



Streaming Gateway User Guide



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D al Ross

David Ross CEO, Ross Video dross@rossvideo.com

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- 3. We will not ship crap.
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- 6. We will keep our promises.
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- 9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis do what you know in your heart is right. (You may rent helicopters if necessary.)*

Streaming Gateway · User Guide

- Ross Part Number: 3900DR-504-08
- Software Version: 3.1.0
- Release Date: January 5, 2024.

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Patents

Patent numbers US 7,034,886; US 7,508,455; US 7,602,446; US 7,802,802 B2; US 7,834,886; US 7,914,332; US 8,307,284; US 8,407,374 B2; US 8,499,019 B2; US 8,519,949 B2; US 8,743,292 B2; GB 2,419,119 B; GB 2,447,380 B; and other patents pending.

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This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a Commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



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Cet appareil numerique de la classe "A" est conforme a la norme NMB-003 du Canada.

European Union

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Warning — This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

Australia/New Zealand

This equipment is in compliance with the provisions established under the Radiocommunications Act 1992 and Radiocommunications Labeling (Electromagnetic Compatibility) Notice 2008.

International

This equipment has been tested under the requirements of CISPR 22:2008 or CISPR 32:2015 and found to comply with the limits for a Class A Digital device.



Notice — This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.

Maintenance/User Serviceable Parts

Routine maintenance to this product is not required. This product contains no user serviceable parts. If the module does not appear to be working properly, please contact Technical Support using the numbers listed under the "**Contact Us**" section of this manual. All softGear products are covered by a one-year warranty and will be repaired without charge for materials or labor within this period. See the "**Warranty and Repair Policy**" section in this manual for details.

Environmental Information

The equipment may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration. You can also contact Ross Video for more information on the environmental performances of our products.

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Introduction

This guide covers the installation, configuration, and use of the softGear Streaming Gateway. The following chapters are included:

- "Introduction" summarizes the guide and provides important terms, and conventions.
- "Before You Begin" summarizes the features of the Streaming Gateway.
- "Integration Examples" provides workflow examples for the Streaming Gateway integration.
- "Hardware Overview" presents information on the features of the front and back panels of the Streaming Gateway chassis.
- "**Physical Installation**" provides additional information needed for installing the Streaming Gateway and DashBoard before you can proceed to cabling and configuring your Streaming Gateway.
- "Cabling" outlines how to connect to your facility network, and peripheral devices.
- "Initial Connection" provides instructions for configuring the initial IP address for the Streaming Gateway.
- "Licensed Features" outlines the available software licensed features, and how to install and uninstall a software key for a licensed feature.
- "Updating the Network Settings" provides instructions for configuring the 1G port of the Streaming Gateway for communication with your facility network and NTP server.
- "Using DashBoard" provides instructions for launching DashBoard, and accessing the Streaming Gateway interfaces in DashBoard.
- "**Connections**" outlines how to configure the connections for your Streaming Gateway, and then enable the connections.
- "**Upgrading the Software**" provides instructions on how to upgrade the Streaming Gateway software via DashBoard.
- "DashBoard Interface Overview" summarizes the menus and parameters of the Streaming Gateway tabs in DashBoard.
- "Technical Specifications" provides the specifications for the Streaming Gateway.
- "Service Information" provides information on the warranty and repair policy for your Streaming Gateway.
- "Glossary" provides a list of terms used throughout this guide.
- "Third Party Licenses" contains licenses for third party libraries that are used in the softGear Streaming Gateway.

Related Publications

It is recommended to consult the following Ross documentation before installing and configuring your Streaming Gateway:

- DashBoard User Manual, Ross Part Number: 8351DR-004
- Streaming Gateway Quick Start Guide, Ross Part Number: 3900DR-506
- Streaming Gateway Cloud Installation Guide, Ross Part Number: 3900DR-507

Documentation Conventions

Special text formats are used in this guide to identify parts of the user interface, text that a user must enter, or a sequence of menus and sub-menus that must be followed to reach a particular command.

Interface Elements

Bold text is used to identify a user interface element such as a dialog box, menu item, or button. For example:

In the **Network** tab, click **Apply**.

User Entered Text

Courier text is used to identify text that a user must enter. For example:

In the Language box, enter English.

Referenced Guides

Text set in bold and italic represent the titles of referenced guides, manuals, or documents. For example:

For more information, refer to the **DashBoard User Manual**.

Menu Sequences

Menu arrows are used in procedures to identify a sequence of menu items that you must follow. For example, if a step reads "**File** > **Save As**," you would click the **File** menu and then click **Save As**.

Important Instructions

Star icons are used to identify important instructions or features. For example:

Contact your IT department before connecting to your facility network to ensure that there are no conflicts. They will provide you with an appropriate value for the IP Address, Subnet Mask, and Gateway for your device.

Contacting Ross Video Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24-hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel. During business hours (Eastern Time), technical support personnel are available by telephone. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support person who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. This team of highly trained staff is available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

- Technical Support: (+1) 613-652-4886
- After Hours Emergency: (+1) 613-349-0006
- E-mail: <u>techsupport@rossvideo.com</u>
- Website: <u>http://www.rossvideo.com</u>

Before You Begin

If you have questions pertaining to the operation of the Streaming Gateway, contact us at the numbers listed in "**Contacting Ross Video Technical Support**".

Overview

The softGear Streaming Gateway is a transport converter with built-in micro-services. The Streaming Gateway allows you to transport content between on-premise and the cloud, in both directions. Multiple simultaneous streams of the same or different type are supported. It is based on softGear[™] micro-service architecture, and can run on a Dell® server or an AWS EC2 instance. In addition, WebRTC has a mechanism which allows for easy to use remote contribution from any browser.

Figure 1 provides a general functional block diagram of the Streaming Gateway where an SDI video signal (with embedded PCM audio) is received by an SDI port and is converted to an H264 WebRTC output.



Figure 2 provides a general functional block diagram of the Streaming Gateway where an H264 WebRTC stream is the source and is decoded to an SDI video signal (with embedded PCM audio) for an SDI output.



Figure 3 provides a general functional block diagram of the Streaming Gateway where an SDI video signal (with embedded PCM audio) is received by an SDI port and is converted to an H264 SRT output.



Figure 3 Functional Block Diagram — SDI Input to SRT Output

Figure 4 provides a general functional block diagram of the Streaming Gateway where an H264 SRT stream is the source and is decoded to an SDI video signal (with embedded PCM audio) for an SDI output.



Figure 5 provides a general functional block diagram of the Streaming Gateway where an NDI stream is the source and is converted to an H264 SRT output.





Figure 6 provides a general functional block diagram of the Streaming Gateway where an H264 SRT stream is the source and is decoded to an NDI stream for an NDI output.



Figure 7 provides a general functional block diagram of the Streaming Gateway where an SDI video signal (with embedded PCM audio) is received by an SDI port and is sent to an NDI output.





Figure 8 provides a general functional block diagram of the Streaming Gateway where an NDI stream is the source and is sent to an SDI video signal (with embedded PCM audio) for an SDI output.



Features

The Streaming Gateway includes the following features:

- Support for MPEG2-TS over SRT transmission and reception
- Support for streams from Microsoft Teams and Zoom Rooms
- Supports multiple resolutions and frame rates. Refer to "Connections" for details.
- 8 SDI DIN ports, with 4 pre-defined as inputs, 4 pre-defined as outputs (with embedded audio), and 1REF IN port
- One gigabit Ethernet connection for facility network and data transmission over public networks
- WebRTC transmission and reception
- NDI transmission and reception
- CDI transmission and reception (on AWS cloud)
- Intuitive control and monitoring via DashBoard

DashBoard Interfaces

The Streaming Gateway requires an Ethernet network connection between it and a computer that will run the DashBoard client. The DashBoard client software enables you to monitor and control DashBoard Connect compatible devices from a computer.

The Streaming Gateway includes DashBoard interfaces for configuration and operation. The interfaces are accessed by expanding the Streaming Gateway node in the DashBoard Tree View and selecting the appropriate sub-node.

For More Information on...

• displaying the DashBoard interfaces, refer to "Using DashBoard".

Installation Overview

The user needs to ensure the following tasks are performed for on-premise servers:

- 1. Physically install the Streaming Gateway in a rack frame. Refer to the *Streaming Gateway Quick Start Guide*.
- 2. Cable the Ethernet connection on the back panel. Refer to "Connecting to a Network".
- 3. Cable the video I/O. Refer to "Cabling".
- 4. Connect the two power ports on the back panel. Refer to "Connecting the Power Supplies".

For More Information on...

 installing the Streaming Gateway in the cloud, refer to the Streaming Gateway Cloud Installation Guide.

Configuration Overview

Figure 9 provides a generalized work-flow of configuring your Streaming Gateway.



Figure 9 Configuration Work-flow

Assign the Network Settings

The user connects the Streaming Gateway to the network and ensures it can communicate with a computer running the latest DashBoard client software. The DashBoard client software enables you to monitor, configure, and operate your Streaming Gateway.

For More Information on...

- configuring the initial network settings, refer to "Initial Connection".
- displaying the Streaming Gateway in DashBoard, refer to "Using DashBoard".
- the menus and parameters available in DashBoard, refer to "DashBoard Interface Overview".

Connect to an NTP Server

Once the user can successfully access the Streaming Gateway in DashBoard, the next step is to establish a connection to an NTP Server. The Streaming Gateway requires an accurate time reference, in order to ensure correct watermarking and crediting. Refer to "**Configuring the NTP Settings**".

Configure the Connections

Configure the network streams (connection points) for the Streaming Gateway by mapping the inputs to the available outputs. Refer to "**Connections**".

Integration Examples

This chapter provides a few integration examples, though your needs may differ from what is presented here.

WebRTC Input to Multiple SDI Outputs

Figure 10 illustrates a workflow where the Streaming Gateway assigns a single WebRTC input stream to multiple SDI outputs.



Figure 10 Workflow — One WebRTC Stream to Multiple SDI Outputs

This setup requires you to:

- 1. Cable four SDI ports on the back panel as outputs. Refer to "SDI Cabling".
- 2. Configure a connection with an:
 - a. input from a WebRTC peer. Refer to "To specify a WebRTC stream as a source".
 - b. output to an SDI port. Refer to "To assign an SDI output as the destination".
- 3. Repeat step 2 for the remaining three SDI outputs.

SDI Input to Multiple WebRTC Outputs

Figure 11 illustrates a workflow where the Streaming Gateway assigns a single SDI input to multiple WebRTC outputs (one with video, and three with audio).



Figure 11 Workflow — One SDI Input to Multiple WebRTC Streams

This setup would require you to:

- 1. Cable one SDI port on the back panel as an input. Refer to "SDI Cabling".
- 2. Configure a connection with an:
 - a. input to an SDI port. Refer to "To specify the SDI input as a source".
 - b. output to a WebRTC peer. Refer to "To assign a WebRTC stream as the destination".
- 3. Repeat step 2 for the remaining three WebRTC outputs.
- ★ Only one SDI to WebRTC connection with video is permitted. The remaining connections must be audio only.

Multiple On-Premise Inputs to Multiple Cloud Outputs

Figure 12 illustrates a workflow where the Streaming Gateway assigns an on-premise SDI input and an on-premise NDI input to cloud outputs via SRT.



Figure 12 Workflow — On-Premise SDI and NDI Inputs to Cloud Outputs via SRT

This setup would require you to:

- 1. Cable one SDI port on the back panel as an input. Refer to "SDI Cabling".
- 2. Configure a connection on-premise with an:
 - a. input to an SDI port. Refer to "To specify the SDI input as a source".
 - b. output to an SRT peer. Refer to "To assign an SRT stream as the destination".
- 3. Configure a connection in the cloud with an:
 - a. input to an SRT peer. Refer to "To specify an SRT stream as a source".
 - b. output to an NDI or CDI peer. Refer to "**To assign an NDI stream as the destination**" or "**To assign a CDI stream as the destination**".

Multiple Cloud Inputs to Multiple On-Premise Outputs

Figure 13 illustrates a workflow where the Streaming Gateway assigns two cloud NDI or CDI inputs to on-premise SDI outputs via SRT.



Figure 13 Workflow — NDI or CDI Cloud Inputs to On-Premise SDI Outputs via SRT

This setup would require you to:

- 1. Cable two SDI ports on the back panel as outputs. Refer to "SDI Cabling".
- 2. Configure a connection in the cloud with an:
 - a. input to an NDI or CDI peer. Refer to **"To specify the NDI stream as a source**" or **"To specify the CDI stream as a source**".
 - b. output to an SRT peer. Refer to "To assign an SRT stream as the destination".
- 3. Configure a connection on-premise with an:
 - a. input to an SRT peer. Refer to "To specify an SRT stream as a source".
 - b. output to an SDI port. Refer to "To assign an SDI output as the destination".
- 4. Repeat steps 2 and 3 for the remaining SDI output.

Multiple Teams NDI Inputs to Multiple SDI Outputs

Figure 14 illustrates a workflow where the Streaming Gateway assigns four Teams NDI inputs to four SDI outputs.



Figure 14 Workflow — Teams NDI Inputs to SDI Outputs

This setup would require you to:

- 1. Cable one SDI port on the back panel as an input. Refer to "SDI Cabling".
- 2. Configure a connection with an:
 - a. input to an NDI peer. Refer to "To specify the NDI stream as a source".
 - b. output to an SDI port. Refer to "To assign an SDI output as the destination".
- 3. Repeat step 2 for the remaining three SDI outputs.
- 4. Configure a connection with an:
 - a. input to an SDI port. Refer to "To specify the SDI input as a source".
 - b. output to an NDI peer. Refer to "To assign an NDI stream as the destination".

For information on how to configure Teams to enable NDI output and input streams, visit <u>https://support.microsoft.com/en-us/office/broadcasting-audio-and-video-from-teams-with-ndi-an</u><u>d-sdi-technology-e91a0adb-96b9-4dca-a2cd-07181276afa3</u>

Multiple Zoom Rooms NDI Inputs to Multiple SDI Outputs

Figure 15 illustrates a workflow where the Streaming Gateway assigns three Zoom Rooms NDI inputs to three SDI outputs.



Figure 15 Workflow — Zoom Rooms NDI Inputs to SDI Outputs

This setup would require you to:

- 1. Cable one SDI port on the back panel as an input. Refer to "SDI Cabling".
- 2. Configure a connection with an:
 - a. input to an NDI peer. Refer to "To specify the NDI stream as a source".
 - b. output to an SDI port. Refer to "To assign an SDI output as the destination".
- 3. Repeat step 2 for the remaining three SDI outputs.
- 4. Configure a connection with an:
 - a. input to an SDI port. Refer to "To specify the SDI input as a source".
 - b. output to an NDI peer. Refer to "To assign an NDI stream as the destination".

For information on how to configure Zoom Rooms to enable NDI output and input streams, visit <u>https://support.zoom.us/hc/en-us/articles/360061903532-Using-Network-Device-Interface-NDI-</u>

Hardware Overview

This chapter presents information on the Streaming Gateway hardware. Note that for cloud instances, Amazon EC2 is used instead of the Dell® hardware.

Front Panel Overview

This section provides a general overview of the features of the Streaming Gateway front panel.



Figure 16 Streaming Gateway — Front Panel (Door Removed)

POWER Button

This is the main power button for the Streaming Gateway.

Back Panel Overview

This section provides an overview of the features of the Streaming Gateway back panel.



Figure 17 Streaming Gateway — Back Panel

1. SDI Ports

This area includes the DIN ports that are predefined as an SDI input or SDI outputs. Refer to **Figure 17** for cabling designations.

2. REF IN Port

This port connects to an independent analog video reference source.

3.1G Ethernet Port

This standard 10/100/1000 Base-TX RJ45 connector is used to connect the Streaming Gateway to your primary facility network. This is required to bridge the external Ethernet network to the local communication bus for monitoring and controlling the Streaming Gateway using DashBoard.

4. 10G Ethernet Port

This port is not implemented.

5, 6 Power Supplies

The Streaming Gateway comes standard with two power supplies.

Physical Installation

This chapter provides additional information needed for installing the Streaming Gateway and DashBoard before you can proceed to cabling and configuring your Streaming Gateway. Note that for cloud instances, Amazon EC2 is used instead of the Dell® hardware, meaning there is no physical installation.

Installing the Streaming Gateway in a Rack Frame

Refer to the *Streaming Gateway Quick Start Guide* that accompanied your device and its mounting kit for installation information.

Connecting to a Network

The Streaming Gateway is connected to your network via the **1G** port on the back panel. The **1G** port enables the Streaming Gateway to interface with other devices in your facility (such as an NTP server), and the computer running the DashBoard client.

Before You Begin

Contact your IT department before connecting to a network to ensure that there are no conflicts. They will provide you with an appropriate value for the IP Address, Subnet Mask, and Gateway for your Streaming Gateway.

★ If difficulties or problems are experienced when connecting the Streaming Gateway to a network hub, contact your network administrator.

For More Information on...

• downloading and installing DashBoard, refer to the **DashBoard User Manual**.

