GATOR-KEY User Guide

Thank You for Choosing Ross

You've made a great choice. We expect you will be very happy with your purchase of Ross Technology.

Our mission is to:

1. Provide a Superior Customer Experience
    - offer the best product quality and support
2. Make Cool Practical Technology
    - develop great products that customers love

Ross has become well known for the Ross Video Code of Ethics. It guides our interactions and empowers our employees. I hope you enjoy reading it below.

If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at *solutions@rossvideo.com*.

David Ross
CEO, Ross Video
dross@rossvideo.com

Ross Video Code of Ethics

Any company is the sum total of the people that make things happen. At Ross, our employees are a special group. Our employees truly care about doing a great job and delivering a high quality customer experience every day. This code of ethics hangs on the wall of all Ross Video locations to guide our behavior:

1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
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.)*

GATOR-KEY · User Guide

- Ross Part Number: **8922DR-104-02**
- Release Date: August 21, 2018.

The information contained in this Guide is subject to change without notice or obligation.

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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.

Notice

The material in this manual is furnished for informational use only. It is subject to change without notice and should not be construed as commitment by Ross Video Limited. Ross Video Limited assumes no responsibility or liability for errors or inaccuracies that may appear in this manual.

Safety Notices

Refer to the "**Important Regulatory and Safety Notices**" document that accompanied your product.

Statement of Compliance

This product has been determined to be compliant with the applicable standards, regulations, and directives for the countries where the product is marketed.

Compliance documentation, such as certification or Declaration of Compliance for the product is available upon request by contacting techsupport@rossvideo.com. Please include the product; model number identifiers and serial number and country that compliance information is needed in request.

EMC Notices

US FCC Part 15

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.

Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Ltd. could void the user's authority to operate this equipment.*

Canada

This Class "A" digital apparatus complies with Canadian ICES-003 and part 15 of the FCC Rules.

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

European Union

This equipment is in compliance with the essential requirements and other relevant provisions established under regulation (EC) No 765/2008 and Decision No 768/2008/EC referred to as the "New Legislative Framework".

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.

Korea

This equipment is in compliance with the provisions established under the Radio Waves Act.

Class A equipment (Broadcasting and communications service for business use)

This device is a business-use (Class A) EMC-compliant device. The seller and user are advised to be aware of this fact. This device is intended for use in areas outside home.

Type of Equipment	User's Guide
A급 기기 (업무용 방송통신기자재)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.
Class A Equipment (Industrial Broadcasting & Communication Equipment)	This equipment is **Industrial (Class A) electromagnetic wave suitability equipment** and seller or user should take notice of it, and this equipment is to be used in the places except for home.

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 openGear 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 openGear products are covered by a generous 5-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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Contents

Introduction

This guide covers the installation, configuration, and use of the GATOR-KEY. The following chapters are included:

- "**Introduction**" summarizes the guide and provides important terms, and conventions.
- "**Before You Begin**" provides general information to keep in mind before installing and configuring your GATOR-KEY.
- "**Hardware Overview**" provides a basic introduction to the GATOR-KEY hardware features including the cabling and monitoring features of the rear module.
- "**Physical Installation**" provides instructions for the physical installation of the GATOR-KEY and its rear module into an openGear frame.
- "**Cabling**" provides an overview of connecting input and output devices to the rear module of the GATOR-KEY.
- "**Getting Started**" outlines how to display the GATOR-KEY interfaces in DashBoard.
- "**Configuring the Ethernet Settings**" provides instructions for configuring the GATOR-KEY network settings.
- "**Reference Setup**" provides instructions for specifying the reference source for the GATOR-KEY.
- "**Configuring the Outputs**" provides instructions for setting the card output video format.
- "**Configuring the GPI/Tallies**" outlines how to configure each GPI/Tally independently on the GATOR-KEY.
- "**Keying**" summarizes the GATOR-KEY keying features.
- "**Mattes**" outlines how to set up a matte color and assign a matte generator to an external key.
- "**Transitions**" outlines how to specify the post transition behavior, configure the TAKE button, set a transition rate, and perform basic transitions.
- "**Media File Management**" outlines how to select and configure the two Logo channels for the GATOR-KEY.
- "**Using RossTalk**" outlines how to establish a connection point between GATOR-KEY and an external device.
- "**Upgrading the Software**" outlines how to upgrade the GATOR-KEY via DashBoard.
- "**DashBoard Interface Overview**" summarizes the menus and parameters of the GATOR-KEY tabs in DashBoard.
- "**Technical Specifications**" provides the specifications for the GATOR-KEY.
- "**Service Information**" provides information on the warranty and repair policy for your GATOR-KEY.
- "**Software Licenses**" provides third-party software license information for your GATOR-KEY.
- "**Glossary**"provides a list of terms used throughout this guide.

