Checking this radio button and then selecting a time zone in the pull-down menu changes the device time zone to the one selected. This may adjust the device date and time.



*This page intentionally left blank.*





# CHAPTER 7

# CONFIGURING AUDIO SETTINGS

This chapter describes the following audio settings, which can be set via either the OSD or the *XtendPoint Central Manager* application:

- [“XtendPoint Receiver Output” on page 95.](#)
- [“XtendPoint Receiver Input” on page 96.](#)
- [“XtendPoint Receiver Audio Destination” on page 97.](#)

## 7.1 XtendPoint Receiver Output

[Table 7-1](#) shows the *XtendPoint* receiver output settings.

**Table 7-1 XtendPoint receiver Output Settings**

Audio Source from Transmitter	Standard Mode	Aggregator Mode
No audio	No audio available on the <i>XtendPoint</i> receiver output.	No audio available on the <i>XtendPoint</i> receiver output.
Digital audio 1 <sup>1</sup>	Audio originates from the audio portion of the A/V signal of <b>DISPLAYPORT 1</b> on the <i>XtendPoint</i> transmitter.	Audio originates from the digital A/V signal displayed on monitor 1 of the <i>XtendPoint</i> receiver.
Digital audio 2 <sup>1</sup>	Audio originates from the audio portion of the A/V signal of <b>DISPLAYPORT 2</b> on the <i>XtendPoint</i> transmitter.	Audio originates from the digital A/V signal displayed on monitor 2 of the <i>XtendPoint</i> receiver.
Digital audio 3 <sup>1</sup>	Audio originates from the audio portion of the A/V signal of <b>DISPLAYPORT 3</b> on the <i>XtendPoint</i> transmitter.	Audio originates from the digital A/V signal displayed on monitor 3 of the <i>XtendPoint</i> receiver.
Digital audio 4 <sup>1</sup>	Audio originates from the audio portion of the A/V signal of <b>DISPLAYPORT 4</b> on the <i>XtendPoint</i> transmitter.	Audio originates from the digital A/V signal displayed on monitor 4 of the <i>XtendPoint</i> receiver.



**Table 7-1** *XtendPoint* receiver Output Settings (Continued)

Audio Source from Transmitter	Standard Mode	Aggregator Mode
Analog audio (Follows USB) <sup>2</sup>	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter.	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter where the keyboard and mouse are active.
Analog audio, <b>LINE IN 1</b>	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter.	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter providing the video stream for monitor 1 on the <i>XtendPoint</i> receiver unit.
Analog audio, <b>LINE IN 2</b>	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter.	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter providing the video stream for monitor 2 on the <i>XtendPoint</i> receiver unit.
Analog audio, <b>LINE IN 3</b>	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter.	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter providing the video stream for monitor 3 on the <i>XtendPoint</i> receiver unit.
Analog audio, <b>LINE IN 4</b>	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter.	Audio originates from the <b>LINE IN</b> connector of the <i>XtendPoint</i> transmitter providing the video stream for monitor 4 on the <i>XtendPoint</i> receiver unit.
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>◆ <b>1:</b> In Aggregator mode, the A/V signal may come from an <i>XtendPoint</i> transmitter input other than the monitor on which it's displayed (for example, monitor 1 shows a stream that comes from input 3 of a transmitter).</li> <li>◆ <b>2:</b> In Aggregator mode, the audio source switches from one <i>XtendPoint</i> transmitter to another when the mouse moves to a monitor showing an image from a different transmitter</li> </ul>		

## 7.2 *XtendPoint* Receiver Input

[Table 7-2](#) shows the *XtendPoint* receiver input settings.

**Table 7-2** *XtendPoint* receiver Input Settings

Audio Source from <i>XtendPoint</i> receiver	Standard Mode	Aggregator Mode
No audio	No audio available on the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter.	No audio available on any of the <b>LINE OUT</b> connectors of the <i>XtendPoint</i> transmitter.
<b>MICROPHONE</b>	Audio from the <b>MICROPHONE</b> connector of the <i>XtendPoint</i> receiver unit is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter.	The <b>MICROPHONE</b> signal from the <i>XtendPoint</i> receiver unit is sent to a transmitter following the destination option chosen (see <a href="#">Table 7-3</a> ).
<b>LINE IN</b>	Audio from the <b>LINE IN</b> connector of the <i>XtendPoint</i> receiver unit is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter.	The <b>LINE IN</b> signal from the <i>XtendPoint</i> receiver unit is sent to a transmitter following the destination option chosen (see <a href="#">Table 7-3</a> ).