Connecting to your Facility Network

★ Ensure that the Streaming Gateway is on the same network as your DashBoard client computer.

To connect the Streaming Gateway to your facility network

- 1. Connect one end of a standard RJ45 cable to the **1G** port on the Streaming Gateway back panel.
- 2. Connect the other end of the same RJ45 cable to your Local Area Network (LAN).



Connecting the Power Supplies

For redundancy, each power cord should be connected to a separate power source for protection against failure of the A/C power circuit. In the event of one power supply failure, the frame load is transferred to the other redundant power supply.



Warning — In some countries, it may be necessary to supply the correct mains supply cord. Use only an approved IEC 320 C-13 type A/C line cord rated for a minimum 10A at 250V and certified for the country of use.

The power supply plugs into the right-hand section of the Streaming Gateway back panel. The universal power supply supports all worldwide AC power voltages, and no power adjustments are required.

To connect the Streaming Gateway to the power supplies



Warning Hazardous Voltages — The safe operation of this product requires that a protective earth connection be provided. This protective earth is provided by the grounding conductor in the equipment's supply cord. To reduce the risk of electrical shock to operator and service personnel, this ground conductor must be connected to an earthed ground.

- 1. Connect the cable's female IEC connector to the right power socket.
- 2. Plug the second IEC connector into left power socket.



- 3. Connect each supplied power cable's three-prong male connector to an AC outlet.
- 4. Power on the Streaming Gateway by pressing the **POWER** button on the front panel. Refer to "**Front Panel Overview**" for the location of this button.
- **★** The fans run at full speed for a short period at the startup.

Cabling

If you have questions pertaining to the installation of the Streaming Gateway, contact us at the numbers listed in "**Contacting Ross Video Technical Support**". Our technical staff is always available for consultation, training, or service.

Connecting a Reference Source to the Streaming Gateway

The Streaming Gateway back panel also includes a **REF IN** DIN port that can connect to a CVBS BLS or TLS reference source.

★ Ross Video provides a DIN-to-BNC Adapter Cable for this connection.

To connect a reference source to the Streaming Gateway

- 1. Connect one end of the provided cable to the **REF IN** port on the Streaming Gateway.
- 2. Connect the other end of the same cable to the applicable output port on the external reference source device.



SDI Cabling

The Streaming Gateway provides DIN ports that can be connected to SDI sources or downstream devices.

★ Ross Video provides DIN-to-BNC Adapter Cables for these connections.

To cable your SDI signals

1. Connect your SDI source device to the DIN port as indicated below.



2. Connect your downstream SDI devices to the DIN ports as indicated below.



Initial Connection

The Streaming Gateway is configured and operated via its interfaces in DashBoard. Once the Streaming Gateway is physically installed and connected to your facility network, you must manually add the Streaming Gateway to the Tree View in DashBoard. The Tree View lists all DashBoard Connect devices that the DashBoard client can communicate with. Once you add the Streaming Gateway to the Tree View, you can access its interfaces.

★ If you have questions pertaining to the operation of Streaming Gateway, contact us at the numbers listed in "Contacting Ross Video Technical Support". Our technical staff is always available for consultation, training, or service.

Physical Connections to the Streaming Gateway

Before proceeding, ensure that the Streaming Gateway is:

- connected to your network. Refer to "Connecting to a Network".
- powered on. Refer to "Connecting the Power Supplies".

Launching DashBoard

The DashBoard client software must run on a computer that has a physical wired Ethernet connection. Wireless connections do not allow device discovery.

To launch DashBoard

- 1. Ensure that you are running DashBoard software version 9.6 or higher.
- 2. Ensure the DashBoard client computer has an IP address of 192.168.x.x. This will allow it to communicate with the Streaming Gateway.
- 3. Launch DashBoard by double-clicking its icon on your computer desktop.

Manually Adding the Streaming Gateway to the Tree View

The Streaming Gateway does not automatically display in the DashBoard Tree View. You must manually add it to the Tree View.

To manually add the Streaming Gateway to the Tree View in DashBoard

1. From the main toolbar in DashBoard, select **File** > **New** > **TCP/IP DashBoard Connect or openGear Device**.

The New TCP openGear Frame Connection dialog opens.

- 2. In the **IP Address** field, enter the default IP address of **192.168.0.100**.
- 3. Click Detect Frame Information.
- ★ If you wish to assign a unique name for the Streaming Gateway, enter it in the **Display Name** field.
- 4. Click **Finish** to close the dialog.
- 5. Verify that the **softGear Streaming Gateway** node displays in the DashBoard Tree View, along with the **System** sub-node below it.
- 6. Continue to "Licensed Features" to license your server.

Licensed Features

The Streaming Gateway has software licenses for enabling functions and features. To access the **SSG** sub-node where you can make use of these functions and features, it is required that you first license your server. This chapter outlines the available software licensed features, and how to install a product key for a licensed feature.

Licensing Overview

There are two kinds of licensing supported: node locked (for on-premise servers) and floating (for cloud servers).

The licensing component provides an alarm (shown in DashBoard) which indicates the current state of licensing, along with the status field on the System > Licensing tab. These fields will always be populated for a licensed system and warn the users of any changes or issues, such as licenses expiring soon (within a week), or in the case of floating licensing, if the connection between the Streaming Gateway and the Ross Platform Manager (RPM) has been lost.

★ Expired or invalid licenses will result in the immediate termination of all features.

Floating Licensing

Floating licensing is integrated with the RPM, and requires a constant connection with the RPM.

The Streaming Gateway re-activates licenses on a regular interval with the RPM. If an activation fails as a result of being unable to reach the RPM, the Streaming Gateway will start a 2-day grace period before terminating the features. During this time, the Streaming Gateway will operate as normal. A reboot will remove any Streaming Gateway grace period in effect and the Streaming Gateway will start without any features. If an activation fails as a result of the RPM being unable to reach the activation server, the RPM will start a grace period where the Streaming Gateway will be able to continue activating the licenses without issues. After the RPM's grace period is over, the features will be terminated. The Streaming Gateway can be rebooted safely while the RPM grace period is in effect. See the RPM documentation for more information.

★ When the Streaming Gateway is rebooted or turned off, it will deactivate all of its licenses with the RPM.

Product Keys Overview

Table 1 provides a brief summary on the types of licensed features available for the StreamingGateway.

License	Description
Platform	Basic license for the softGear product line
NDI Receiver	Enables the Streaming Gateway to receive network streams via the NDI protocol
NDI Sender	Enables the Streaming Gateway to transmit network streams via the NDI protocol
WebRTC Transceiver	Enables the Streaming Gateway to transmit and receive network streams via the WebRTC protocol

Table 1 List of Streaming Gateway Licensed Features

License	Description
BlackMagic SDI Global	For BNC configurations (SDI Input and Output ports) (for on-premise servers only)
BlackMagic SDI Input	Enables the SDI ports on the back panel to be configured and used as SDI inputs (for on-premise servers only)
BlackMagic SDI Output	Enables the SDI ports on the back panel to be configured and used as SDI outputs (for on-premise servers only)
CDI Receiver	Enables the Streaming Gateway to receive network streams via the CDI protocol (for AWS cloud only)
CDI Sender	Enables the Streaming Gateway to transmit network streams via the CDI protocol (for AWS cloud only)
Uhura Centralized UI Controller	For communication between MPUs and DashBoard UI, and handling connection management
SRT Transceiver	Enables the Streaming Gateway to transmit and receive MPEG-TS streams via SRT protocol
SDI-NDI Conversion	Enables the Streaming Gateway to convert between SDI and NDI
MPEG2-TS Muxer	Enables the Streaming Gateway to encode video and audio and multiplex them to the MPEG2-TS stream
MPEG2-TS Demuxer	Enables the Streaming Gateway to demultiplex the MPEG2-TS stream and decode video and audio
Video Scaler	Enables the Streaming Gateway to change the video resolution and frame rate
Audio Sample Rate Converter	Enables the Streaming Gateway to change the audio sample rate

Table 1 List of Streaming Gateway Licensed Features

Installing a Product Key

Ross Video uses product keys to control user access to specific Streaming Gateway features. You can obtain a key for a Streaming Gateway licensed feature from Ross Video Technical Support.

To install a Streaming Gateway Product Key

- 1. In the **Basic Tree View** of DashBoard, locate the **softGear Streaming Gateway** node.
- 2. Expand the **softGear Streaming Gateway** node.
- 3. Double-click the **System** sub-node.
- 4. Select the Licensing tab.
- 5. Enter the Product Key in the **Product Key** field.
- 6. Click **Activate**.
- 7. Verify that the **Status** field updates to Activation Successful and the Licensing Table populates.
- 8. Click Factory Default.
- **★ Factory Default** will reset ALL configuration settings.

The **SSG** sub-node will now be available in the **Basic Tree View** of DashBoard under the **softGear Streaming Gateway** node.

9. Continue to "**Updating the Network Settings**" to assign new static network settings as determined by your IT Department.

Uninstalling a Product Key

Whether your use of Streaming Gateway features has changed, or you are switching to using another device, you will need to uninstall the product key that you were using.

To uninstall a Streaming Gateway Product Key

- 1. In the Basic Tree View of DashBoard, locate the softGear Streaming Gateway node.
- 2. Expand the **softGear Streaming Gateway** node.
- 3. Double-click the **System** sub-node.
- 4. Select the **Licensing** tab.
- 5. Click Deactivate.
- 6. Click **Yes** when prompted.

The Product Key has been uninstalled.

- 7. Click Factory Default.
- **★** A **Factory Default** will reset ALL configuration settings.
Updating the Network Settings

Once the Streaming Gateway is communicating via DashBoard, it is recommended to assign a different static IP address from the factory default values. These default values are used to initially establish a connection point to the Streaming Gateway, as outlined in your *Streaming Gateway Quick Start Guide*.

This chapter provides instructions to change the default network settings for the Streaming Gateway to communicate with your facility network and streaming devices.

★ Contact your IT Department for more information on changing these settings.

Updating the Network Settings

The **1G** port enables the Streaming Gateway to interface with other devices in your facility, and the computer running the DashBoard client. Once the Streaming Gateway is communicating via DashBoard using the default values, it is recommended to assign a different static IP address from the default to one that adheres to your IT requirements.

To update the network settings for the Streaming Gateway

- 1. Display the **System** sub-node as outlined in "**To display the System sub-node in DashBoard**".
- 2. Ensure the **Ethernet** tab is selected.
- 3. Use the IPv4 Address field to specify the new static IP address for the 1G port.
- 4. Use the **Subnet Mask** field to specify the subnet mask for the **1G** port.
- 5. Use the **Gateway** field to specify the gateway for communications outside of the local area network (LAN) the Streaming Gateway will use.
- 6. Use the **DNS** field to specify the IP address of the DNS server that the Streaming Gateway will communicate with.
- 7. Click **Apply**.

The Streaming Gateway automatically reboots and applies the changes.

★ If a DHCP address is preferred, set the **Method** menu to **DHCP**, and ensure that all IP settings are retrieved successfully from the DNS server.

Configuring the NTP Settings

You have the option to set the current date and time on the system clocks of the Streaming Gateway by using a Network Time Protocol (NTP) server. This requires you to enter the IP address of up to two (2) NTP servers. The Streaming Gateway must be able to access these IP addresses to acquire the time from an NTP server.

To set the system time of the Streaming Gateway

- 1. Display the **System** sub-node as outlined in **"To display the System sub-node in DashBoard**".
- 2. Select the **Timing** tab.
- 3. In the **NTP Server 1** field, enter the IP address of the first NTP server you want to add.
- 4. If required, in the **NTP Server 2** field, enter the IP address of the second NTP server you want to add.
- 5. Click Apply Changes.

- 6. Wait until the Streaming Gateway is synchronized to the new NTP server and OK displays in the **NTP Status** field.
- 7. If OK is not displayed, check:
 - that the time displayed in the **Current Time** field is correct;
 - that the IP address is correct;
 - that the Streaming Gateway has access to the address.

Using DashBoard

The Streaming Gateway interfaces and settings are accessed by expanding the main softGear Streaming Gateway node in the Basic Tree View, and then selecting the appropriate sub-node. The System sub-node provides settings for setting up the Streaming Gateway. The SSG sub-node provides interfaces for configuring and monitoring the Streaming Gateway. This chapter provides instructions for accessing both sub-nodes of the Streaming Gateway and their contents in DashBoard.

Accessing the System Sub-node in DashBoard

The System sub-node in Dashboard is organized into a series of tabs. The main top toolbar displays the **Ethernet**, **Licensing**, **Timing**, **Features**, and **About** tabs.

To display the System sub-node in DashBoard

- 1. In the Basic Tree View of DashBoard, locate the softGear Streaming Gateway node.
- 2. Expand the softGear Streaming Gateway node.



3. Double-click the **System** sub-node.

The **Ethernet** tab is automatically selected.

The **Ethernet** tab provides options and information to configure the network settings for the **1G** port on the back panel.

1-1GStatusCrkMAC.AddressB6 CB 29 93 83 58OP4.AddressB6 CB 29 93 28 50Subnet MaskCrk 2025 295 295 0Gateway10 62 122 10ONSStaticONS10 00 69StateActivatedStateActivatedCancelCancel	1-1GStatusCKMAC AddressB6 CB 29 90 36 58BP-1 Address10 52 122 108Subner Mask265 255 255 0Gabrenay10 62 122 1DNS10 00 68MathedStateApplyActivatedCancelCancel	Ethernet Licensing Timing Features About			
I - 1GStatus• C4MAC AddressB6 (B 29 39 38 38 38I Pi A Address10 65 122 109Suhnir Mask265 255 .056 0G Batoway01 062 122 1O I/S51 00 069State10 00 069StateActivatedStateActivatedCancelCancel	I - 1GStatus• CKMAD AddressB6 05 29 98 36 50IPAL Address10 62 122 100Submrt Mask205 555 256 0Botomay10 62 122 1DNS10 00 63StateAchatedStateAchatedCancelCancel				
StatusOKMAC AddressB6 08 29 98 38 58PA4 Address10 62 122 108Subnet Maak265 555 266 0Gadroway10 062 122 1DMS10 00 63MachadStateStateActivatedStateActivatedCancelCancel	Status Ck MAC Address BR CB 29 9B 3B 5B IPv4 Address 10 62 122 10B Subret Mask 265 256 260 Gateway 10 62 122 1 DNS 10 00 0.69 State Cancel State Activated Cancel Cancel		1 - 1G		
MAC AddressB8 68 2398 38 58IPv1 Address10 62 122 18Submer Mask255 256 266 0Gatoway10 62 122 1DMS10 00 08MathadStateAddressActivatedCancelCancel	MAC Address886 68 2998 38 58IP-4 Address10 62 122 18Submit Mask255 256 256 0Gatoway10 62 122 1DNS10 00 68MathodStateAddressAchoatedStateAchoatedCanselCansel	Status	ок		
IPvA Address10 62 122 188Submit Mask255 255 266 0Gatoway10 62 122 1DNS10 00 089MethodStateStateAchvatedCancelCancel	IP-AL Address 10 62 122 168 Submit Mask 255 256 256 0 Gateway 10 05 122 1 DNS 10 00 69 Method State State Aclosed Cansel Cansel		B8:CB:29:9B:3B:5B		
Submit Mask 255 255 256 0 Gabway 10 02 122 1 DNS 10 00 09 Method State State Achusted Cancel	Submit Mask 255 255 255 0 Gatway 10 05 122 1 DNS 10 00 68 Method State State Achoated Cansel Cansel				
Gatway 10 02 122 1 DNS 10 0.0 89 Mathid State State Achvated Cancel	Gadway 10.02.122.1 DNs 10.0.0.69 Machad Static Static Activated Activated Cancel		255.255.255.0		
DNS 100069 Mathod State State Achrated Cancel	DNS 1000.69 Mathed State State Activated Activated Cancel				
Method State State Achivated Apply Cancel	Method State State Achuaed Apply Cancel		10.0.0.69		
Activated Apply Cancel	State Activated Appy Cancel		Static		
Apply Cancel	Acely Cancel		Activated		
Cancel	Cancel				
			Refresh		

4. Select the **Licensing** tab.

The **Licensing** tab allows you to license your server, and provides options to manage the features that require a valid Product Key.

5. Select the **Timing** tab.

The **Timing** tab provides information regarding NTP timing.

Ethernet Licensing Timing Features About			
NTP Status			
Current Time Mon May 16 20:21:05 202	2 GMT		
NTP Server 1 0.pool.ntp.org			
NTP Server 2 1.pool.ntp.org			
	Apply Changes		

6. Select the **Features** tab.

The **Features** tab provides information on all of the running features.