Related Publications

It is recommended to consult the following Ross documentation before installing and configuring your GATOR-KEY:

- ***DashBoard User Manual***, Ross Part Number: 8351DR-004
- ***MFC-OG3-N User Manual***, Ross Part Number: 8322DR-004
- ***OG3-FR Series User Manual***, Ross Part Number: 8322DR-005
- ***OGX-FR Series User Manual***, Ross Part Number: 8322DR-204

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 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**: techsupport@rossvideo.com
- **Website**: http://www.rossvideo.com

Before You Begin

If you have questions pertaining to the operation of GATOR-KEY, contact us at the numbers listed in the section "**Contacting Technical Support**". Our technical staff is always available for consultation, training, or service.

Overview

The GATOR-KEY is a high quality UHD/HD-SDI video keyer with five internal static/animation playout channels and one external key/alpha channel. An excellent device for keying external devices such as character generators, and graphic systems into a program feed and/or keying with four internal logo channels.

The GATOR-KEY offers full key control with shaped and unshaped keying, self key or auto key, and gain and clip control. The Background A and B inputs allows for background dissolves and V-Fades behind the external key source. All four inputs have line synchronization, locked to an external analog reference, to ease system timing requirements. Four independent outputs for Program, Preview, and Clean Feed offers Fade to Black capability.

The GATOR-KEY processes embedded audio on the Background A and Background B inputs. Any audio groups present on the inputs are carried through to the outputs. During transitions, the audio ramps smoothly between A and B sources, matching the video transition.

Functional Block Diagram

Figure 2.1 provides a general overview of the GATOR-KEY workflow.