**Table 7-2** *XtendPoint* receiver Input Settings (Continued)

Audio Source from <i>XtendPoint</i> receiver	Standard Mode	Aggregator Mode
Automatic detection	Audio from the <b>MICROPHONE</b> connector of the <i>XtendPoint</i> receiver unit is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter. If no cable is present on the <b>Microphone</b> connector of the <i>XtendPoint</i> receiver unit but a cable is present on the <b>LINE OUT</b> connector, then the signal of the <b>LINE OUT</b> connector is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter.	Audio from the <b>MICROPHONE</b> connector of the <i>XtendPoint</i> receiver unit is used. If no cable is present on the Microphone connector of the <i>XtendPoint</i> receiver unit, but a cable is present on the <b>LINE IN</b> connector, the signal of the <b>LINE IN</b> connector is used. The signal is then sent to a transmitter following the destination option chosen (see <a href="#">Table 7-3</a> ).

### 7.3 *XtendPoint* Receiver Audio Destination

[Table 7-3](#) shows the *XtendPoint* receiver output settings.

**Table 7-3** *XtendPoint* receiver Audio Destination Settings

<i>XtendPoint</i> receiver Audio Destination	Standard Mode	Aggregator Mode
Monitor 1	Audio from the selected audio source of the <i>XtendPoint</i> receiver ( <b>MICROPHONE</b> or <b>LINE IN</b> ) is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter.	Audio from the selected audio source of the <i>XtendPoint</i> receiver ( <b>MICROPHONE</b> or <b>LINE IN</b> ) is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter that provides the video stream to monitor 1.
Monitor 2	Audio from the selected audio source of the <i>XtendPoint</i> receiver ( <b>MICROPHONE</b> or <b>LINE IN</b> ) is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter.	Audio from the selected audio source of the <i>XtendPoint</i> receiver ( <b>MICROPHONE</b> or <b>LINE IN</b> ) is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter that provides the video stream to monitor 2.
Monitor 3	Audio from the selected audio source of the <i>XtendPoint</i> receiver ( <b>MICROPHONE</b> or <b>LINE IN</b> ) is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter.	Audio from the selected audio source of the <i>XtendPoint</i> receiver ( <b>MICROPHONE</b> or <b>LINE IN</b> ) is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter that provides the video stream to monitor 3.
Monitor 4	Audio from the selected audio source of the <i>XtendPoint</i> receiver ( <b>MICROPHONE</b> or <b>LINE IN</b> ) is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter.	Audio from the selected audio source of the <i>XtendPoint</i> receiver ( <b>MICROPHONE</b> or <b>LINE IN</b> ) is sent to the <b>LINE OUT</b> connector of the <i>XtendPoint</i> transmitter that provides the video stream to monitor 4.



*This page intentionally left blank.*



# CHAPTER 8

# SOFTWARE & FIRMWARE UPDATES

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:
  - ◆ In the *XtendPoint Central Manager* application, hover your mouse cursor over the desired *XtendPoint* device to open a pop-up with device information that includes the firmware version. See [“Information Dashboard” on page 66](#).
  - ◆ Access the OSD on an *XtendPoint* device, open the **Sources** tab, and then look at the details for each listed device. See [“Sources Tab” on page 38](#) and [“Sources Tab” on page 49](#).
5. Download the new *XtendPoint* firmware to the host PC where you have the *XtendPoint Central Manager* application installed, and then extract it to a folder on that system (such as `C:\XtendPointFW`). The remote PC must have at least 1GB of available disk space.
6. As described in [“Prerequisites” on page 59](#), the firmware and *XtendPoint Central Manager* application versions must match. If needed, download and install the latest version of the *XtendPoint Central Manager* from RGB Spectrum.