Name	Version	Hash	Buildstamp	State	Restart
sdp_midplane_0		214dbd8	2023-07-17T14:05:01+00:00	Running	Restart
sdp_dataplane-controller_1	1.0.2	b88/5a7	2023-07-17T14:05:59+00:00	Running	Restart
				Reserved	
sdp_uhura-centralized-ui_10			2023-08-02T13:30:04+00:00	Running	Restart
sdp_blackmagic-decklink-global_11		e2a7980	2023-07-17T14:05:50+00:00	Running	Restart
sdp_blackmagic-decklink-input_12		cc8e6bf	2023-08-02T13:21:12+00:00	Running	Restart
dp_blackmagic-decklink-output_13		6887d51	2023-08-02T13:15:46+00:00	Running	Restart
dp_webrtc-client_14		4ac6e16	2023-07-17T14:10:40+00:00	Running	Restart
dp_ndi-receiver_15		1eD3bd8	2023-07-25T13:20:15+00:00	Running	Restart
dp_ndi-sender_16		3973bac	2023-08-01T14:58:40+00:00	Running	Restart
sdp_mc-muxer_17		42df757	2023-08-01T13:24:49+00:00	Running	Restart
dp_mc-muxer_18		42df757	2023-08-01T13:24:49+00:00	Running	Restart
dp_mc-muxer_19		42df757	2023-08-01T13:24:49+00:00	Running	Restart
sdp_mc-muxer_20		42df757	2023-08-01T13:24:49+00:00	Running	Restart
sdp_srt-transceiver_21		6346a56		Running	Restart
dp_srt-transceiver_22		6346a56		Running	Restart
dp_srt-transceiver_23		6346a56		Running	Restart
sdp_srt-transceiver_24		6346a56		Running	Restart
sdp_mc-demuxer_25		ca0910e	2023-08-01T13:35:07+00:00	Running	Restart
sdp_mc-demuxer_26		ca0910e	2023-08-01T13:35:07+00:00	Running	Restart
sdp_mc-demuxer_27				Running	Restart
dp_mc-demuxer_28		ca0910e	2023-08-01T13:35:07+00:00	Running	Restart
dp_audio-sample-rate-converter_29		b436d93	2023-08-01T18:35:09+00:00	Running	Restart
dp_audio-sample-rate-converter_30		b436d93	2023-08-01T18:36:09+00:00	Running	Restart
dp_audio-sample-rate-converter_31		b436d93	2023-08-01T18:36:09+00:00	Running	Restart
		PN36433	2023-08-01718-36-09-400-00	Dunning	Daetart

7. Select the **About** tab.

The **About** tab provides general system information, such as the serial number and product version, and also allows you to download an archive of the logs.

Ethernet Licensing	Timing Features About	
Product Information		
Serial Number	12423	
Assembly Revision	A	
Product	softGear Streaming Gateway	
Product Version	2.3.0-d	
Product Hash	4669309	
Frame Name	Ross Video's SSG	Apply
Hostname	10.62.122.129	
	Factory Default	
Import/Export Configuration	n	
	Import/Export	
Logs		
	Download	

Accessing the SSG Sub-node in DashBoard

The SSG sub-node in DashBoard is organized into a series of tabs and sub-tabs. The main top toolbar displays the **Connections Control**, **Source Configuration**, **Destination Configuration**, and **Configuration** tabs. When the **Configuration** tab is selected, additional sub-tabs are displayed on a toolbar located at the bottom of the interface.

To display the SSG sub-node in DashBoard

- 1. In the **Basic Tree View** of DashBoard, locate the **softGear Streaming Gateway** node.
- 2. Expand the softGear Streaming Gateway node.

```
    ✓ ■ softGear Streaming Gateway
    Ø SSG
```

3. Double-click the **SSG** sub-node.

The **Connections Control** tab is automatically selected.

The **Connections Control** tab enables you to specify which connections are active (online) or not (offline), and monitor the connection points of the Streaming Gateway.

SO	ftGear	Streamin	g Gatewa	y					<u></u>	<u>oss</u>
Connections	s Control	Source Configu	ration Destina	tion Configuration	Configuration					
Name	Src Type	Type	Status		Connection In	formation		Video Source	Information	
Dest 1	SDI	NDI	Online	^						
Dest 2			Offline							
Dest 3			Offline		Current State	Online		Source Name	Source 1	
Dest 4			Offline							
Dest 5			Offline		Destination Name	Dest 1		Source Type		
					Destination Type	NDI		Source Status	Online	
					Ndi Stream Name	Stream 1 - 132		Source Format	1080(59.94	
					Video Format	108069 94				
								Connection St	atus Details	
				·				SDI Input (12) — OK NDI Dutput (16) — OK		
_										-
										Close

4. Select the **Source Configuration** tab.

The **Source Configuration** tab enables you to manage the input signals that the Streaming Gateway will have access to. The tab is organized into two panes. The left pane lists all the configured sources in a table format. Selecting a row in this table displays the options for the selected source in the right pane of the window.

softGe	ear Strea	aming Ga	ateway									ROSS
Connections Cont	trol Source	Configuration	Destination	Configuration	Configura	tion						
Name	Туре	Status							Source Configuration			
Source 1	SDI	Online	^		Status	😑 ок						
Source 2		Offine			Name	Source 1		ype S	DI	Video Format	1080/59.94	
Source 3	SDI	Offine			Port	Port 1	-					
Source 4	SDI	Offine										
undefined	None	Offine										
Create So												Cancel
												Close

5. Select the **Destination Configuration** tab.

The **Destination Configuration** tab enables you to manage the output signals that the Streaming Gateway will have access to. The tab is organized into two panes. The left pane lists

all the configured destinations in a table format. Selecting a row in this table displays the options for the selected destination in the right pane of the window.

ş	softGear S	treamin	ng Gateway	/										ROS	55
Connect	ions Control Sc	ource Configu	ration Destinati	on Configuration	Configuration										
Name	Src Type	Туре	Status					P	estination	Configuration					
Dest 1	SDI	NDI	Online		Status	😑 өк									
Dest 2			Offline			0		T	ND		-	104 0		o	
Dest 3			Offline		мате	Dest 1		rype	INDI			Video S	ource	Source 1	
Dest 4	SDI	NDI	Offline	Stream Name	(SGa4bb6d5e311	2) Stream 1 - 13		Group Name	Public						
Dest 5		NDI	Uttline												
				Outp	ut Video Settings	Configure		Output Audio							
					AV Syn	ic (•	~								
								F	udio Chani	nel Mapping					
				0	tout Channele				16 *	Sour	Source 1	-		Apply Man	- I
					iput cituinieia				16						
					Channel 1	Source 1		Ch 1		Channe	2 Source 1		Ch 2		-
					Channel 3	Source 1	-	Ch 3		Channe	A Source 1	-	Ch 4		
					Channel 6	Course 4		0110	-	Channel	C Course 1	-	01.4		
					Channel 5	Source I		CH S		Channe	o Source I		Crite		
					Channel 7	Source 1		Ch 7		Channel	8 Source 1	· · · · · · · · · · · · · · · · · · ·	Cne		
					Channel 9	Source 1	.	Ch 9	•	Channel	10 Source 1	÷	Ch 10		×
CI	eate Destination		Delete Destination									Apply			
					_0.4	osh				Rehaat					

6. Select the **Configuration** tab.

From this tab you can access the Global Settings, API Control, Preset Connections, and About sub-tabs (located in the bottom toolbar). By default, the Global Settings sub-tab is automatically selected. Refer to "**Configuration Interface**" for a detailed explanation of the options contained within each sub-tab.



Connections

This chapter outlines how to configure the sources (inputs) and then assign them to destinations (outputs) to create connections for your Streaming Gateway. The source types displayed will depend on the license used for your server. Once all connections are assigned, you can then enable each connection as required.

Overview

A connection is created by mapping a source to a destination. The Streaming Gateway supports multiple audio/video transport protocols:

- NDI
- SRT
- WebRTC
- SDI (On-Premise)
- CDI (AWS Cloud)

Table 2 lists the Streaming Gateway input and output protocols.

Input/Output	SDI/CDI	NDI	SRT	WebRTC
SDI/CDI	Yes	Yes	Yes	Yes
NDI	Yes	Yes	Yes	Yes
SRT	Yes	Yes	Yes	No
WebRTC	Yes	Yes	No	No

Table 2 Supported Protocols

Note: The following conditions apply to SDI and CDI sources.

- SDI sources are on-premise only.
- CDI sources are AWS cloud only.

Audio/video signal conversions are also supported by the Streaming Gateway as required.

Configuring the Source for a Connection

Each connection is configured independently, allowing you to assign different types of sources as the source for a connection. This section outlines how to assign the SDI input signal, or the NDI, CDI, SRT, or WebRTC stream as a source. Once all the sources are configured, you can proceed to assign each source to an output (destination) to create a connection.

★ By default, there are two sources populated in DashBoard. You may edit one of these preexisting sources instead of creating a new one, if desired.

Specifying the SDI Input as a Source

Ensure that you have connected the SDI source to Port 1 on the Streaming Gateway. Refer to "**SDI Cabling**" for details.

To specify the SDI input as a source

- 1. Display the **Source Configuration** interface as outlined in "**Accessing the SSG Sub-node in DashBoard**".
- 2. Click Create Source.

A new row displays in the source table (left pane) and the DashBoard window updates to display the Source Configuration options (right pane).

softGe	ear Stre	aming Ga	ateway								ROSS
Connections Contro	ol Source	Configuration	Destination	Configuration	Configura	ation					
Name	Туре	Status	¢					Source Config	guration		
Source 1		😑 Online			Status	Offine					
Source 2		Offline			Name	undefined	Туре	None			
Source 3		Offline									
		Offline									
undefined		Offline									
undefined	None	Offine									
Create Sou	irce	Delete S	Source							Apply	Cancel

3. Use the **Name** field to specify a unique identifier for the source.

The source name is used to identify the available sources on the **Destination Configuration** tab.

4. Use the **Type** menu to select **SDI**.

The **Source Configuration** area updates to display options for configuring the source as an SDI input signal.

softGe	ear Str	eaming Ga	ateway									ROSS
Connections Contr	ol Sou	ce Configuration	Destination	Configuration	Configura	ition						
Name	Туре	Status						Source (Configuration			
Source 1		😑 Online			Status	Apply Changes						
Source 2		Offline			Name	undefined	Туре	SDI		Video Format	1080/59.94	
Source 3		Offline			Port	Part 1						
Source 4		Offline										
undefined	None	Offline										
undefined	None	Offline										
Create Sou		Delete :										Cancel

- 5. Use the **Port** menu to specify the physical SDI port on the back panel that will be the input signal for this source.
- **★** The **Video Format** field reports the signal format on the selected Port. This field is read-only.
- 6. Click **Apply**.
- 7. Continue to "Configuring the Destination for a Connection".

Specifying the NDI Stream as a Source

The Global Settings sub-tab (located in the SSG > Configuration tab) provides options for NDI Global Source Discovery.

★ If you are using a private group or an external server, ensure that the NDI Global Source Discovery is set accordingly. Refer to "Global Settings Tab" for a list of options.

To specify the NDI stream as a source

1. Display the **Source Configuration** interface as outlined in "**Accessing the SSG Sub-node in DashBoard**".

2. Click Create Source.

A new row displays in the source table (left pane) and the DashBoard window updates to display the Source Configuration options (right pane).

softGe	ar Strear	ming Ga	ateway								ROSS
Connections Contro	ol Source Co	onfiguration	Destination	Configuration	Configura	tion					
Name	Туре	Status							Source Configuration		
Source 1		😑 Online			Status	Offline					
Source 2		Offline			Name	undefined	Ту	pe None			
Source 3		Offline									
		Offline									
undefined		Offine									
undefined	None	Offine									
Create Sour	rce	Delete S	Source							Apply	Cancel

3. Use the **Name** field to specify a unique identifier for the source.

The source name is used to identify the available sources on the Destination Configuration tab.

4. Use the **Type** menu to select **NDI**.

The **Source Configuration** area updates to display options for configuring the source as an NDI stream.

softG	Gear St	reaming Ga	ateway									ROSS
Connections Cor	ntrol So	urce Configuration	Destination	Configuration	Configura	tion						
Name	Type	Status						Source	e Configuratior	1		
Source 1		😑 Online			Status	Apply Changes						
Source 2		Offine			Name	undefined	Туре	NDI			Video Format N/A	
Source 3		Offine		Create NE)I Source		NDI Source	Please Select S	Source	Update		
Source 4		Offine										
undefined	None	Offine		IP	9 Address							
undefined	None	Offine										
Create S	Source	Delete S	Source								Apply	Cancel

- 5. Click the **Update** button beside the **NDI Source** menu.
- 6. Use the **NDI Source** menu to select the desired source.

The **IP Address** field populates with the IP Address for the selected source.

- If you want to create an NDI source instead of selecting an existing one, select the Create NDI Source box and manually fill the IP Address and Port fields.
- 7. Click Apply.
- 8. Continue to "Configuring the Destination for a Connection".

Troubleshooting Tip

When the setup forms a loop where NDI is a sender, this can lead to an issue when rebooting or switching the connection offline then online. An example of the setup would be:

On-Premise Server: SDI --> SRT (caller) Cloud Instance 1: SRT (listener) --> NDI (sender) Cloud Instance 2: NDI (receiver) --> SRT (listener) On-Premise Server: SRT (caller) --> SDI

After a reboot or being switched offline then online, the NDI receiver on Cloud Instance 2 in this example will report no signal because the designated port has changed. There are two methods to fix this:

Method 1

- 1. Turn off Cloud Instance 2.
- 2. Change the Port to the next Port in the range of 5961-6061 until the NDI receiver detects the signal and the status reports it.

Method 2

- 1. Turn the connection offline.
- 2. On the Source Configuration tab, clear the Create NDI Source box.
- 3. Click the **Update** button beside the **NDI Source** menu.
- 4. Use the **NDI Source** menu to select the desired source.
- 5. Select the **Create NDI Source** box.

- 6. Click Apply.
- 7. Turn the connection back online.
- The NDI External IP field on the Configuration tab must contain the IP address of the NDI Sender for this to work. For more information on the NDI External IP field, refer to Table 28.

Specifying the CDI Stream as a Source

CDI is only used in the AWS cloud. Make sure that you are using an instance with EFA and that the driver has been installed.

To specify the CDI stream as a source

- 1. Display the **Source Configuration** interface as outlined in "**Accessing the SSG Sub-node in DashBoard**".
- 2. Click Create Source.

A new row displays in the source table (left pane) and the DashBoard window updates to display the Source Configuration options (right pane).

softG	iear Stre	aming Ga	ateway									ROSS
Connections Con	trol Source	Configuration	Destination	Configuration	Configura	ition						
Name	Туре	Status						Source C	Configuration			
Source 1	SDI	😑 Online			Status	Offine						
Source 2		Offline			Name	undefined	Туре	None				
		Offline										
Source 4		Offline										
undefined	None	Offline										
undefined	None	Offine										
Create S		Delete :									Apply	Cancel
										_		

3. Use the **Name** field to specify a unique identifier for the source.

The source name is used to identify the available sources on the Destination Configuration tab.

4. Use the **Type** menu to select **CDI**.

The **Source Configuration** area updates to display options for configuring the source as a CDI stream.

5. Use the **Port** menu to specify the port for the input signal of this source.

The **Video Format** field reports the signal format on the selected Port. This field is read-only.

- 6. Click **Apply**.
- 7. Continue to "Configuring the Destination for a Connection".

Specifying an SRT Stream as a Source

To establish an SRT-to-SRT connection, one of the peers must operate in **Listener** mode while the other operates as **Caller**. The mode of operation for the peer is determined by network configuration. It is not important which mode either the source or destination operates in.

Keep in mind that:

- The SRT peer operating in Listener mode must be reachable over UDP on the port specified in the Local Port field for listener mode.
- The SRT peer operating in Caller mode simply calls the listener at the specified Target URL (Host:Port).

To specify an SRT stream as a source

- 1. Display the **Source Configuration** interface as outlined in **"Accessing the SSG Sub-node in DashBoard**".
- 2. Click **Create Source**.

A new row displays in the source table (left pane) and the DashBoard window updates to display the Source Configuration options (right pane).

softGe	ear Strea	aming Ga	ateway								ROSS
Connections Cont	rol Source	Configuration	Destination	Configuration	Configura	tion					
Name	Туре	Status						Sourc	ce Configuration		
Source 1		😑 Online			Status	Offine					
Source 2		Cffline			Name	undefined	Туре	None			
		Cffline									
Source 4		Cffline									
undefined		Offline									
undefined	None	Cfline									
			•								
Create So										Apply	Cancel

3. Use the **Name** field to specify a unique identifier for the source.

The source name is used to identify the available sources on the Destination Configuration tab.

4. Use the **Type** menu to select **SRT**.

The **Source Configuration** area updates to display options for configuring the source as an SRT stream.

softG	ear S	treaming Ga	iteway							ROSS
Connections Con	trol S	ource Configuration	Destination	Configuration Configura	tion					
Name	Туре	Status					Source Configuration			
Source 1		😑 Online		Status	Apply Changes					
Source 2		Offine		Name	undefined	Туре	SRT		Latency (ms)	200 🗘
Source 3		Offine		Mode	Listener	Local Port	9000	÷		
Source 4		Offine								
undefined	None	Offine		Encryption						
undefined	None	Offine								
Course D		Delete C							Annie	C1
Create Si	ource	Delete S	ource							Cancel
					Refresh					

- 5. Use the **Mode** menu to select either **Caller** or **Listener**.
- 6. Use the **Latency (ms)** field to define the minimum receiver buffering delay before delivering an SRT data packet from a receiving SRT socket to stream decoder.
- 7. If the **Mode** selected in step 5 was **Caller**, use the **Target URL (Host:Port)** fields to define the IP and the port.