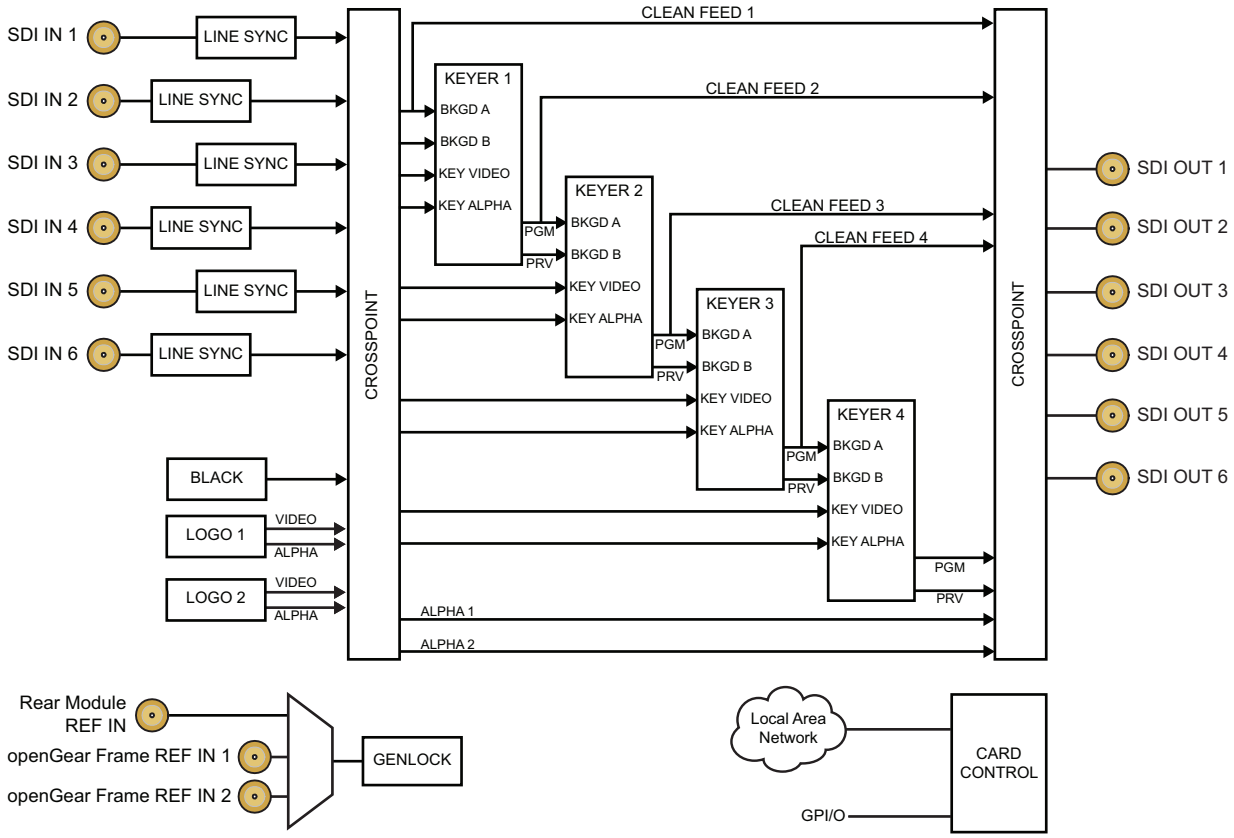


Figure 2.1 Functional Block Diagram

Features

Some features of the GATOR-KEY include:

- Support for SMPTE 274M, 296M, 170M, and ITU-R BT.470-6 standards
- 2 External Key + Alpha can come from any SDI input (user configurable) or any of the 2 logo channels
- Keys can be transitioned independently
- Support for cross fade, cut, v fade, fade/cut, and cut/fade transitions
- Supports 2 internal logo/animation playout channels
- Program/Preset background input cay be any SDI input (user configurable)
- Supports RossTalk automation requests
- Fully compliant with openGear specifications
- 5 year transferable warranty

User Interfaces

Control is available via the DashBoard client software, as well as through third-party protocols. Optional SNMP monitoring is also available.

DashBoard Interfaces

The DashBoard client software enables you to monitor and control openGear frames and cards from a computer. DashBoard communicates with cards in the openGear frames through a Network Controller Card installed in the frame. This controller card is required in order to use DashBoard to control and monitor the GATOR-KEY.

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

For More Information on...

- displaying the DashBoard interfaces, refer to the chapter "**Getting Started**" on page 27.

SNMP Monitoring

The Network Controller Card in the openGear frame provides optional support for remote monitoring of your card using Simple Network Management Protocol (SNMP), which is compatible with many third-party monitoring tools.

For More Information on...

- the available SNMP monitoring features, refer to the Management Information Base (MIB) file for your GATOR-KEY.
- SNMP monitoring features in the openGear frame, refer to the ***MFC-OG3 Series User Manual***.

Third-Party Protocols

The GATOR-KEY supports a communication link between a computer based editing or automation system and the GATOR-KEY.

For More Information on...

- setting up an automation system with the GATOR-KEY, refer to the chapter "**Using RossTalk**" on page 53.

Hardware Overview

This chapter presents information on the GATOR-KEY card-edge controls and features.

Overview

The GATOR-KEY is an openGear modular system composed of two sub-systems.

- a main board which connects to a rear module and the openGear frame midplane
- a rear module that provides physical connectors

Up to five GATOR-KEY modules may be installed into an openGear frame.

Main PCB Overview

The main PCB is a typical openGear card. An ejector on one end secures the module to the slot inside the openGear frame, and the other end inserts into a connector on the back of the rear module.

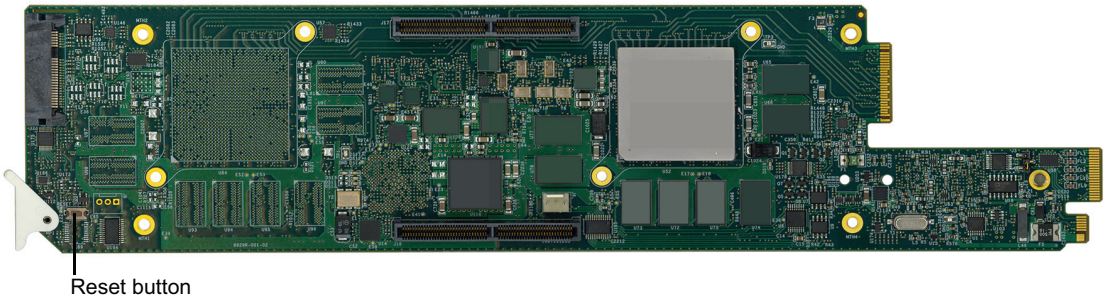


Figure 3.1 GATOR-KEY — Base Card Components

Reset Button

Pressing this button resets the microprocessor and re-initializes the card. This is a hard reset of the card. This action should only be before as advised by Ross Video Technical Support.