## 8.1 Before Updating the Firmware

Before you update *XtendPoint* firmware:

- Verify that the network either allows assigning fixed IP addresses or includes a DHCP server that will assign fixed IP addresses to each *XtendPoint* device. The firmware update process requires several device reboots, and the updater uses fixed IP addresses to detect *XtendPoint* devices after each reboot.
- Verify that the host PC has access to a DNS server. Alternatively, configure the host PC to use a fixed IP address as its DNS server, such as `local host - 127.0.0.1`. Failure to complete this step will cause the firmware update process to take much longer to complete.
- Close the *XtendPoint Central Manager* application, as well as any other running applications.
- Install Microsoft .NET Framework 4.5 on the host PC.
- Ensure the host PC has at least 1 GB of free disk space available.
- Only run one instance of the *XtendPoint* firmware updater on the network at a time.

## 8.2 Firmware Update (Networked Mode)

To update the *XtendPoint* device firmware when the devices are in Networked mode:

1. Verify that the updated firmware package matches the *XtendPoint Central Manager* application version. If needed, you may update the application by installing the latest version, as described in [“Installation” on page 60](#).
2. On the host PC, navigate to the folder containing the extracted firmware updater files, and then execute the **Updater Over Network** file.
3. Search for available *XtendPoint* devices using either of the following methods:
  - ◆ **Automatic:** Check the **Automatic** detection radio button.
  - ◆ **Manual:** Check the **Manual** detection radio button, enter the device IP address(es) in the field, and then click **Search**. If you are searching for multiple devices, then include a space between each IP address. Alternatively, you can click the **Browse** button (...), enter each device IP address on a separate line, and then click **Apply**.
4. Click **Search** to begin searching for *XtendPoint* devices. If needed, you may pause the search by clicking **Stop**. Clicking **Search** again resumes the search.

If the **Authentication Failed** window appears, then proceed to Step 5; otherwise, skip to Step 6.

5. If needed, authenticate as follows:
  - ◆ Check the **Local user** radio button, and then enter your username and password in the appropriate fields.
  - ◆ Check the **Domain user** radio button, and then enter your username, server domain name, and password in the appropriate fields.



If needed, select one or both of the following options:

- ◆ If you are updating multiple *XtendPoint* devices with the same password, then check the **Use these credentials...** checkbox.
- ◆ If you do not know the password for one or more *XtendPoint* devices, then check the **Skip all remaining...** checkbox to ignore all devices that do not use a known password. You will not be able to update these devices.

Click **Authenticate**.

#### Note

The firmware updater detects *XtendPoint* devices that have been reset (see [“Rebooting/Resetting an XtendPoint Device” on page 103](#)) as having no password. You will be prompted to add any such device(s) to the firmware update. Click **Yes** to proceed. If desired, you may check the **Do this for all devices...** password to avoid seeing this prompt multiple times.

6. If desired, check the **Sync time of all devices** checkbox to synchronize the device dates and times with the host PC date and time.
7. If you want to reset the devices during the firmware update, then check the **Reset configuration** checkbox. Resetting an *XtendPoint* device completely removes all custom configuration settings from that device. See [“Rebooting/Resetting an XtendPoint Device” on page 103](#).
8. Click **Update** to begin updating the device firmware.

You may click the **Show log** icon (check mark) to view the firmware update process. Updating the device firmware may require up to 20 minutes.

### 8.3 Firmware Update (Point-to-Point Mode)

Updating *XtendPoint* device firmware when the devices are in Point-to-Point mode uses a USB connection between the host PC and the *XtendPoint* transmitter device. To do this:

1. Verify that the updated firmware package matches the *XtendPoint Central Manager* application version. If needed, you may update the application by installing the latest version, as described in [“Installation” on page 60](#).
2. On the host PC, navigate to the folder containing the extracted firmware updater files, and then execute the **Updater Over Network** file.

The firmware updater creates a USB mass storage device on the *XtendPoint* transmitter unit. Some systems may have a Group Policy Object (GPO) that prevents the firmware updater from doing this. If this is true for your host PC, then consult your system administrator to apply an exception to the GPO rules, such as by adding `USBSTOR\DiskRGB__Virt_Stor_1.00`.