If the **Mode** selected in step 5 was **Listener**, use the **Local Port** field to define the port.

- 8. *(optional)* For configurations in which the Listener expects a specific Stream ID to be present, set the **Stream ID** field on the **Caller** to define the Stream ID for the connection.
- If you are using encryption, continue to step 9. If you are not using encryption, continue to step 12.
- 9. Select the **Encryption** box.
- 10. Use the **Key Length** menu to select the desired key length to encrypt the data.
- 11. Use the **Passphrase** field to specify a string between 10-80 characters long. The passphrase must match for both peers.
- 12. Click **Apply**.
- 13. Continue to "Configuring the Destination for a Connection".

Specifying a WebRTC Stream as a Source

You must manually specify the WebRTC credentials for each stream you wish to use as a source. Note that WebRTC does not support frame rate conversion. Any connection with a WebRTC source will not have Audio Sample Rate Converter (SRC) or Video Scaler options.

To specify a WebRTC stream as a source

- 1. Display the **Source Configuration** interface as outlined in "**Accessing the SSG Sub-node in DashBoard**".
- 2. Click Create Source.

A new row displays in the source table (left pane) and the DashBoard window updates to display the Source Configuration options (right pane).

softG	ear Stre	eaming Ga	ateway								1	<u>ROSS</u>
Connections Cont	trol Sourc	ce Configuration	Destination	Configuration	Configura	tion						
Name	Туре	Status							Source Configuration			
Source 1		😑 Online			Status	Offline						
Source 2		Offine			Name	undefined	Тур	e No				
Source 3		Offine										
Source 4		Offine										
undefined	None	Offine										
undefined	None	Offine										
			•									
Create So		Delete S										

- 3. Use the **Name** field to specify a unique identifier for the source.
- 4. Use the **Type** menu to select **WebRTC**.

The **Source Configuration** area updates to display options for configuring the source as a WebRTC stream.

softG	ear Strea	iming Ga	teway								ROSS
Connections Cont	trol Source (Configuration	Destination (Configuration Configura	ition						
Name	Туре	Status					Source Configu	uration			
Source 1		😑 Online		Status	Apply Changes						
Source 2		Offline		Name	undefined	Туре	WebRTC		Video Format	1080p59.94	•
Source 3		Offline		Stream Name	Unknown	Websocket URI	Unknown		Websocket Token	Unknown	
Source 4		Offline									
undefined	None	Offline		Has Video	⊻	Has Audio	⊻				
undefined	None	Offline 0									
			-								
Create So	ource										Cancel
					Refresh						Close

- 5. Use the **Stream Name** field to specify the unique identifier that the WebRTC application uses for this connection.
- 6. Use the **Video Format** menu to specify the video format of the stream.
- 7. Use the **Websocket URI** field to specify the Uniform Resource Identifier (URI) when connecting the Streaming Gateway to the remote WebRTC peer.
- 8. If required, use the **Websocket Token** field to specify the unique identifier that the Streaming Gateway will use for this specific connection.
- 9. Select the **Has Video** box if the stream includes video data.
- 10. Select the **Has Audio** if the stream includes audio data.
- 11. Click Apply.
- 12. Continue to "Configuring the Destination for a Connection".

Configuring the Destination for a Connection

A destination for a connection can include only the video, only the audio, or both the audio and video from a single source. Each destination is configured independently.

Assigning an SDI Output as the Destination

Before proceeding, ensure that you have assigned at least one SDI port as an output on the Streaming Gateway.

★ An interlaced video format (1080i) input does not function correctly with a progressive video format output.

To assign an SDI output as the destination

- 1. Display the **Destination Configuration** interface as outlined in "Accessing the SSG Sub-node in DashBoard".
- 2. Click Create Destination.

A new row displays in the destination table (left pane) and the DashBoard window updates to display the Destination Configuration options (right pane).

SO	ftGear S	treamir	ng Gatew	vay									ROSS
Connection	s Control S	ource Config	uration Dest	tination	Configuration	Configuration							
Name	Src Type	Туре	Status					[estination (Configuration			
Dest 1	SDI	NDI	😑 Online	^		Status	Offline						
Dest 2			Offine										
Dest 3			Offine			Name	undefined	Туре	None		Video Sour	ce Off	
Dest 4			Offine										
Dest 5			Offine										
undefined	N/A	None	Offine										
Creat			Delete Destinatio										
_													
						Refres							

- ★ By default, there are two destinations populated in DashBoard. You may edit one of these preexisting destinations instead of creating a new one, if desired.
- 3. Use the **Name** field to specify a unique identifier for the destination.

This name is used to quickly identify connections on the Connections Control tab.

4. Use the **Type** menu to select **SDI**.

The **Destination Configuration** pane updates to display options for configuring the destination as an SDI output signal.

SO	ftGear	Streamin	ig Gate	eway	20									ROSS
Connection	s Control	Source Configu	ration [Destination Configuratio	n Configuration									
Name	Src Type	Туре	Status	8				D	estination	Configuration				
Dest 1			😑 Onlir		Status	Apply C	hanges							
Dest 2	SDI		Offlir		Name	undefined		Type	SDI		-	Video S	ource	off 🗸
Dest 3		NDI	Offlir	10										
Dest 4			Offin	18	Port	Port 2								
undefined	NA	None	Offir	18	Output Video Setting	Configure		Outout Audio						
					ouput theo setting			ouput Audio						
					AV Sy	mc	•							
								A	udio Chan	nel Mapping				
					Output Channels	•			· · · 0 \$	Sou	irce Off			Apply Map
														· _
					Channel 1	Off		Off		Chann	el 2 Off		Off	•
					Channel 3	Off		Off		Chann	el 4 Off		Off	•
					Channel 5			Off		Chann	el6 Off			
					Channel 7			Off		Chann	el 8 Off		Off	
					Channel 9	C#		Off		Channe	110 Off		Off	
				•										•
Creat		C	Delete Destir											
					Re	fresh								

- 5. Use the **Video Source** menu to specify the source for the destination.
- 6. Select the **Configure** button for the **Output Video Settings**.

The **Output Video Settings** window opens.

Output Vi	deo Settings	
Output Video		
Video Scaler		
Video Format	1080p59.94	-
Aspect Ratio Control	Letterbox/Pillarbox	·
	Exit	
1		

- Select the **Output Video** box to output the video data in this destination.
 When the **Output Video** box is selected, the **Video Scaler** box will display.
- Select the Video Scaler box to apply video scaling to the output video.
 When the Video Scaler box is selected, the Video Format menu will display.
- 9. Use the Video Format menu to specify the video format of the SDI signal.
- 10. Use the **Aspect Ratio Control** menu to set the aspect ratio to Letterbox/Pillarbox or Full Frame.
- Select Exit to close the Output Video Settings window.
 The Output Video Settings window closes.

- 12. Use the **Port** menu to assign the physical SDI output port to the destination.
- 13. Select the **Output Audio** box to output the audio data in this destination.

When the **Output Audio** box is selected, the **Audio SRC** box will display.

- 14. Select the **Audio Sample Rate Converter** box to convert the sample rate of the audio.
- 15. Click Apply.
- 16. If you selected the **Output Audio** box in step 13, proceed to "**Mapping the Audio Channels for an SDI or NDI Output**".

Assigning an NDI Stream as the Destination

In the same way that an SDI output needs a cable connection to work, an NDI stream needs a network card and a network connection for use as the destination.

★ When switching a connection with an NDI stream online and offline on a cloud server, the Port will change.

To assign an NDI stream as the destination

- 1. Display the **Destination Configuration** interface as outlined in "**Accessing the SSG Sub-node** in **DashBoard**".
- 2. Click Create Destination.

A new row displays in the destination table (left pane) and the DashBoard window updates to display the Destination Configuration options (right pane).

SO	ftGear S	Streamir	ng Gatev	vay										ROSS
Connection	s Control S	ource Config	uration Des	tination	Configuration	Configuration								
Name	Src Type	Туре	Status	te				l	estination C	onfiguration				
Dest 1			😑 Online			Status	Offline							
Dest 2			Offline			Name	undefined	Tumo	None		-		Video Sourc	
Dest 3	SDI	NDI	Offline			, and	unueimeu	1920					video Sourc	
Dest 4	SDI	NDI	Offline											
Dest 5	SDI	NDI	Offline	_										
undefined	N/A	None	Offine											
	o Doctination													
Creat	e Destination		Delete Destinati									Арріу		

- ★ By default, there are two destinations populated in DashBoard. You may edit one of these preexisting destinations instead of creating a new one, if desired.
- 3. Use the **Name** field to specify a unique identifier for the destination.

This name is used to quickly identify connections on the Connections Control tab.

4. Use the **Type** menu to select **NDI**.

The **Destination Configuration** pane updates to display options for assigning an NDI stream to a destination.

so	ftGear	Streamir	ng Gate	eway										ROSS	
Connection	s Control	Source Config	aration (Destination	Configuration Configu	ration									
Name	Src Type	Туре	Status	E				D	estination	Configuration					1
Dest 1			Onlir			Status	😑 Apply Changes								
Dest 2			Offin			Name	undefined	Туре	NDI			Video	Source	of -	
Dest 3		NDI	- Offin	99 											
Dest 5		NDI			Stream Name (SGa4t	ob6d5e3112)	Undefined	Group Name	Public						
undefined	N/A	None	Offic	19	Output Vide	o Settings		Output Audio		O					
						AV Sync	✓								
								A	udio Chanr	nel Mapping					1
					Output Cha	annels 0			¦ 0 ≎ 16	Source	Off				
					Cha	nnel 1 Off		Off		Channel 2	Off		Off		
					Cha	nnel 3 Off		Off		Channel 4	Off		Off		
					Cha	nnel 5 Off		Off		Channel 6	Off		Off		
					Cha	nnel 7 Off		Off		Channel 8	Off		Off		
					Cha	nnel 9 Off		Off		Channel 10	Off		Off		
														•	Ť
Crea															
															æ

- 5. Use the Video Source menu to select the desired source.
- 6. Use the **Stream Name** field to assign a unique identifier to the NDI stream.
- 7. Use the **Group Name** field to specify a private group name for the Receiver to join to get the stream.
- 8. Select the **Configure** button for the **Output Video Settings**.

The Output Video Settings window opens.

9. Select the **Output Video** box to output the video data in this destination.

When the **Output Video** box is selected, the **Deinterlace** and **Video Scaler** boxes will display.

- 10. Select the **Deinterlace** box to enable de-interlacing using linear interpolation. This only displays when the Video Source is a WebRTC source.
- 11. Select the **Video Scaler** box to apply video scaling to the output video.

When the **Video Scaler** box is selected, the **Output Resolution** and **Output Frame Rate** menus will display.

- 12. Use the **Resolution** menu to specify the resolution of the NDI signal.
- 13. Use the **Frame/Field Rate** menu to specify the frame rate of the NDI signal.
- 14. Select the **Interlaced** box to output interlaced video.
- ★ When this box is not selected, the output is progressive video. This option is only accessible for certain Resolution and Frame/Field Rate format combinations. Refer to **Table 23** for these combinations.
- 15. Use the **Aspect Ratio Control** menu to set the aspect ratio to Letterbox/Pillarbox or Full Frame.
- 16. Select **Exit** to close the **Output Video Settings** window.

The Output Video Settings window closes.

17. Select the **Output Audio** box to output the audio data in this destination.

When the **Output Audio** box is selected, the **Audio Sample Rate Converter** menu will display.

- 18. Use the **Audio Sample Rate Converter** menu to select the rate at which to convert the sample rate of the audio.
- 19. Click Apply.

20. If you selected the **Output Audio** box in step 17, proceed to "**Mapping the Audio Channels for an SDI or NDI Output**".

Assigning a CDI Stream as the Destination

CDI is only used in the AWS cloud. Make sure that you are using an instance with EFA and that the driver has been installed.

To assign a CDI stream as the destination

- 1. Display the **Destination Configuration** interface as outlined in "**Accessing the SSG Sub-node** in **DashBoard**".
- 2. Click **Create Destination**.

A new row displays in the destination table (left pane) and the DashBoard window updates to display the Destination Configuration options (right pane).

so	ftGear	Streamir	g Gatev	vay	30							<u></u> R0)
Connections	s Control	Source Configu	ration Des	tination Configuratio	n Configuration								
Name	Src Type	Туре	Status				De	stination Config	juration				
Dest 1			😑 Online		Status	Offline							
Dest 2			Offline		Name	undefined	Type	None		Video S	Source	ur ·	
Dest 3	SDI	NDI	Offline					Nono			o dine o		
Dest 4	SDI	NDI	Offline										
Dest 5	SDI	NDI	Offline	_									
undefined	N/A	None	Offline										
				-									
Creat		ſ											
													Close

- ★ By default, there are two destinations populated in DashBoard. You may edit one of these preexisting destinations instead of creating a new one, if desired.
- 3. Use the **Name** field to specify a unique identifier for the destination.

This name is used to quickly identify connections on the Connections Control tab.

4. Use the **Type** menu to select **CDI**.

The **Destination Configuration** pane updates to display options for assigning a CDI stream to a destination.

- 5. Use the **Video Source** menu to select the desired source.
- 6. Use the **IP** field to identify the IP address of the receiver.
- 7. Use the **Port** menu to assign the output port to the destination.
- Select the Update button for the Output Video Settings.
 The Output Video Settings window opens.
- Select the **Output Video** box to output the video data in this destination.
 The **Bid-Depth** menu and **Video Scaler** box display.
- 10. Use the **Bit-Depth** menu to select the desired bit-depth.
- 11. Select the **Video Scaler** box to apply video scaling to the output video.

The Output Resolution and Output Frame Rate menus display.

- 12. Use the **Resolution** menu to specify the resolution of the CDI signal.
- 13. Use the **Frame/Field Rate** menu to specify the frame rate of the CDI signal.
- 14. Select the **Interlaced** box to output interlaced video.
- ★ When this box is not selected, the output is progressive video. This option is only accessible for certain Resolution and Frame/Field Rate format combinations. Refer to **Table 24** for these combinations.
- 15. Select Exit.

The Output Video Settings window closes.

16. Select the **Output Audio** box to output the audio data in this destination.

The Audio SRC menu displays.

- 17. Use the **Audio SRC** menu to select the rate at which to convert the sample rate of the audio.
- 18. Select the **Output ANC** box to output the ancillary data in this destination.
- 19. Click Apply.
- 20. If you selected the **Output Audio** box in step 17, proceed to "**Mapping the Audio Channels for** a **CDI Output**".

Assigning an SRT Stream as the Destination

To establish an SRT-to-SRT connection, one of the peers must operate in **Listener** mode while the other operates as **Caller**. The mode of operation for the peer is determined by network configuration. It is not important which mode either the source or destination operates in. Keep the following in mind:

- The SRT peer operating in **Listener** mode must be reachable over UDP on the port specified in the **Local Port** field for listener mode.
- The SRT peer operating in **Caller** mode simply calls the listener at the specified **Target URL** (Host:Port).

Refer to **Table 25** for further information on the menus and fields involved in assigning an SRT stream as the destination.

To assign an SRT stream as the destination

- 1. Display the **Destination Configuration** interface as outlined in **"Accessing the SSG Sub-node in DashBoard**".
- 2. Click Create Destination.

A new row displays in the destination table (left pane) and the DashBoard window updates to display the Destination Configuration options (right pane).

so	ftGear	Streamir	ng Ga	teway								1	ROSS
Connection	s Control	Source Configu	uration	Destination	Configuration	Configuration							
Name	Src Type	Туре	Status					Desti	nation Configuration				
Dest 1			😑 On			Status	Offline						
Dest 2			• of	line				-		-			_
Dest 3			• off	line		Name	undenned	Type N	ione		Video S	ource Off	
Dest 4			• Off	line									
Dest 5	SDI	NDI	Off	line									
undefined	N/A	None	O Of	line									
Creat	te Destination		Delete Des	tination							Apply	Canc	el

- ★ By default, there are two destinations populated in DashBoard. You may edit one of these preexisting destinations instead of creating a new one, if desired.
- 3. Use the **Name** field to specify a unique identifier for the destination.

This name is used to quickly identify connections on the Connections Control tab.

4. Use the **Type** menu to select **SRT**.

The **Destination Configuration** pane updates to display options for assigning an SRT stream to a destination.