Back Components

The main PCB also includes a Micro SD card slot. This slot is located on the backside of the main PCB and just above the ejector. (**Figure 3.2**)

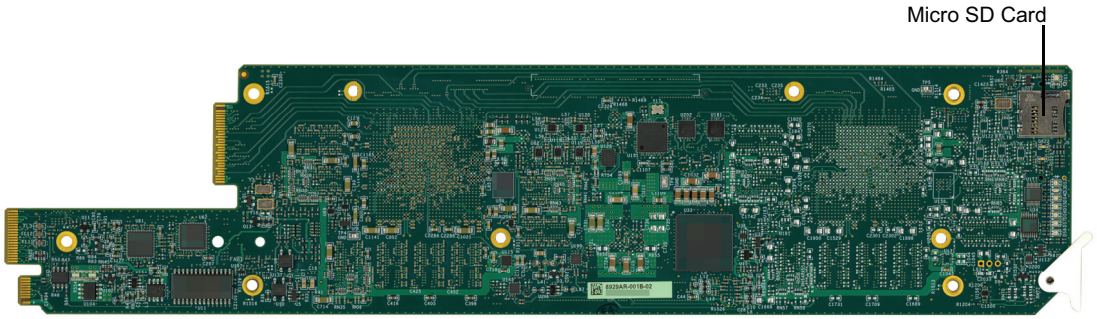


Figure 3.2 GATOR-KEY — SD Card Location

✶ It is recommended to ensure the SD card is properly seated in its slot on the PCB before installing the GATOR-KEY in the frame.

GATOR-KEY Rear Module Overview

This section provides an overview of the connections and cabling designations for the GATOR-KEY rear modules.

8322AR-317 Rear Module

> **Notice** — *Installing the 8322AR-317 in a frame other than the OG3-FR or OGX-FR could damage the card, the rear module, or both.*

The following connections are available when the GATOR-KEY is installed with the 8322AR-317 rear module:

- 6 SDI inputs on HD-BNCs
- 6 SDI outputs on HD-BNCs
- 1 independent reference input signal
- 4 GPIO connections

Each rear module occupies four slots in the openGear frame and accommodates one GATOR-KEY card. **Figure 3.3** indicates the implemented cabling designations.

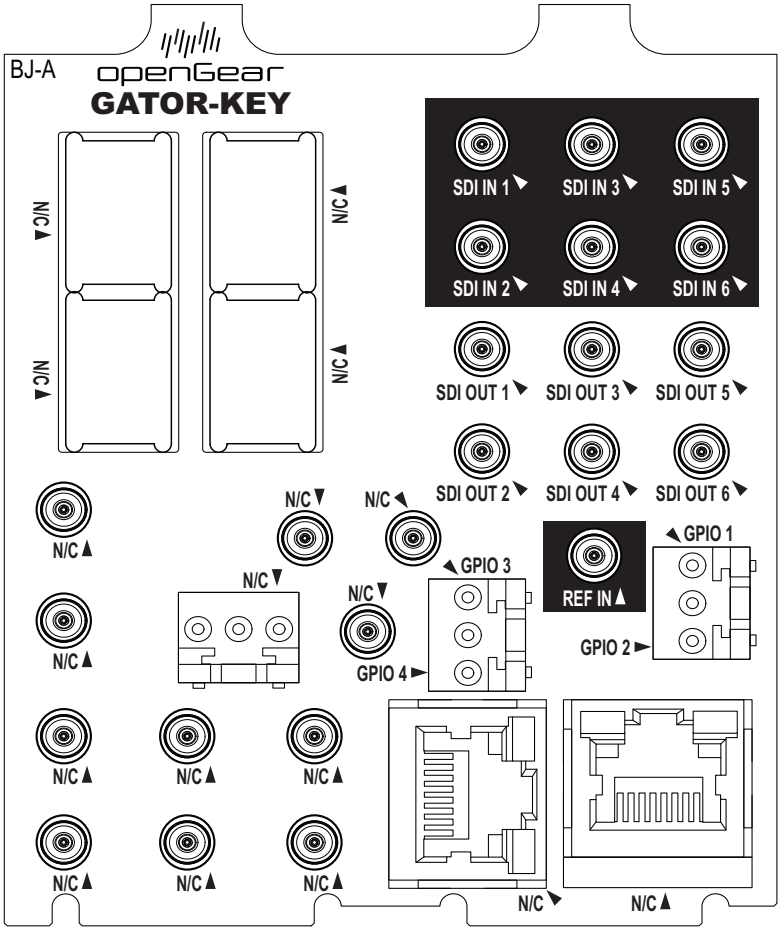


Figure 3.3 Cabling Designations — 8322AR-317 Rear Module

8323AR-325 Rear Module

Notice — *Installing the 8323AR-325 in a frame other than the OGX-FR could damage the card, the rear module, or both.*

The following connections are available when the GATOR-KEY is installed with the 8323AR-325 rear module:

- 6 SDI inputs on HD-BNCs
- 6 SDI outputs on HD-BNCs
- 1 independent reference input signal
- 4 GPIO connections

Each rear module occupies two slots in the openGear frame and accommodates one GATOR-KEY card. **Figure 3.3** indicates the implemented cabling designations.