3. Verify that both the transmitter and receiver *XtendPoint* devices appear in the firmware updater window with a green status bar, and then click **Update** to update the *XtendPoint* devices. Updating the device firmware may require up to 20 minutes.



*This page intentionally left blank.*





n

# CHAPTER 9

# MAINTENANCE & TROUBLESHOOTING

This chapter describes how to reboot or reset an *XtendPoint* device. It also includes information on troubleshooting and changing the device operation mode..

## 9.1 Rebooting/Resetting an *XtendPoint* Device

There are four ways to reboot or reset an *XtendPoint* device:

- **Software reboot via the *XtendPoint* Central Manager application:** If the device tile turns red for an *XtendPoint* device, then click the **Reboot** button in the main interface to reboot that device. This keeps all device settings, including the network configuration and password.
- **Software reboot via OSD:** For devices connected in Point-to-Point mode, you may click either **Reboot transmitter** or **Reboot receiver** in the on-screen display to reboot the specified device. This keeps all device settings, including the network configuration and password.
- **Hardware reboot:** If the *XtendPoint* Central Manager application shows the device as unresponsive (yellow tile) or if the application itself is not responding, then this procedure will keep all device settings, including the network configuration and password. To reboot the device, use the tip of a paper clip to press the **RESET** switch for less than two (2) seconds, until the **POWER** LED begins blinking slowly. See [Figure 1-1](#), [Figure 1-3](#), [Figure 1-5](#), and [Figure 1-7](#).

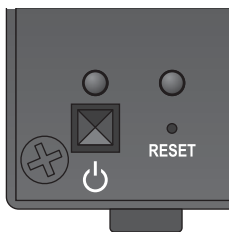
### Important

Pressing the switches for longer than indicated will result in a configuration reset.

- **Configuration reset:** Perform this procedure if you have rebooted the device but it still appears as unresponsive (yellow tile) in the *XtendPoint* application, or if you are changing the operation mode for that device. This procedure resets all device settings, including the IP configuration and password. To reset the device, use the tip of a paper clip to press the **RESET** switch for four to five (4-5) seconds, until the **POWER** LED begins blinking rapidly. See [“XtendPoint Two-Port Transmitter” on page 3](#), [“XtendPoint Two-Port Receiver” on page 6](#), [“XtendPoint Four-Port Transmitter” on page 9](#), and [“XtendPoint Four-Port Receiver” on page 12](#).

### Important

When *XtendPoint* devices are connected in Point-to-Point mode, performing a configuration reset on the receiver device will also reset the transmitter device.



**Figure 9-1** RESET Switch

## 9.2 Troubleshooting

If you experience a problem with your *XtendPoint* device or the *Central Manager* system:

- Verify that the device is correctly installed and that all connectors are both correct and properly fastened.
- Follow the appropriate troubleshooting step(s) in [Table 9-1](#).
- Reboot the device, as described in [“Rebooting/Resetting an XtendPoint Device” on page 103](#).
- Reset the device, as described in [“Rebooting/Resetting an XtendPoint Device” on page 103](#).
- If the problem persists, then contact RGB Spectrum Technical Support, as described in [“Technical Support” on page 111](#).