SO	ftGear	Streamin	ng Gati	eway										ROSS
Connection	s Control	Source Configu	uration 1	Destination (Configuration	Configuration								
Name	Src Type	Туре	Status	ţ.					D	stination Conf	figuration			
Dest 1			😑 Onlin	ne î		Status	😑 Apply Cha	inges						
Dest 2			Offir			N	undefined.			ODT		-		
Dest 3			Offir			Name	undelined		type	SKI				
Dest 4			Offir			Mode	Caller		Bandwidth Mode	Hardware Limit			Bandwidth Limit (kbp	s) 1000 🗘
Dest 5	SDI	NDI	Offir	ne										
undefined	N/A	None	Offin	ne		Target URL (Host:Port)	Unknown	9001 🗘	Stream ID			÷	Bandwidth Overhead (9) 25 ‡
						Encrypt Stream							Input Rate (kbp	5) 1 🗘
									MPE	G-TS Elementa	ary Streams			
								Video Stre	eam Settings		Edit	Audio Stream		
								lidaa Straamk	a) 06		Audia Streamin	PID Source	Channels 🛱	
								nueo sueamp	a <u>Cu</u>		Addio Streampy	Auto Off	¢	
		_		Ť										
Creat		C											Apply	
_														

- 5. Use the **Mode** menu to select either **Caller** or **Listener**.
- 6. Use the **Bandwidth Mode** options to specify the Bandwidth limits. Choose from the following:
 - Hardware Limit The Streaming Gateway applies the ethernet port bandwidth as the limit.
 - Input Rate Limit The Input Rate and Bandwidth Overhead fields are now editable.
 - Manual Limit The Bandwidth Limit field is now editable.
- 7. If the **Bandwidth Mode** is set to **Manual Limit**, use the **Bandwidth Limit (kbps)** field to define the maximum sender bandwidth.

- 8. If the **Bandwidth Mode** is set to **Input Rate Limit**:
 - a. Use the **Bandwidth Overhead (%)** field to define the recovery bandwidth overhead.
 - b. Use the **Input Rate (kbps)** field to define the anticipated bitrate of your live stream.
- 9. Perform one of the following:
 - If the **Mode** selected in step 5 was **Caller**, use the **Target URL (Host:Port)** fields to define the port.
 - If the **Mode** selected in step 5 was **Listener**, use the **Local Port** field to define the port.
- 10. *(optional)* For configurations in which the Listener expects a specific Stream ID to be present, set the **Stream ID** field on the **Caller** to define the Stream ID for the connection.
- 11. Select the Video Stream Settings button for the Video Stream Settings.

The Video Stream Settings window opens.

Video Strea	m Settings
Video Source	142_SDI_IP2 -
PID Option	Auto 👻
PID Value	0 \$
H264 E	ncoder
Encoding Profile	Main 🔫
Video Bit Rate (kbps)	CBR - 25000 🖨
Video Video Scaler	Scaler

- 12. Use the **Video Source** menu to select the desired source.
- 13. Use the **PID Option** menu to select Auto or Custom.
- 14. Use the **PID Value** menu to set a custom PID value if the PID Option is set to Custom.
- 15. Use the **Encoding Profile** menu to select the H264 profile to be used.
- ★ If High 4:2:2 is enabled, Intel Quick Sync hardware acceleration will be disabled.
- 16. Use the **Video BitRate(kbps)** fields to define the video bitrate and mode.
- 17. To apply video scaling to the output video:
 - a. Select the **Video Scaler** box.

The **Output Resolution** and **Output Frame Rate** menus display.

- b. Use the **Resolution** menu to specify the resolution of the SRT signal.
- c. Use the **Frame/Field Rate** menu to specify the frame rate of the SRT signal.
- d. Select the **Interlaced** box to output interlaced video.
- ★ When this box is not selected, the output is progressive video. This option is only accessible for certain Resolution and Frame/Field Rate format combinations. Refer to **Table 25** for details.

- e. Use the **Aspect Ratio Control** menu to set the aspect ratio to Letterbox/Pillarbox or Full Frame.
- 18. Select **OK**.

The Video Stream Settings window closes.

★ If you are using encryption, continue to step 19. If you are not using encryption, continue to step 24.

19. Select the **Configure** button for **Encrypt Stream**.

The Encrypt Stream window opens.

20. Select the **Encrypt** box.

The **Key Length** menu and **Passphrase** field display.

- 21. Use the **Key Length** menu to select the desired key length to encrypt the data.
- 22. Use the **Passphrase** field to specify a string between 10-80 characters long. The passphrase must match for both peers.
- 23. Select **Exit** to close the **Encrypt Stream** window.

The **Encrypt Stream** window closes.

24. Select the **Edit Audio Stream** button for the **Audio Stream Settings**.

The Audio Stream Settings window opens.

- 25. Use the **PID Option** menu to select Auto or Custom.
- 26. Use the **PID Value** menu to set a custom PID value if the PID Option is set to Custom.
- 27. Use the **AAC Encoder Bit Rate** field to define the audio bitrate.
- 28. Use the **Audio Sample Rate Converter** menu to select the rate at which to convert the sample rate of the audio.
- 29. Select **OK**.

The Output Audio Settings window closes.

- 30. Click **Apply**.
- 31. Proceed to "Mapping the Audio Channels for an SRT Output".

Assigning a WebRTC Stream as the Destination

You must manually specify the WebRTC credentials for each output stream you wish to use.

★ WebRTC does not support frame rate conversion. Any connection with a WebRTC destination will not have Audio SRC or Video Scaler options.

To assign a WebRTC stream as the destination

- 1. Display the **Destination Configuration** interface as outlined in "**Accessing the SSG Sub-node** in **DashBoard**".
- 2. Click **Create Destination**.

A new row displays in the destination table (left pane) and the DashBoard window updates to display the Destination Configuration options (right pane).

so	oftGear	Streami	ng Gat	eway										ROSS
Connection	s Control	Source Config	uration	Destination	Configuration	Configuration								
Name	Src Type	Туре	Status						Destination	n Configuration				
Dest 1	SDI	NDI	😑 Onl	ine 🔷		Status	Offline							
Dest 2			om 🔿											
Dest 3			🔵 offi			Name	undefined	Туре	None			Video Sou	irce Off	
Dest 4			● om											
Dest 5			🔵 om											
undefined	N/A	None	🔘 om	ine										
Creat														
											_			

- ★ By default, there are two destinations populated in DashBoard. You may edit one of these preexisting destinations instead of creating a new one, if desired.
- 3. Use the **Name** field to specify a unique identifier for the destination.

This name is used to quickly identify connections on the Connections Control tab.

- ★ For WebRTC connections, some media servers do not recognize stream names with white space in them. Use single-string names only, with no spaces or special characters (hyphens and underscores are allowed).
- 4. Use the **Type** menu to select **WebRTC**.

The **Destination Configuration** pane updates to display options for assigning a WebRTC stream to a destination.

s	oftGear	Streami	ng Gatew	vay								ROS	5
Connectio	ns Control	Source Config	uration Dest	tination (configuration Configuration								
Name	Src Type	Type	Status	I\$			D	estination Co	onfiguration				
Dest 1	SDI	NDI	😑 Online	^	Status	Apply Changes							
Dest 2			Offine		Nama	and down of		W-+ 070		-	V84 6	-	
Dest 3			Offine		Name	undenned	туре	VVEDRTU			video Source		
Dest 4			Offine		Stream Name	Unknown	Websocket URI	Unknown			Websocket Token	Unknown	
Dest 5	SDI	NDI	Offline	_									
undefined	N/A	None	Offine		Output Video Settings		Output Audio						
							A	udio Channel	l Mapping				
					•								
					Output Channels			2 0 0	Source	Off	-	Apply Map	
					Channel 1 Off		✓ Off		Channel 2	Off	✓ Off		-
													•
		_		-									
Cre	ate Destination										Apply		

- 5. Use the **Video Source** menu to assign a source to the destination.
- 6. Use the **Stream Name** field to assign a unique identifier to the WebRTC stream. This name is then entered in the WebRTC peer window to access the stream.

- ★ For WebRTC connections, some media servers do not recognize stream names with white space in them. Use single-string names only, with no spaces or special characters (hyphens and underscores are allowed).
- 7. Use the **Websocket URI** field to specify the Uniform Resource Identifier (URI) to use when connecting the Streaming Gateway to the remote WebRTC peer device.
- 8. If required, use the **Websocket Token** field to assign a unique identifier for this specific WebRTC connection.
- 9. Select the **Configure** button for the **Output Video Settings**.

The Output Video Settings window opens.

10. Select the **Output Video** box to include the video data from the source in this destination.

The **Quality** menu and **Drop Frames** box display.

- 11. Use the **Quality** menu to select the output quality level.
- 12. Select the **Drop Frames** box to allow the Streaming Gateway to automatically drop frames when it detects a streaming bit rate higher than 2.5Mbps.
- 13. Select Exit.

The Output Video Settings window closes.

- 14. Select the **Output Audio** box to include the audio data from the source in this destination.
- To configure an audio-only output, clear the Output Video box. To configure a video-only output, clear the Output Audio box.
- 15. Click **Apply**.
- 16. If you selected the **Output Audio** box in step 14, proceed to "**Mapping the Audio Channels for** a **WebRTC Stream**".

Customizing the Audio Channel Mapping

This section outlines how to customize the audio channel mapping for a destination when the Output Audio box is selected for any output type.

Mapping the Audio Channels for an SDI or NDI Output

The number of audio channels you can map to the destination depends on the audio data from the assigned source.

To map the audio channels for an SDI or NDI output

- 1. Locate the Audio Channel Mapping area in the Destination Configuration tab.
- 2. Use the **Output Channels** slider to specify the number of channels to configure.
- ★ You can configure up to 16 output audio channels at once.
- 3. Select your **Source** using the drop down menu.
- 4. Click Apply Map.
- ***** The output audio channels will automatically be configured with the selected source.
- 5. If needed, manually configure the output audio channels by using the **Channel** drop down menus to assign a source audio channel to a destination audio channel.
- 6. Click **Apply**.

Mapping the Audio Channels for an SRT Output

The number of audio channels you can map to the destination depends on the audio data from the assigned source.

To map the audio channels for an SRT output

- 1. Locate the Edit Audio Stream button in the Destination Configuration tab.
- 2. Under Audio Stream Settings, locate the Audio Channel Mapping area.
- 3. Use the **Output Channels** slider to specify the number of channels to configure.
- ★ You can configure up to 16 output audio channels at once.
- 4. Select your **Source** using the drop down menu.
- 5. Click **Apply Map.**
- ★ The output audio channels will automatically be configured with the selected source.
- 6. If needed, manually configure the output audio channels by using the **Channel** drop down menus to assign a source audio channel to a destination audio channel.
- 7. Click **Apply.**

Mapping the Audio Channels for a CDI Output

The number of audio channels you can map to the destination depends on the audio data from the assigned source.

To map the audio channels for a CDI output

- 1. Locate the Audio Channel Mapping area in the Destination Configuration tab.
- 2. Use the **Output Channels** slider to specify the number of channels to configure.

★ You can configure up to 16 output audio channels at once.

- 3. Select your **Source** using the drop down menu.
- 4. Click **Apply Map.**
- ★ The output audio channels will automatically be configured with the selected source.
- 5. If needed, manually configure the output audio channels by using the **Channel** drop down menus to assign a source audio channel to a destination audio channel.
- 6. Click **Apply**.

Mapping the Audio Channels for a WebRTC Stream

The number of audio channels you can map to the destination depends on the audio data from the assigned source.

To map the audio channels for a WebRTC stream

- 1. Locate the Audio Channel Mapping area in the Destination Configuration tab.
- 2. Use the **Output Channels** slider to specify the number of channels to configure.
- ★ You can configure up to two output audio channels at once.
- 3. Select your **Source** using the drop down menu.
- 4. Click Apply Map.
- ★ The output audio channels will automatically be configured with the selected source.

- 5. If needed, manually configure the output audio channels by using the **Channel** drop down menus to assign a source audio channel to a destination audio channel.
- 6. Click Apply.
- ★ The Streaming Gateway supports up to two audio channels in a WebRTC stream. These audio channels can then be mapped to any of the two output audio channels. Use either the first or second menu to enable (On) or disable (Off) the channel in the output path.
- ★ Selecting Off will mute the channel in the output.
- 7. Click Apply.

Enabling a Connection

By default, a new connection is disabled (the status is reported as Offline) to ensure that a change in settings does not disrupt any downstream equipment or user portals. You must manually enable each connection by toggling its Online button on the Connections Control tab.

Enabling a Connection

Enabling a connection requires you to select it from the list of available connections and click the **Online** button. When the Online button is selected, the connection is published to downstream devices.

To enable a connection

- 1. Display the SSG sub-node in DashBoard as outlined in "Accessing the SSG Sub-node in DashBoard".
- 2. Ensure the **Connections Control** tab is selected.
- 3. From the **Connections** table, select the row for the connection you wish to enable.
- 4. Click **Online** (located in the bottom left corner of the **Connections** table).

The **Status** fields for the source and destination update to report that the selected connection is now enabled.

★ Only one SDI to WebRTC connection with video is permitted. The remaining connections must be audio only.

Disabling a Connection

Clicking the **Offline** button for a connection immediately stops that session and freezes the output. This is helpful:

- to free up bandwidth
- if the source is invalid or missing
- if the source includes data that you do not want to output
- to update the connection settings

To disable a connection

- 1. Display the SSG sub-node in DashBoard as outlined in "Accessing the SSG Sub-node in DashBoard".
- 2. Ensure the **Connections Control** tab is selected.
- From the **Connections** table, select the row for the connection you wish to disable.
 The **Selected Connection** area updates to display the settings for the connection.
- 4. Click **Offline** (located at the bottom of the **Connections** table).

The **Status** fields for the source and destination update to report that the selected connection is now disabled.

Editing an Existing Connection

Before editing an existing connection, ensure that it is currently offline (disabled) and not in use by downstream equipment or user portals. A connection must be offline before it can be edited.

To edit an existing connection

- 1. Disable the connection as outlined in "Disabling a Connection".
- 2. Edit the source for a connection using the steps in "Configuring the Source for a Connection".
- 3. Edit the destination for a connection using the steps in "**Configuring the Destination for a Connection**".
- 4. Enable the connection as outlined in "Enabling a Connection".
- ★ If you no longer want to save changes made to the connection, click **Cancel** instead of **Apply**. This will revert any changed field to its previous state.

Deleting a Connection

You cannot delete a connection that is currently online (active). You must first disable the connection, as outlined in "**To disable a connection**", before proceeding to delete it.

To delete a connection

- 1. Disable the connection as outlined in "Disabling a Connection".
- 2. Select the **Destination Configuration** tab.
- 3. From the **Destinations** table, select the row for the connection output you wish to delete.
- 4. Click Delete Destination (located at the bottom of the Destinations table).
- ★ If the Source for the deleted connection is no longer used by any other connection, it can also be deleted by performing steps 3-4 under the **Source Configuration** tab.

Troubleshooting

This section briefly summarizes some of the error messages that display on the Connections Control interface when creating the connections for your Streaming Gateway.

Audio Mapping is Invalid

The user attempted to map an unavailable (N/A) audio channel to a WebRTC stream. Ensure to map valid audio channels to your WebRTC stream as outlined in "**Mapping the Audio Channels for a WebRTC Stream**".

Destination Does Not Have Output Video or Output Audio Enabled

The output video and audio sources are not detected for a Destination. Verify that the Output Video and/or Output Audio box is selected on the Destination Configuration interface for the Destination. Refer to "**Configuring the Destination for a Connection**".

Destination is Online

The user attempted to edit a Destination that was assigned to a connection that is currently online and in use. You must first disable the associated connection before editing the Destination. Refer to **"Disabling a Connection"** and **"Editing an Existing Connection"**.

Maximum of 16 WebRTC Streams is Supported

The Streaming Gateway supports a maximum of 16 active WebRTC stream connections. If you wish to add a new WebRTC connection, you will first need to delete or disable a connection. Refer to **"Deleting a Connection"** or **"Disabling a Connection**".

Source is Online

The user attempted to edit a Source that was assigned to a connection that is currently online and in use. You must first disable the associated connection before editing the Source. Refer to **"Disabling a Connection"** and **"Editing an Existing Connection"**.

Video Source is Invalid

The user attempted to assign a video source that is not available (N/A). Refer to "**Configuring the Source for a Connection**" and "**Configuring the Destination for a Connection**".

Upgrading the Software

The Streaming Gateway can be upgraded in the field via DashBoard.

★ The Streaming Gateway is temporarily taken off-line during the upgrade process.

To upgrade the software on the Streaming Gateway

- 1. Contact Ross Technical Support for the latest software version file.
- 2. Ensure the Ethernet cable is connected to the **1G** port on the Streaming Gateway.
- 3. Display the System sub-node as outlined in "To display the System sub-node in DashBoard".
- 4. Select **Upload**, located near the bottom of the interface, to display the **Select file Upload** dialog.
- 5. Navigate to the ***.bin** file you want to upload.
- 6. Click **Open**.
- 7. Click **Next >** to display the **Select Destination** menu.

This menu provides a list of the compatible units.

8. Select the box for the Streaming Gateway you want to upload the file to.

The **Error/Warning** fields indicate any errors, such as incompatible software or product type mismatch.

- 9. Click Finish.
- 10. Monitor the upgrade.