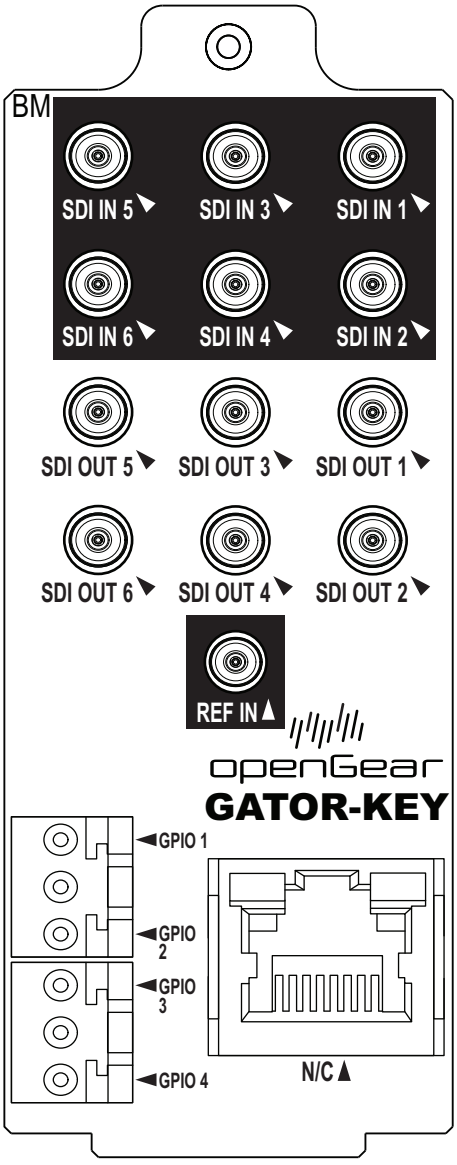


Figure 3.4 Cabling Designations — 8323AR-325 Rear Module

For More Information on...

- the rear module, refer to the section "**Installing the Rear Module into the openGear Frame**" on page 20.
- cabling the inputs and outputs, refer to the chapter "**Cabling**" on page 23.

Physical Installation

Installing an GATOR-KEY card into the openGear frame requires you to remove the blank plates in the designation frame slots, install the required rear module into the frame rear panel, and then install the GATOR-KEY card into the required frame slot.

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

For More Information on...

- the technical specifications for the GATOR-KEY, refer to the chapter "**Technical Specifications**" on page 73.

Before You Begin

These installation guidelines assume the following:

- Ensure the openGear frame is properly installed. Refer to the ***User Guide*** for your frame.
- An MFC-OG3-N Network Controller Card installed in your openGear frame.
- A valid IP addresses is available for the GATOR-KEY.
- If the rear module is already installed in the openGear frame, proceed to the section "**Installing the GATOR-KEY Card into a Frame**" on page 20

Static Discharge

Throughout this chapter, please heed the following cautionary note:

ESD Susceptibility — *Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in high static environments such as carpeted areas and when synthetic fiber clothing is worn. Always exercise proper grounding precautions when working on circuit boards and related equipment.*

Removing the Blank Plates from the Rear Panel

When a frame slot is not populated with an openGear card, a blank plate must be installed to ensure proper frame cooling and ventilation.

Notice — *Installing the 8323AR-325 in a frame other than the OGX-FR could damage the card, the rear module, or both.*

To remove a blank plate from the openGear frame

1. Locate the slots in the openGear frame you wish to install the GATOR-KEY into.
2. If you are using an 8322AR-317 rear module, it is recommended to use the following slot combinations:
   - Slots 1, 2, 3, 4
   - Slots 5, 6, 7, 8
   - Slots 9, 10, 11, 12
   - Slots 13, 14, 15, 16
   - Slots 17, 18, 19, 20
3. Use a Phillips screwdriver to unfasten each blank plate from the openGear frame backplane.
4. Remove each blank plate from the chassis and set aside.