**Table 9-1 Troubleshooting**

Symptom	Possible Cause(s)	Corrective Action
The <i>XtendPoint Central Manager</i> is not starting, or the <i>XtendPoint</i> device is not being discovered on the network	<ul style="list-style-type: none"> <li>◆ The device may not be properly connected or may be on a different subnet.</li> <li>◆ If you are using Windows Server 2016/2008 R2, then the Windows SSDP Discovery service may not be enabled.</li> <li>◆ Network discovery and file sharing may not be enabled.</li> <li>◆ The <i>XtendPoint Central Manager</i> application and/or device firmware may be out of date.</li> <li>◆ The controller system and/or network firewall may not be properly set.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Verify that the <i>XtendPoint</i> device is properly connected, and then check the LEDs to see the current device status (see <a href="#">“Controls, Indicators, and Connectors” on page 3</a>).</li> <li>◆ Enable the SSDP Discovery service. Refer to your Windows documentation for instructions.</li> <li>◆ Enable network discovery and file sharing on your system, as described in your Windows documentation.</li> <li>◆ Verify that all software and firmware is up to date.</li> <li>◆ Configure all firewalls as described in <a href="#">“Firewall Settings” on page 109</a>.</li> </ul>
The <i>XtendPoint Central Manager</i> application lists a device as <b>View only</b> , and the device cannot be accessed.	The device may be a recent addition to your environment with no configured password.	Change the device password, as described in <a href="#">“Overwriting a Password” on page 73</a> .
No picture or output at all.	Your monitor input and/or power cables may not be properly connected.	Verify that all connectors are correct and that they are securely fastened.
The <i>XtendPoint Central Manager</i> application takes several minutes to start.	The controller system may not have access to a DNS (Domain Name System) server.	Configure your system to use a fixed IP address (such as <code>local host - 127.0.0.1</code> ) as the DNS server. Refer to your Windows documentation.
The <i>XtendPoint Central Manager</i> application stops responding.	Either the <i>XtendPoint Central Manager</i> application or device may have encountered an error.	Exit and then restart the <i>XtendPoint Central Manager</i> application. If this does not solve the problem, then restart the controller system.



Table 9-1 Troubleshooting

Symptom	Possible Cause(s)	Corrective Action
The <i>XtendPoint Central Manager</i> lists a device as unresponsive (yellow device tile).	<ul style="list-style-type: none"><li>◆ The network may be slow.</li><li>◆ Your <i>XtendPoint Central Manager</i> software or device may have encountered an error.</li></ul>	<ul style="list-style-type: none"><li>◆ Wait a few minutes, and then verify that the device status has successfully updated.</li><li>◆ Exit and then restart the <i>XtendPoint Central Manager</i> application.  If the device remains unresponsive, then click Reboot to reboot that device.  If the reboot does not succeed, then reset the device.</li></ul>
Poor image quality or display flickering/frame dropping occurs.	High network traffic may be degrading the stream quality.	Verify that all network equipment supports the bandwidth required and that the network is not congested.
No sound or sound is distorted.	<ul style="list-style-type: none"><li>◆ The audio output device may not be enabled.</li><li>◆ Audio cables may not be properly connected.</li></ul>	<ul style="list-style-type: none"><li>◆ Enable the audio source, as described in <a href="#">“Audio Sub-Tab” on page 40</a> and <a href="#">“Audio Sub-Tab” on page 51</a>.</li><li>◆ Verify that all connectors and power cables are correct and securely fastened, as described in <a href="#">“Connections (Receiver)” on page 25</a> and <a href="#">“Connections (Transmitter)” on page 29</a>.</li></ul>
An <i>XtendPoint</i> device does not work after changing the operational mode.	The device may be using improper settings.	Follow the process described in <a href="#">“Changing the Device Operation Mode” on page 107</a> .
Screen image defects appear, such as corrupted or blocky output.	Temporal dithering may be enabled on some GPUs.	Configure your GPU for RGB output with the highest-available dynamic range. Refer to your GPU documentation.
Random display flickering occurs while using a point-to-point connection.	Unstable video output, or the monitor may be fixed-frequency.	In the OSD, select <b>Settings&gt;Monitors</b> , and then enable the <b>Stabilize display output</b> option.



### 9.3 Changing the Device Operation Mode

To change the operation mode of an *XtendPoint* device (e.g., changing from Networked mode to Point-to-Point mode or vice versa):

1. Disconnect the network cables from the *XtendPoint* transmitter and receiver devices. See [“Connections \(Receiver\)” on page 25](#) and [“Connections \(Transmitter\)” on page 29](#).
2. Reset the transmitter and receiver devices. See [“Rebooting/Resetting an XtendPoint Device” on page 103](#).
3. Reconnect the devices as appropriate for the new operation mode. See [Figure 3-1](#) or [Figure 4-1](#), as appropriate.
4. Reboot both devices. See [“Rebooting/Resetting an XtendPoint Device” on page 103](#).
5. Configure the devices.
  - ◆ **Networked mode:** Use the *XtendPoint Central Manager* application. See [“Device Setup” on page 68](#).
  - ◆ **Point-to-Point mode:** Use the OSD. See [“OSD Operation \(Point-to-Point Mode\)” on page 47](#).