An **Upload Status** dialog enables you to monitor the upgrade process.

- 11. Click **OK**.
 - The Upload Status dialog closes.
- ★ After the upgrade is complete, the server is automatically rebooted.
 - The process is complete once the status indicators in the **Connections Control** tab return to their previous status.

DashBoard Interface Overview

This chapter summarizes the sub-nodes, interfaces, tabs, and menus available from DashBoard for the Streaming Gateway.

System Sub-Node

The System sub-node has five main tabs with their own unique interfaces: the Ethernet, Licensing, Timing, Features, and About tabs.

Ethernet Tab

The Ethernet tab provides options to configure the network settings for the **1G** port on the back panel.

Ethernet Licensing Timing Features About			
	1 - 1G		
Status	😑 ок		
MAC Address	B8: CB:29.9B:3B:5B		
IPv4 Address			
Subnet Mask	255.255.255.0		
Gateway			
DNS	10.0.0.69		
Method	Static		
State	Activated		
	Dafrash	Inioad Roboot	
	Kenesit	Oproad Report	Close

Figure 18 Example of the Ethernet tab

Table 3 summarizes the fields displayed in the Ethernet tab (Figure 18).

Table 3 System — Ethernet

Item	Parameters	Description				
1-1G						
Status (read-only)	Reports the status of the o warning (yellow), or error	connection: online (green), offline (gray), (red)				
MAC Address (read-only)	#	Specifies the unique Media Access Control (MAC) Address assigned to the Streaming Gateway				
IPv4 Address	#	Specifies the static IP Address that the user wants to manually assign to the specified Streaming Gateway port				
	Unknown	The specified port is not configured				

Item	Parameters	Description			
Subnet Mask	#	Specifies the subnet mask value for the specified port on the Streaming Gateway			
	Unknown	The specified port is not configured			
Gateway	#	Specifies the gateway for communications outside of the local area network (LAN) the specified port on the Streaming Gateway will use			
	Unknown	The specified port is not configured			
DNS	#	Specifies the IP address of the DNS server that the Streaming Gateway will communicate with			
Method ^a	DHCP	The settings will be assigned by a DHCP server in your facility			
	Manual	The user manually supplies the settings			
State (read-only)	Activated	The specified port is active and is communicating with valid settings			
	Disconnected	Communication to the specified port is interrupted. Verify that the settings are correct and the port is physically cabled correctly.			
	Unavailable	The specified port is not active and is not configured for use			
Apply	Click this button to apply t	he new settings to the 1G port			

a. The options Unknown and Link-local are not implemented and should not be used.

Licensing Tab

Use the options on the Licensing tab to license your server, and to manage the features that require a valid Product Key.

Ethernet Lice	nsing Tir	ning Features About	1						
Activation Server	activation.ros	svideo.com	Port 443 :	Protocol HT	TPS 👻				
Status	activation sur	cessful							
Name		Description		Licensed To	License Key	Expiry	Number of Uses	Validity	Feature ID
Platform		Enables end-user features of	softGear platform	Ross softGear		xxxx Permanent		1∨alid	1065985 ^
NBI Receiver		NDI AV Receiver		Ross softGear		xxxx Permanent		1Valid	1065996
NUI Sender		NDI AV Sender		Ross softGear	xxxxx-xxxxx-xxxxx-x	xxxx Permanent		1Valid	1065997
Webkild Iransce	ewer	WebRIG Transceiver		Ross softGear	*****	xxxx Permanent		1 Valid	1066008
BlackMagic SDI C	Global	BlackMagic SDI Global		Ross softGear	xxxxx-xxxxx-xxxxx-xx	xxxx Permanent		1Valid	1066009
BlackWagic SDI I	Outout	BlackWagic SDI Input		Ross sonGear	*****	xxxx Permanent		t Valid 11 /alid	1066010
Ubura Controlized	d LII Controllor	Ubura Controlized UI Controli		Ross solidear	*****	XXXX Permanent		1Valid	1066074
SDLNDI Conversio		The conversion between SDI	and NDI	Ross solidear	*****	vvvv Permanent		1Valid	1066784
MPEG2 TS MLN		MDEC2.TS Muyar		Pass softGear	*****	vvvv Darmanant		/\/alid	1066017
SRT Transceiver		SRT Transceiver		Ross softGear	*****	vvvv Permanent		4Valid	1066019
MPEG2-TS DMX		MPEG2-TS Demuxer		Ross softGear	*****	xxxx Permanent		d∨alid	1066018
Audio Sample Ra	te Converter	Audio Sample Rate Converter		Ross softGear	xxxxx-xxxxx-xxxxx-xx	xxxx Permanent		4Valid	1066021
Video Scaler		Video Scaler		Ross softGear		xxxx Permanent		4Valid	1066020 🗸

Figure 19 Example of the Licensing tab

Table 4 summarizes the options displayed in the Licensing tab (Figure 19).

ltem	Parameters	Description
Product Key	#	Used to enter the Product Key in order to license the server
Activation Server	<text></text>	Used to enter the server the license must connect with to confirm its validity
Port	#	Used to select the Port for the Activation Server
Protocol	HTTP	Selects HTTP for the Activation Server
	HTTPS	Selects HTTPS for the Activation Server
Activate	Activates the entered Proc	duct Key
Deactivate	Deactivates the Product K	ey
Status	<text></text>	Can report the following:
		• the validity of the Product Key used,
		the result of activation,
		 and the result of checking the license per the interval defined by the licensing mode
Name	<text></text>	Reports the marketing code for the licensed feature
Description	<text></text>	Summarizes the licensed feature
Licensed To	#	Indicates the device the license applies to
License Key	#	This character string is used to obtain an Activation Key
Expiry	MM/YYYY	Reports the expiry date for the licensed feature
Number of Uses	#	Represents the amount of docker containers set up and running for the specific feature
Validity	Valid/Invalid	Reports if the Activation Key is valid and the feature is still licensed or not
Feature ID	#	Provides the license code that you must provide to Ross Technical Support

Table 4 System — Licensing

Timing Tab

The Timing tab provides options for configuring a connection to your facility NTP Server. (Figure 20)

Ethernet Licensing Timing Feature	es About			
NTP Status	ок			
Current Time	Mon May 16 20:21:05 2022 GMT			
NTP Server 1	0.pool.ntp.org			
NTP Server 2	1.pool.ntp.org			
	Apply Changes			
		Upload	Reboot	lose

Figure 20 Example of the Timing tab

Table 5 summarizes the fields displayed in the Timing tab.

Item	Parameters	Description
NTP Status (read-only)	OK (Green)	Indicates a valid time source is reporting to the Streaming Gateway
	Apply Changes (Yellow)	At least one NTP Server address has changed. Click Apply to save the new setting(s).
	Not Running (Red)	Software was not able to start NTP client
	No Servers Configured (Red)	The NTP Server fields are blank
	Cannot Resolve Server Name (Red)	At least one of the NTP Server host-names could not be resolved. It is recommended to specify the IP address instead of a host-name for the server.
	No Time Server Available At Address (Red)	At least one NTP Server IP Address does not have a valid time server running
Current Time (read-only)	Ddd Mmm ## hh : mm : ss yyyy GMT	 Indicates the encoded date where: Ddd represents the day of the week Mmm represents the month ## represents the day of the month hh : mm : ss reports the current encoding time as reported by the NTP Server(s) yyyy represents the year

Table 5 System — Timing
Tuble 5 System — Thining (Continueu)				
Item	Parameters	Description		
NTP Server 1	#	Specifies the first Network Time Server (NTP) address the Streaming Gateway can use for timecode information		
NTP Server 2	#	Specifies an additional Network Time Server (NTP) address the Streaming Gateway can use for timecode information		
Apply Changes	Applies any changes made	2		

Table 5 System — Timing (Continued)

Features Tab

The Features tab enables you to monitor the Streaming Gateway features. (Figure 21)

lame	Version	Hash	Buildstamp	State	Restart
sdp_midplane_0		214dbd8	2023-07-17T14:05:01+00:00	Running	Restart
	1.0.2	b8865a7	2023-07-17T14:05:59+00:00	Running	Restart
				Reserved	
dp_uhura-centralized-ui_10			2023-08-02T13:30:04+00:00	Running	Restart
dp_blackmagic-decklink-global_11		e2a7980	2023-07-17T14:05:50+00:00	Running	Restart
dp_blackmagic-decklink-input_12		cc8e6bf	2023-08-02T13:21:12+00:00	Running	Restart
dp_blackmagic-decklink-output_13		6887d51	2023-08-02T13:15:46+00:00	Running	Restart
dp_webrtc-client_14		4ac6e16	2023-07-17T14:10:40+00:00	Running	Restart
dp_ndi-receiver_15		1e03bd8	2023-07-25T13:20:15+00:00	Running	Restart
dp_ndi-sender_16		3973bac	2023-08-01T14:58:40+00:00	Running	Restart
dp_mc-muxer_17		42df757	2023-08-01T13:24:49+00:00	Running	Restart
dp_mc-muxer_18		42df757	2023-08-01T13:24:49+00:00	Running	Restart
dp_mc-muxer_19		42df757	2023-08-01T13:24:49+00:00	Running	Restart
dp_mc-muxer_20		42df757	2023-08-01T13:24:49+00:00	Running	Restart
dp_srt-transceiver_21		6346a56	2023-07-17T17:48:41+00:00	Running	Restart
dp_srt-transceiver_22		6346a56	2023-07-17T17:48:41+00:00	Running	Restart
dp_srt-transceiver_23		6346a56	2023-07-17T17:48:41+00:00	Running	Restart
dp_srt-transceiver_24		6346a56	2023-07-17T17:48:41+00:00	Running	Restart
dp_mc-demuxer_25		ca0910e	2023-08-01T13:35:07+00:00	Running	Restart
dp_mc-demuxer_26		ca0910e	2023-08-01T13:35:07 +00:00	Running	Restart
dp_mc-demuxer_27		ca0910e	2023-08-01T13:35:07+00:00	Running	Restart
dp_mc-demuxer_28		ca0910e	2023-08-01T13:35:07+00:00	Running	Restart
dp_audio-sample-rate-converter_29		b436d93	2023-08-01T18:36:09+00:00	Running	Restart
dp_audio-sample-rate-converter_30		b436d93	2023-08-01T18:36:09+00:00	Running	Restart
dp_audio-sample-rate-converter_31		b436d93	2023-08-01T18:36:09+00:00	Running	Restart
		b436493	2023-06-01718-36-09+00-00	Punning	Daetart

Figure 21 Example of the Features tab

Table 6 System — Features

Item	Parameters	Description
Name	<text></text>	The name of the feature
Version	#	The version of the feature
Hash	<text></text>	The hash of the feature
Buildstamp	<text></text>	The buildstamp of the feature
State	<text></text>	The state of the feature
Restart	button	Click the button to restart the feature

About Tab

The About tab reports product information, manage your configuration files, and access the system logs. (**Figure 22**)

Corial Number			
benai Number	12423		
Assembly Revision	A		
Product	softGear Streaming Gateway		
Product Version	2.3.0-d		
Product Hash	4669309		
rame Name	Ross Video's SSG	Apply	
lostname	10.62.122.129		
	Factory Default		
mport/Export Configurati	ion		
	Import/Export		
.ogs			
	Download		

Figure 22 Example of the About tab in the System Sub-node

Table 7 summarizes the fields and read-only information displayed in the **System** > **About** tab.

Item	Parameters	Description	
Product Information	า		
Serial Number (read-only)	#	The serial number assigned to the Streaming Gateway	
Assembly Revision (read-only)	#	The version of the Streaming Gateway hardware	
Product (read-only)	softGear Streaming Gatew	/ay	
Product Version (read-only)	<text></text>	The software build the Streaming Gateway is currently running	
Product Hash (read-only)	<text></text>	The hash of the software build	
Frame Name	<text></text>	Assigns a unique identifier to the Streaming Gateway. This name also displays in the node for the Streaming Gateway in the Tree View of DashBoard. The default is softGear Streaming Gateway. Note that any change to this name may take up to one minute to be reflected in the Tree View of DashBoard.	
Hostname (read-only)	#	Uniquely identifies the Streaming Gateway within a WebRTC system	
Factory Default	Click this button to reset all Streaming Gateway editable fields to the factory default values. This impacts all tabs except the Ethernet and About tabs. Clicking Factory Default will also trigger a reboot.		

Table 7 System — About

Item	Parameters	Description				
Import/Export Confi	Import/Export Configuration					
Import/Export	Click this button to export a config Gateway to your computer, or to in configuration file from your compu- export option allows you to save th your computer, while the import b saved configuration file onto the S trigger a reboot of the Streaming C Note: Only configurations that ma- licensed system will be imported.	uration file for the Streaming mport a previously saved uter to the Streaming Gateway. The ne current configuration to a file on outton lets you load a previously treaming Gateway. An import will Gateway. Itch the feature set of the currently				
Logs						
Download	Click this button to download an a location on your network or comp	rchive of the logs to a specified uter				

Table 7 System — About (Continued)

SSG Sub-Node

The SSG sub-node has four main tabs with their own unique interfaces: Connections Control, Source Configuration, Destination Configuration, and Configuration tabs.

Connections Control Interface

The Connections Control interface is organized into four areas (from left to right): Connections table, Connection Information, Video Source Information, and Audio Channel Mapping. (**Figure 23**)

sc	ftGear &	Streaming	g Gate	way						ROSS
Connection	s Control	Source Configura	ntion D	estination Configuration	Configuration					
Name	Src Type	Туре	Status	6	Connection In	formation		Video Source	Information	
Dest 1	SDI	NDI	Online							
Dest 2			Offline							
Dest 3			Offline		Current State			Source Name	Source 1	
Dest 4			Offline							
Dest 5			Offline		Destination Name	Dest 1		Source Type		
					Destination Tons			Course Status	Calles	
					besination type			Source Status	Onnine	
					Ndi Stream Name	Stream 1 - 132		Source Format		
					Video Format	1080;59.94				
								Connection S	tatus Details	
								SDI Input (12) 😑 OK		
								NDI Output (16) 💛 OK		
_										
					Refresh					

Figure 23 Example of the Connections Control Interface

Connections Table

The Connections table reports a list of active and inactive connections that the user has configured using the Sources Configuration and Destinations Configuration tabs. Each table row is a connection with the assigned Input, Output, and a brief status message. Selecting a row displays more information in the Selected Connection area.

Table 8 summarizes the read-only fields displayed in the **Connections** table.

Item	Description
Name	Reports the destination assigned as the output signal for the connection
SRC Type	Identifies the signal type of the input of the connection
Туре	Reports the signal type assigned to the destination
Status	Reports the connection status of the stream: online (green), offline (gray), or warning (yellow) of an error condition
Online	Select this button to enable the selected connection
Offline	Select this button to disable the selected connection

Table 8 SSG — Connections Control — Connections Table

Connection Information

Table 9 summarizes the read-only fields displayed in the Connection Information area.

For More Information on...

- the available input options, refer to "Source Configuration Interface".
- the available output options, refer to "Destination Configuration Area".

Item	Parameters	Description
Current State	Online	The connection is active and no errors are detected. The connection cannot be edited.
	Offline	The connection is inactive and can be edited
Destination Name	<text></text>	Reports the unique identifier assigned to the output signal of this connection. Used to identify the connection in the Manage Connections table.
Destination Type	SDI	Identifies the output of the connection as an SDI signal. Refer to Table 22 for details.
	NDI	Identifies the output of the connection as an NDI signal. Refer to Table 23 for details.
	CDI	Identifies the output of the connection as a CDI signal. Refer to Table 24 for details.
	SRT	Identifies the output of the connection as an SRT signal. Refer to Table 25 for details.
	WebRTC	Identifies the output of the connection as a WebRTC signal. Refer to Table 26 for details.
SDI Port	<text></text>	When the Destination Type is SDI, this field displays and reports which physical connection on the back panel is assigned as the SDI output for the connection

Table 9 SSG — Connections Control — Connection Information

Item	Parameters	Description
NDI Stream Name	<text></text>	When the Destination Type is NDI, this field displays and reports the network stream that is assigned as the output for the connection.
		The format of the name displayed will be: \$HostName(\$StreamName)
Connection Mode	<text></text>	When the Destination Type is SRT, this field displays and reports the connection mode that is assigned as the output for the connection
WebRTC Stream Name	<text></text>	When the Destination Type is WebRTC, this field displays and reports the network stream that is assigned as the output for the connection
Audio SRC	#	Indicates the rate set for Audio SRC in Output Audio Settings
Video Format	#	Indicates the video format of the input signal. Displays when Video Scaler is not selected.
Resolution	#	Indicates the resolution set in the Output Video Settings. Displays when Video Scaler is selected.
Frame Rate	#	Indicates the frame rate set in the Output Video Settings. Displays when Video Scaler is selected.
Host:Port	#	When the Destination Type is SRT and the Mode is set to Caller, this field displays and indicates the host and port used
Local Port	#	When the Destination Type is SRT and the Mode is set to Listener, this field displays and indicates the port used
H.264 H/W Acceleration	<text></text>	When the Destination Type is SRT, this field displays and reports if H.264 hardware acceleration Intel Quick Sync is in use.