*This page intentionally left blank.*



# CHAPTER 10 FIREWALL SETTINGS

## 10.1 Ports

*XtendPoint* uses the port numbers listed in [Table 10-1](#) to communicate between the client and the server, and with the Network API. The *XtendPoint* Setup program automatically creates the necessary inbound firewall rules when you install *XtendPoint* Client or *XtendPoint* Remote Host, unless you choose otherwise.

**Table 10-1 TCP/UDP Ports Used by *XtendPoint***

Port	Protocol	Name	Description
<i>XtendPoint</i> Central Manager Application			
53	TCP	DNS	DNS requests.
443	TCP	Secure HTTP	Send and receive <i>XtendPoint</i> Central Manager commands and data.
1900	UDP	UPnP	Microsoft Simple Service Discover Protocol (SSDP), for discovering UPnP devices. ICMP (ping) must be enabled.
Firmware Updater			
20, 21	TCP	FTP	Transferring firmware files to the <i>XtendPoint</i> device.
22	TCP	SSH	Execute the firmware update.
443	TCP	Secure HTTP	Authentication
1900	UDP	UPnP	Microsoft Simple Service Discover Protocol (SSDP), for discovering UPnP devices. ICMP (ping) must be enabled.
<i>XtendPoint</i> Devices			
20, 21	TCP	FTP	Transferring firmware files to the <i>XtendPoint</i> device.
22	TCP	SSH	Execute the firmware update.
69	UDP	DHCP	Dynamic Host Configuration Protocol client.
80	TCP	HTTP	<ul style="list-style-type: none"> <li>◆ <b>Transmitter:</b> Publish desktop thumbnails.</li> <li>◆ <b>Receiver:</b> Retrieve desktop thumbnails.</li> </ul>



**Table 10-1 TCP/UDP Ports Used by XtendPoint (Continued)**

Port	Protocol	Name	Description
123	UDP	NTP	Network Time Protocol.
161	UDP	SNMP	Network management (public community string)
443	TCP	HTTPS	Send and receive <i>XtendPoint Central Manager</i> commands and data, and authenticate for firmware updates.
1900	UDP	UPnP	Microsoft Simple Service Discover Protocol (SSDP), for discovering UPnP devices. ICMP (ping) must be enabled.
3240	TCP	USB	USB IP.
Ephemeral	UDP	RTP/RTCP	Audio and video streams and control.
6804-6816	TCP	USB/Audio	◆ <b>Transmitter:</b> USB IP. ◆ <b>Receiver:</b> Audio back channel control.
8884	TCP	Control channel.	Control channel.
8886	UDP	Audio	Audio back channel (transmitter)
8886	TCP	Audio	Audio back channel (receiver)
8809-8872	TCP	A/V stream control	A/V streams control.
9223-9254	UDP	Multicast	Multicast A/V streams.
11900	UDP	SSDP	◆ <b>Transmitter:</b> SSDP unicast M-SEARCH requests for UPnP discovery and presence monitoring for out-of-subnet and WAN devices ◆ <b>Receiver:</b> SSDP unicast M-SEARCH requests for UPnP discovery and presence monitoring
12000	TCP	RS232	RS232 virtualization.
12346-12752	UDP	Unicast	Unicast A/V streams.
13414-13719	UDP	Unicast	Unicast A/V streams.





# CHAPTER 11

# CONTACT INFORMATION

## 11.1 Corporate Headquarters

**RGB Spectrum**  
950 Marina Village Parkway  
Alameda, CA 94501

**Phone:** +1-510-814-7000

**Fax:** +1-510-814-7026

**Web:** [rgb.com](http://rgb.com)

## 11.2 Sales and Product Information

**Web:** [rgb.com/contact](http://rgb.com/contact)

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

## 11.3 Technical Support

**Email:** [tech@rgb.com](mailto:tech@rgb.com)

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

**Web:** [rgb.com/support](http://rgb.com/support)

*XtendPoint™*

KVM-over-IP

User Guide

September, 2020

RGB Spectrum  
950 Marina Village Parkway  
Alameda, CA 94501