Table 9 SSG — Connections Control — Connection Information (Continued)

Video Source Information

Table 10 summarizes the read-only fields displayed in the Video Source Information area.

		•
Item	Parameters	Description
Source Name	<text></text>	Reports the unique identifier assigned to the input signal of this connection
Source Type	SDI	Identifies the input of the connection as an SDI signal
	NDI	Identifies the input of the connection as an NDI signal

Table 10	SSG —	Connections	Control —	Video	Source I	nformation
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Item	Parameters	Description
Source Type	SRT	Identifies the input of the connection as an SRT signal
	WebRTC	Identifies the input of the connection as a WebRTC signal
Source Status	Online (Green)	The input signal is valid and no errors are detected
	No input signal detected (Yellow)	The specified port is assigned as an input but a valid signal is not detected on that port
	Initializing Signal (Yellow)	The Streaming Gateway is in the process of establishing a connection
	Closed to Signal Server (Yellow)	The input is unavailable. The connection with the media server is no longer valid.
	Shared Memory Input Error (Red)	The input cannot be connected. Toggling the Offline and Online buttons may fix this.
	Not Initialized (Red)	The input is no longer valid. Verify that the cable is secured to the port and that a valid signal is available on that port.
	Packets Missing (Red)	The input signal is experiencing errors. Verify if a valid signal is connected to the port.
	Offline (Gray)	The stream was stopped or is not yet initialized. Verify your network connections.
Source Format	#	Reports the input video format

Table 10 SSG — Connections Control — Video Source Information (Continued)

Connection Status Details

Table 11 summarizes the read-only fields displayed in the Connection Status Details area.

Item	Parameters	Description
Feature Name	<text></text>	The name of the feature (and its slot) in use
Status (read-only)	Reports the status of the c warning (yellow), or error (onnection: online (green), offline (gray), red)

Audio Channel Mapping

Table 12 summarizes the read-only fields displayed in the Audio Channel Mapping area.

Table 12 SSG — Connections Control — Audio Channel Mapping (Sheet 1 of 2)

Parameters	Description
Channel #	
Not in use	A source channel is not mapped to the specified audio output channel

Table 12 SSG — Connections Control — Audio Channel Mapping (Continued) (Sheet 2 of 2)

Parameters	Description
<text> Source, Channel #</text>	Reports the source audio channel that is mapped to the output channel using the options in the Destination Configuration interface

Source Configuration Interface

The Source Configuration interface is organized into two areas: Sources table, and Source Configuration.

soft	Gear Stre	eaming Ga	teway										ROSS
Connections Co	ntrol Sourc	e Configuration	Destination	Configuration	Configura	tion							
Name	Туре	Status							Source Configuration				
Source 1	SDI	🔵 Online	•		Status	😑 ок							
Source 2		Offline			Name	Source 1	Туј	e SDI			Video Format	1080/59.94	
Source 3	SDI	Offline			Port		-						
Source 4		Offline											
undenned	None	Umine											
			•							_			
Create S													Cancel

Figure 24 Example of the Source Configuration Interface

Sources Table

The Sources table reports a list of active and inactive sources that the user has configured. Double-clicking a row displays more information in the Sources Configuration area.

 Table 13 summarizes the read-only fields displayed in the Sources table.

ltem	Description
Name	Reports the source assigned as the input signal for the connection
Туре	Reports the signal type assigned to the source
Status	Reports the connection status of the source: online (green), offline (gray), or warning (yellow) of an error condition.
Create Source	Select this button to define and add a new source to the database
Delete Source	Select this button to remove the selected source from the database

Table 13	ssg — Ca	onnections	Control —	Sources
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Source Configuration Area

The options that display in the Source Configuration area depend on the Type setting. **Table 14** summarizes the fields that display for all Types.

ltem	Description		
Status (read-only)	Reports the status of the connection: online (green), offline (gray), warning (yellow), or error (red)		
Name	<text></text>	Identifier assigned to the source connection	
Video Format (read-only)	#	Indicates the video format of the input signal	

Table 14 SSG — Source Configuration > All Types

Table 15 summarizes the options when the Type is set to SDI.

ltem	Parameters	Description
Port	#	Specifies the SDI IN port (on the back panel) that the connection will use as the input signal. The list of available SDI inputs depends on the Configuration > Global Settings options.

Table 16 summarizes the options when the Type is set to NDI.

ltem	Parameters	Description
Create NDI Source	Selected	Allows you to create a new NDI source to use. When selected, you must manually enter the IP address and port # of the desired source.
	Cleared	Indicates that the source to be used is preexisting
NDI Source	<text></text>	Selects an existing source to use as the NDI Source
	Update	
IP Address	#	Reports the IP address of the selected source

Table 17 summarizes the options when the Type is set to CDI.

Table 17 SSG — Source Configuration — Type > CDI

Item	Parameters	Description
Port	#	Specifies the port for the input signal

Table 18 summarizes the options when the Type is set to SRT.

Item	Parameters	Description
Latency (ms)	#	Defines the minimum receiver buffering delay before delivering an SRT data packet from a receiving SRT socket to stream decoder
Mode	Listener	Indicates the mode for the source is set to Listener. When in Listener mode, you are listening on a port to establish a connection.
	Caller	Indicates the mode for the source is set to Caller. When in Caller mode, you are sending out a message to the IP and port to connect.
Local Port	#	Available in Listener Mode. Specifies the local port to be used.
Target URL (Host:Port)	<text>, #</text>	Available in Caller Mode. Specifies the target URL and port to be used.
Stream ID	<text></text>	Available in Caller Mode. Defines the Stream ID.
Encryption	Selected	Enables data encryption in transit using AES
	Cleared	Disables data encryption
Key Length ^a	Default	Defaults key length to 128-bit to encrypt the data
	AES-128	Specifies that 128-bit key length is used to encrypt the data
	AES-192	Specifies that 192-bit key length is used to encrypt the data
	AES-256	Specifies that 256-bit key length is used to encrypt the data
Passphrase ^b	<text></text>	Determines the passphrase that must be matching for both peers, or the connection will be rejected by the receiver and fail. Passphrase must be 10-80 characters long.

Table 18 SSG — Source Configuration — Type > SRT

a. Displays only when the Encryption box is selected.

b. Displays only when the Encryption box is selected.

Table 19 summarizes the options when the Type is set to WebRTC.

Table 19	SSG —	Source	Configuration —	Type > WebRTC
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Item	Parameters	Description
Stream Name	<text></text>	Assigns a unique identifier to the WebRTC stream. This name is used by the WebRTC client to identify the stream.

Item	Parameters	Description
Websocket URI	#	Specifies the Uniform Resource Identifier (URI) to use when connecting the Streaming Gateway to the remote peer
Websocket Token	#	Specifies the unique identifier that the Streaming Gateway will use for this specific WebRTC connection
Has Video	Selected	Indicates the source has video data
	Cleared	Indicates the source does not have video data
Has Audio	Selected	Indicates the source has audio data
	Cleared	Indicates the source does not have audio data

Table 19 SSG — Source Configuration — Type > WebRTC (Continued)

Destination Configuration Interface

The Destination Configuration interface is organized into three areas: Destinations table, Destination Configuration, and Audio Channel Mapping.

S	oftGear &	Streamir	ig Gateway											ROS	55
Connectio	ns Control	Source Configu	ration Destination	Configuration Configurati	on										
Name	Src Type	Туре	Status 🛱					Destination	Configuration						
Dest 1	SDI	NDI	Online 📍		Status 🧧	ок									
Dest 2			Offline												
Dest 3			Offline		Name De	351 1	туре	NUI				Video S	ource	Source 1	
Dest 4			Offline	Stream Name (SGa4bb6	15e3112) St	ream 1 - 132	Group Name	Public							
Dest 5			Offline												
				Output Video S	ettings (Output Audio								
					AV Sync										
								Audio Chan	nel Mapping						i.
				Output Chann	els i			· 🕴 16 🜩		Source	Source 1			Apply Map	- II
						1	в	16							
				Channe	11 Source	1	- Ch 1		Ch	annel 2	Source 1		Ch 2		
				Channe	13 Source	1	- Ch 3	-	Ch	annel 4	Source 1	-	Ch.4		
												-	01.0		
				Channe	a source	1	• Cris		Cn	annero	Source 1		Cnb		
				Channe	17 Source	1	- Ch 7		Ch	annel 8	Source 1	-	Ch 8		•
				Channe	9 Source	1	- Ch 9		Cha	nnel 10	Source 1		Ch 10		• •
				4											•
	_	_	Ţ												
Crea		1													
										_					
					Refresh				Reboot						Close

Figure 25 Example of the Destination Configuration Interface

Destinations Table

The Destinations table reports a list of active and inactive destinations that the user has configured. Double-clicking a row displays more information in the Destinations Configuration area.

Table 20 summarizes the read-only fields displayed in the **Destinations** table.

Table 20 SSG — Destination Configuration — Destinations Table (Sh	eet 1 of 2)
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Item	Description
Name	Reports the destination assigned as the output signal for the connection
Src Type	Reports the source signal type to this destination

Table 20 SSG — Destination Configuration — Destinations Table (Continued) (Sheet 2 of 2)

Item	Description
Туре	Reports the signal type assigned to the destination
Status	Reports the connection status of the connection: online (green), offline (gray), or warning (yellow) of an error condition
Create Destination	Select this button to define and add a new destination to the database
Delete Destination	Select this button to remove the selected destination from the database

Destination Configuration Area

The options that display in the Destination Configuration area depend on the Type setting. **Table 14** summarizes the fields that display for all Types.

Item	Parameter	Description
Status (read-only)	Online (green)	Reports the status of the connection
	Warning (yellow)	
	Error (red)	
	Offline (gray)	
Name	<text></text>	Assigns a unique identifier to the connection
Video Source	#	Provides a list of the available sources as defined using the Sources Configuration tab

Table 21 SSG — Destination Configuration > All Types

Table 22 summarizes the options when Type is set to SDI.

Table 22 SSG — Destination	Configuration —	Type > SDI
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Item	Parameters	Description
Port	#	Assigns an SDI OUT port (on the back panel) to the source.
		The list of available SDI ports depends on the Configuration > Global Settings options.
Output Audio	Selected	The output will include the audio data from the selected source. This is the default.
	Cleared	The source audio data is not included in the output signal for this connection
Audio Sample Rate Conversion	Selected	The sample rate of the audio output will be converted to 48k. Only displays when Output Audio is selected.
	Cleared	The sample rate of the audio output will not be converted. Only displays when Output Audio is selected.

Item	Parameters	Description
AV Sync	Selected	The output video and audio will be output synchronously.
		This requires the source video and audio to have accurate timestamps.
	Cleared	The output video and audio will be output asynchronously.
Output Video Settin	gs	
Output Video	Selected	The output will include the video data from the selected source. This is the default.
	Cleared	The source video data is not included in the output signal for this connection
Video Scaler ^a	Selected	The video output will be scaled
	Cleared	The video output will not be scaled
Video Format ^b	#	Selects the desired video format for the output. Note that the selected video format must match the resolution.
Aspect Ratio Control ^c	Letterbox/Pillarbox	A letterbox will be added to the output video when the output aspect ratio is less than the input aspect ratio. A pillarbox will be added to the output video when the output aspect ratio is greater than the input aspect. Only applies when the Video Scaler box is selected and the output aspect ratio of the video scaler is different from the input aspect ratio.
	Full Frame	The output video will be cut to fit in the full frame. Only applies when the Video Scaler box is selected and the output aspect ratio of the video scaler is different from the input aspect ratio.

Table 22 SSG — Destination Configuration — Type > SDI (Continued)

a. Only displays when Output Video is selected.

b. Only displays when Video Scaler is selected.c. Only displays when Video Scaler is selected.

Table 23 summarizes the options when Type is set to NDI.

ltem	Parameters	Description
Stream Name	<text></text>	Assigns a unique identifier to the NDI stream
Group Name	<text></text>	Publishes the stream in the specified group. Receiver has to join the group in order to get the stream.

Table 23	SSG —	Destination	Configuration —	Type >	NDI
----------	-------	-------------	-----------------	--------	-----

Item	Parameters	Description
Output Audio	Selected	The output will include the audio data from the selected source. This is the default.
	Cleared	The source audio data is not included in the output signal for this connection
Audio Sample Rate Conversion ^a	Off - 96k	The sample rate of the audio output will be converted to the rate selected
AV Sync	Selected	The output video and audio will be output synchronously. This requires the source video and audio to have accurate timestamps.
	Cleared	The output video and audio will be output asynchronously.
Output Video Settin	gs	
Output Video	Selected	The output will include the video data from the selected source. This is the default.
	Cleared	The source video data is not included in the output signal for this connection
Deinterlace	Selected	Enables de-interlacing using linear interpolation. Only displays when Output Video is selected, and the Video Source is set to a WebRTC source.
	Cleared	Disables de-interlacing using linear interpolation. Only displays when Output Video is selected, and the Video Source is set to a WebRTC source.
Video Scaler	Selected	The video output will be scaled. Only displays when Output Video is selected.
	Cleared	The video output will not be scaled. Only displays when Output Video is selected.
Resolution	# x #	Selects the desired resolution for the output. Only displays when Video Scaler is selected.
Frame/Field Rate	#	Selects the desired frame rate for the output. Only displays when Video Scaler is selected.

Table 23 SSG — Destination Configuration — Type > NDI (Continued)

ltem	Parameters	Description
Interlaced	Selected	The video output will be interlaced. Only displays when Video Scaler is selected, and is only selectable using the following Resolution and Frame/Field Rate format combinations: • 640x 480 and 59.94 • 768x576 and 50 • 1920x1080 and 50 • 1920x1080 and 59.94
	Cleared	The video output will be progressive. Only displays when Video Scaler is selected, and is only selectable using the following Resolution and Frame/Field Rate format combinations: • 640x 480 and 59.94 • 768x576 and 50 • 1920x1080 and 50 • 1920x1080 and 59.94
Aspect Ratio Control	Letterbox/Pillarbox	A letterbox will be added to the output video when the output aspect ratio is less than the input aspect ratio. A pillarbox will be added to the output video when the output aspect ratio is greater than the input aspect. Only applies when the video scaler is selected and the output aspect ratio of the video scaler is different from the input aspect ratio.
	Full Frame	The output video will be cut to fit in the full frame. Only applies when the video scaler is selected and the output aspect ratio of the video scaler is different from the input aspect ratio.

Table 23 SSG — Destination Configuration — Type > NDI (Continued)

a. Only displays when Output Audio is selected.

Table 24 summarizes the options when Type is set to CDI.

			51
Item	Parameters		Description
IP	#	Identifies the I	P address of the receiver
Port	#	Assigns the ou	tput port to the destination

Table 24 SSG — Destination Configuration — Type > CDI

ltem	Parameters	Description
Output Audio	Selected	The output will include the audio data from the selected source. This is the default.
	Cleared	The source audio data is not included in the output signal for this connection
Audio Sample Rate Converter	Off - 96k	The sample rate of the audio output will be converted to the rate selected. Only displays when Output Audio is selected.
Output ANC	Selected	The output will include ancillary data from the selected source. This is the default.
	Cleared	The source ancillary data is not included in the output signal for this connection
Output Video Settin	gs	
Output Video	Selected	The output will include the video data from the selected source. This is the default.
	Cleared	The source video data is not included in the output signal for this connection
Bit-Depth	8 Bit	The bit depth of the output will be 8 bit
	10 Bit	The bit depth of the output will be 10 bit
Video Scaler	Selected	The video output will be scaled. Only displays when Output Video is selected.
	Cleared	The video output will not be scaled. Only displays when Output Video is selected.
Resolution	# × #	Selects the desired resolution for the output. Only displays when Video Scaler is selected.
Frame/Field Rate	#	Selects the desired frame rate for the output. Only applies when Video Scaler is selected.
Interlaced	Selected	 The video output will be interlaced. Only displays when Video Scaler is selected, and is only selectable using the following Resolution and Frame/Field Rate format combinations: 640x480 and 59.94 768x576 and 50 1920x1080 and 50.94

Table 24 SSG — Destination Configuration — Type > CDI (Continued)

ltem	Parameters	Description
Interlaced	Cleared	The video output will be progressive. Only displays when Video Scaler is selected, and is only selectable using the following Resolution and Frame/Field Rate format combinations: • 640x 480 and 59.94 • 768x576 and 50 • 1920x1080 and 50 • 1920x1080 and 59.94
Aspect Ratio Control	Letterbox/Pillarbox	A letterbox will be added to the output video when the output aspect ratio is less than the input aspect ratio. A pillarbox will be added to the output video when the output aspect ratio is greater than the input aspect. Only applies when the video scaler is selected and the output aspect ratio of the video scaler is different from the input aspect ratio.
	Full Frame	The output video will be cut to fit in the full frame. Only applies when the video scaler is selected and the output aspect ratio of the video scaler is different from the input aspect ratio.

Table 24 SSG — Destination Configuration — Type > CDI (Continued)

Table 25 summarizes the options when **Type** is set to **SRT**.

Table 25 SSG — Destination	Configuration — Type > SRT
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Item	Parameters	Description
Mode	Listener	Indicates the mode for the source is set to Listener.
		When in Listener mode, the Streaming Gateway is listening on a port to establish a connection.
	Caller	Indicates the mode for the source is set to Caller.
		When in Caller mode, the Streaming Gateway sends out a message to the IP address and port to connect.
Bandwidth Mode	Hardware Limit	The Streaming Gateway applies the ethernet port bandwidth as the limit
	Input Rate Limit	The Input Rate and Bandwidth Overhead fields are now editable
	Manual Limit	The Bandwidth Limit field is now editable.

ltem	Parameters	Description				
Bandwidth Limit (kbps)	#	This field is only editable when the Bandwidth Mode is set to Manual Limit. Defines the maximum sender bandwidth.				
Bandwidth Overhead (%)	#	Defines the recovery bandwidth overhead percentage. The default is 25%.				
		Only applicable when the Bandwidth Mode is set to Input Rate Limit.				
Local Port	#	Available in Listener Mode. Specifies the local port to be used.				
Target URL (Host:Port)	<text>, #</text>	Available in Caller Mode. Specifies the target URL and port to be used.				
Stream ID	<text></text>	Available in Caller Mode. Defines the Stream ID.				
Input Rate (kbps)	#	Defines the anticipated bitrate of your live stream. Only applicable when the Bandwidth Mode is set to Input Rate Limit.				
		used will be estimated from the rate of the input during transmission.				
Video Stream Settings						
Video Source	#	Provides a list of the available sources as defined using the Sources Configuration tab				
PID Option	Auto	The PID value will be automatically set to the default one				
	Custom	Allows you to customize the PID value				
PID Value	#	Defines the PID value when the PID Option is set to Custom				
H264 Encoder						
Encoding Profile	Main	Defines that the H264 profile used will be Main				
	High 4:2:2	Defines that the H264 profile used will be High 4:2:2				
Video Bit Rate (kbps)	CBR, #	Defines the video bitrate and its mode, CBR. CBR refers to constant bitrate, meaning the bitrate will be kept the same.				
	VBR, #	Defines the video bitrate and its mode, VBR. VBR refers to variable bitrate, meaning the bitrate will vary. The value is the maxiumum bitrate allowed.				
Video Scaler						
Video Scaler	Selected	The video output will be scaled.				
	Cleared	The video output will not be scaled.				

ltem	Parameters	Description
Resolution	# x #	Selects the desired resolution for the output. Only displays when Video Scaler is selected.
Frame/Field Rate	#	Selects the desired frame rate for the output. Only displays when Video Scaler is selected.
Interlaced	Selected	The video output will be interlaced. Only displays when Video Scaler is selected, and is only selectable using the following Resolution and Frame/Field Rate format combinations: • 640x 480 and 59.94 • 768x576 and 50 • 1920x1080 and 50 • 1920x1080 and 59.94
	Cleared	The video output will be progressive. Only displays when Video Scaler is selected, and is only selectable using the following Resolution and Frame/Field Rate format combinations: • 640x 480 and 59.94 • 768x576 and 50 • 1920x1080 and 50 • 1920x1080 and 59.94
Aspect Ratio Control	Letterbox/Pillarbox	A letterbox will be added to the output video when the output aspect ratio is less than the input aspect ratio. A pillarbox will be added to the output video when the output aspect ratio is greater than the input aspect. Only applies when the video scaler is selected and the output aspect ratio of the video scaler is different from the input aspect ratio.
	Full Frame	The output video will be cut to fit in the full frame. Only applies when the video scaler is selected and the output aspect ratio of the video scaler is different from the input aspect ratio.
Encrypt Stream		
Encrypt	Selected	Enables data encryption in transit using AES
	Cleared	Disables data encryption

Table 25 SSG —	Destination	Configuration —	Type >	SRT (Continued)
			<i>J i</i> · · ·	

Item	Parameters	Description		
Key Length	Default	Defaults key length to 128-bit to encrypt the data		
	AES-128	Specifies that 128-bit key length is used to encrypt the data		
	AES-192	Specifies that 192-bit key length is used to encrypt the data		
	AES-256	Specifies that 256-bit key length is used to encrypt the data		
Passphrase	<text></text>	Determines the passphrase that must be matching for both peers, or the connection will be rejected by the receiver and fail.		
		Passphrase must be 10-80 characters long.		
Audio Stream Settin	igs			
PID Option	Auto	The PID value will be automatically set to the default one		
	Custom	Allows you to customize the PID value		
PID Value	#	Defines the PID value when the PID Option is set to Custom		
AAC Encoder Bit Rate (kbps)	8 - 512	Defines the audio bitrate		
Audio Sample Rate Converter	Off - 96k	The sample rate of the audio output will be converted to the rate selected		
Output Channels	0-16	Allows you to automatically map the audio stream to multiple audio channels		
Source	<text></text>	The source to use for the audio map		
Apply Map	Apply the configured number of output channels and source to the audio channel map			

Table 25 SSG — Destination Configuration — Type > SRT (Continued)

Table 26 summarizes the options when the Type is set to WebRTC.

Table 26 SSG —	Destination	Configuration —	Type > WebRTC
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Item	Parameters	Description
Stream Name	<text></text>	Assigns a unique identifier to the WebRTC name that is used in DashBoard to label the stream
Websocket URI	#	Specifies the Uniform Resource Identifier (URI) to use when connecting the Streaming Gateway to the downstream remote peer
Websocket Token	#	Specifies the unique identifier that the Streaming Gateway will use for this output WebRTC connection

Item	Parameters	Description
Output Audio	Selected	The output will include the audio data from the selected source
	Cleared	The source audio data is not included in the output signal for this connection
Output Video Settin	gs	
Output Video	Selected	The output will include the video data from the selected source
	Cleared	The source video data is not included in the output signal for this connection
Quality	Very Low	Indicates the output quality level. The
	Low	default is High.
	Medium	
	High	
	Very High	
Drop Frames	Selected	The Streaming Gateway will automatically drop frames when it detects a streaming bit rate higher than 2.5Mbps.
	Cleared	The Streaming Gateway will not drop frames even if the bit rate is more than 2.5Mbps. This is the default.

Table 26 SSG — Destination Configuration — Type > WebRTC (Continued)

Audio Channel Mapping

Table 27 summarizes the options displayed in the Audio Channel Mapping area.

Table 27	SSG —	Destination	Configuration -	– Audio	Channel	Mapping

Item	Parameters	Description			
Output Channels	Slider	Use the slider to configure output channels. You can configure up to 16 output audio channels at once			
Source	Menu	Set the source audio channel			
Channel #	The output channels.				
	For CDI and WebRTC there are 2 channels (Ch 1-2).				
	For SDI, NDI, and SRT there are 16 channels (Ch 1-16).				
Source Name	<text></text>	Specifies the source name from the drop-down menu			
Input Channel	#	Specifies the channel of the source			

Configuration Interface

The Configuration interface displays two sub-tabs on the bottom toolbar: Global Settings and About. Each sub-tab is described in this section.

★ You may need to scroll down the window to display these sub-tabs.

softGear	r Streaming Gatev	way	_						ROSS
Connections Control	Source Configuration Des	tination Configuration	uration						
BNCs									
			ø		ø	۲	۲	ø	
		2	3	4	5	6	7	8	
	Input	Output	Input	Output	Input	Output	Input	Output	
SDI Reference 525/5									
NDI Global Source Di	iscovery								
Discovery Group(s)	Public								
External IP/Hostname									
Discovery & Registration	n Method mDNS	*							
Discovery Server IP/Hos	stname								
Status	ок								
STUN Server Details									
Type stu									
URL stu	un.l.google.com	Port 19302							
Username		Password							
Status	ок								
Giabal Settings About									
			Refresh						

Figure 26 Example of the Configuration Interface

Global Settings Tab

The Global Settings tab enables you to assign a function to the physical connections of the Streaming Gateway chassis. The map represents the back panel ports, enabling you to quickly select the physical ports to configure.

 Table 28 summarizes the options displayed in the Global Settings tab.

Item	Parameters	Description
BNCs		
BNC # ^a	Input	The physical DIN port is an SDI input. SDI 1, 3, 5, and 7 are assigned as inputs by default.
	Output	The physical DIN port is an SDI output. SDI 2, 4, 6, and 8 are assigned as outputs by default.
	N/A	The physical port is disabled. Displayed when operating in the cloud.
SDI Reference (read-only)	#	Reports the video format detected on the REF IN port. Note that if it returns <i>Unknown</i> , there is an issue with the reference.
NDI Global Source D	iscovery	
Discovery Group(s)	<text></text>	Identifies the NDI Discovery Group(s) used. This field is set to Public by default, but groups created by users can also be used. Multiple Discovery Groups can be used by separating them with a comma (e.g. Public,Group1,Group2)

Table 28 SS	G — Configurat	tion — Global	Settings
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ltem	Parameters	Description
External IP/ Hostname	#	Identifies the IP address or host name used to discover sources when the SSG is operating in the cloud. Multiple IP addresses can be used by separating them with a comma (e.g. 127.0.0.1,10.0.0.1,10.0.0.2)
Discovery & Registration Method	mDNS	The Streaming Gateway uses mDNS to register sources with other NDI devices on the network. This method does not work in cloud instances.
	Discovery Server	The NDI Discovery Server is a tool that allows NDI devices to perform discovery. The user is required to set up the NDI discovery server independently. For instructions about setting up the NDI discovery server, refer to the NDI SDK documentation.
Discovery Server IP/ Hostname	#	This field identifies the IP address or host name for the NDI discovery method. After inputting the server IP address or host name, the user must reboot their device in order to connect to the server.
Status (read-only)	ОК	There is no Discovery Server connected
		NDI receiver and sender successfully connected to the Discovery server
	Apply Changes	There are unsaved changes. Click Apply to apply the changes.
Status (read-only)	Internal error reaching discovery server	NDI receiver had an SSG internal error on attempting to reach the NDI Discovery Server
	Lookup failure on discovery server name	NDI receiver had a DNS lookup failure for NDI Discovery Server
	Discovery server not reachable	NDI receiver cannot reach the Discovery Server
	Failure to query discovery server	NDI receiver had an internal error querying the Discover Server
	No response from discovery server	NDI receiver connected to the Discovery Server but received no response
	Unexpected response from discovery server	NDI receiver connected to the Discover Server but received an unexpected response
STUN Server Details		
Туре	<text></text>	Allow the user to manually configure the STUN/TURN server details information for WebRTC streaming types in DashBoard mode

Table 28 SSG — Configuration — Global Settings

Item	Parameters	Description
URL	<text></text>	The URL used to access the STUN server
Port	#	The port number used to access the STUN server
Username	<text></text>	The username used to access the STUN server
Password	<text></text>	The password used to access the STUN server

Table 28 SSG — Configuration — Global Settings

a. The ports are fixed as follows: Port 1, 3, 5, and 7 are SDI inputs, Ports 2, 4, 6, and 8 are SDI outputs.

About Tab

Table 29 summarizes the read-only information displayed in the **About** tab in the **SSG** sub-node.

Item	Parameters	Description
Product Information	า	
SDK Version	#	Reports information on the SDI IO service running on the Streaming Gateway
WebRTC SDK Version	#	Reports information on the WebRTC service running on the Streaming Gateway
Model	#	Reports the information on the hardware
Hostname	#	Uniquely identifies the Streaming Gateway system

Table 29 SSG — Configuration — About

Technical Specifications

This chapter provides technical information for the Streaming Gateway.

★ Specifications are subject to change without notice.

Reference Input Specifications

Table 30 Technical Specifications — Reference Input

ltem	Specifications
Connector Type	DIN

SDI Specifications

Table 31 Technical Specifications - SDI

ltem	Specifications
Number of Inputs	4
Number of Outputs	4
Connector Type	DIN

1G Specifications

★ The Gb2, NET1, and NET2 tabs are not implemented.

Table 32 Technical Specifications — Gb1

Item	Specifications
Standards Accommodated	1000 BASE T
Connector Type	RJ45

USB Port Specifications

Table 33 Technical Specifications – USB Port

ltem	Specifications
Connector Type	USB3.0

Environment

Table 34 Technical Specifications — Environment

Item	Specifications
Maximum Ambient Temperature	40°C (104°F)

Power

Table 35 Technical Specifications — Power

Item	Specifications
Power Supply	350W per power supply
Maximum Power Consumption	700W

Service Information

Routine maintenance to this Ross product is not required. In the event of problems with your product, the following basic troubleshooting checklist may help identify the source of the problem. If the Streaming Gateway still does not appear to be working properly after checking all possible causes, please contact the Technical Support department at the numbers listed in "**Contacting Ross Video Technical Support**".

- 1. **Visual Review** Performing a quick visual check may reveal many problems, such as connectors not properly seated or loose cables. Check the Streaming Gateway, and any associated peripheral equipment for signs of trouble.
- 2. **Power Check** Inspect the power indicator LED on the chassis for the presence of power. If the power LED is not illuminated, verify that the power cable is connected to a power source and that power is available at the power main. If the power LED is still not illuminated, replace the power supply with one that is verified to work.
- 3. **Input Signal Status** Verify that source equipment is operating correctly and that a valid signal is being supplied.
- 4. **Output Signal Path** Verify that destination equipment is operating correctly and receiving a valid signal.
- 5. **Unit Exchange** Exchanging a suspect unit with a unit that is known to be working correctly is an efficient method for localizing problems to individual units.

Exporting a Log File

The Streaming Gateway provides the ability to capture a log file. Entries in this file may relate to normal expected functionality or to systemic errors. This information might be useful in monitoring and diagnosing a system problem, or when troubleshooting with Ross Technical Support.

To export a log file

- 1. Display the System sub-node as outlined in "To display the System sub-node in DashBoard".
- 2. Select the **About** tab.
- 3. Locate the **Logs** area of the **About** tab.
- 4. Click **Download**.

The **Download Logs** dialog box appears.

- 5. Click Browse....
- 6. Choose the location you want to save the logs to.
- 7. Enter a **File Name** for the logs to be saved as.
- 8. Click **Open**.
- 9. Click **Download**.

The logs will begin to download to the selected location.

★ If you try to export logs to the same location as a previously exported and currently opened log archive, your download will fail. To avoid this, ensure that no logs are open when exporting new ones.

Warranty and Repair Policy

The Streaming Gateway is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of THREE (3) years from the date of shipment from our factory. In the event that your Streaming Gateway proves to be defective in any way during this warranty period, Ross Video Limited reserves the right to repair or replace this piece of equipment with a unit of equal or superior performance characteristics.

Should you find that this Streaming Gateway has failed after your warranty period has expired, we will repair your defective product should suitable replacement components be available. You, the owner, will bear any labor and/or part costs incurred in the repair or refurbishment of said equipment beyond the THREE (3) year warranty period.

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This User Manual provides all pertinent information for the safe installation and operation of your Streaming Gateway. Ross Video policy dictates that all repairs to the Streaming Gateway are to be conducted only by an authorized Ross Video Limited factory representative. Therefore, any unauthorized attempt to repair this product, by anyone other than an authorized Ross Video Limited factory representative, will automatically void the warranty. Please contact Ross Video Technical Support for more information.

In Case of Problems

Should any problem arise with your Streaming Gateway, please contact the Ross Video Technical Support Department. (Contact information is supplied at the end of this publication.)

A Return Material Authorization number (RMA) will be issued to you, as well as specific shipping instructions, should you wish our factory to repair your Streaming Gateway. If required, a temporary replacement Streaming Gateway will be made available at a nominal charge. Any shipping costs incurred will be the responsibility of you, the customer. All products shipped to you from Ross Video Limited will be shipped collect.

The Ross Video Technical Support Department will continue to provide advice on any product manufactured by Ross Video Limited, beyond the warranty period without charge, for the life of the equipment.

Glossary

The following terms are used throughout this guide:

AES — refers to Advanced Encryption Standard.

Amazon EC2 — refers to Amazon Elastic Compute Cloud.

Audio SRC — refers to Audio Sample Rate Converter.

AWS — refers to Amazon Web Services.

DashBoard — refers to the DashBoard Control System.

Destination — refers to the output.

Device View — refers to the area located to the far right of the DashBoard window. This area typically displays tabs that include menus and options for control and monitoring your devices.

DHCP — refers to Dynamic Host Configuration Protocol.

EFA — refers to Elastic Fabric Adapter.

NTP — refers to Network Time Protocol.

Operator and **User** — refer to the person who uses the Streaming Gateway.

RPM — refers to the Ross Platform Manager.

Source — refers to the input.

Tree View — refers to the area located to the far left of the DashBoard window. This area displays devices in a tree structure.

URI — refers to Uniform Resource Identifier.

WebRTC — refers to Web Real-Time Communication.

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dbus

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dhkx

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IXWebSocket

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libsamplerate

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mongo-driver

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