★ You must remove two Blank Plates (covering four slots) in the openGear frame.

Installing the Rear Module into the openGear Frame

If the rear module is already installed in the openGear frame, proceed to the section "**Installing the GATOR-KEY Card into a Frame**" on page 20.

To install a rear module into the openGear frame

1. For each retaining screw on the rear module, push the o-ring to the end of the screw (but not off the screw). This will help to align the rear module to the frame backplane in step 3.

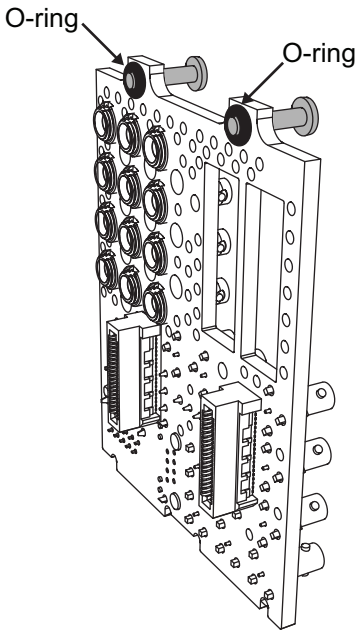


Figure 4.1 Location of the O-ring on the 8322AR-317 Rear Module

2. Seat the bottom of the rear module in the seating slots at the base of the frame's backplane.
3. Align the top holes of the rear module with the screw holes on the top-edge of the frame backplane.
4. Using a Phillips screwdriver and the provided screw, fasten the rear module to the backplane.

✶ Do not fully tighten the screws until after installing the card and you have verified that the GATOR-KEY card aligns with the rear module.

Installing the GATOR-KEY Card into a Frame

The slot the GATOR-KEY installs into depends on the slot combination you installed the rear module in. This allows adequate spacing to avoid damaging the card, the cards installed in the neighboring slots, or both.

Refer to **Table 4.1** for valid slot combinations when using the 8322AR-317 rear module.

Table 4.1 Card Slot Combinations — 8322AR-317

Rear Module is Installed in	Card Installs into Slot
Slots 1, 2, 3, 4	2
Slots 5, 6, 7, 8	6
Slots 9, 10, 11, 12	10
Slots 13, 14, 15, 16	14
Slots 17, 18, 19, 20	18

Refer to **Table 4.2** for valid slot combinations when using the 8323AR-325 rear module.

Table 4.2 Card Slot Combinations — 8323AR-325

Rear Module is Installed in	Card Installs into Slot
Slots 1, 2	1
Slots 3, 4	3
Slots 5, 6	5
Slots 7, 8	7
Slots 9, 10	9
Slots 11, 12	11
Slots 13, 14	13
Slots 15, 16	15
Slots 17, 18	17
Slots 19, 20	19

To install the GATOR-KEY into the openGear frame

1. Locate the slot the GATOR-KEY card will slide into.
2. Verify that the GATOR-KEY card aligns with the rear module.
3. Using a Phillips screwdriver fasten the rear module to the backplane using the provided screws.

✶ Do not over tighten the screws.

4. Hold the card by the edges and carefully align the card edges with the slot rails in the frame.
5. Fully insert the card into the frame until the card is properly seated in the rear module.

Cabling

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

✶ While the examples in this chapter depict the 8322AR-317 rear module, the information is also applicable to the 8323AR-325.

Cabling the Ethernet Port on the Frame

The GATOR-KEY is connected to your network via the Network Controller Card in the openGear frame. This enables the GATOR-KEY to interface with other cards in the frame, and the computer running the DashBoard client. After a physical connection is established, DashBoard is used to configure the network settings for the GATOR-KEY.

✶ You must provide an Ethernet connection to the openGear frame as outlined in its ***User Guide***.

Before You Begin

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 GATOR-KEY.

For More Information on...

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

✶ If difficulties or problems are experienced when connecting the GATOR-KEY to a network hub, contact your network administrator.

Cabling for the Reference Input for the GATOR-KEY

The openGear frame provides two reference input connections that the GATOR-KEY can use as a reference source. Refer to the ***User Guide*** for your frame to learn more about cabling these ports.

The GATOR-KEY rear module also includes a **REF IN** HD-BNC that can assigned as a local reference input.

For More Information on...

- on specifying the analog reference source for your card, refer to the chapter "**Reference Setup**" on page 33.

To connect a reference source to the GATOR-KEY rear module

1. Connect one end of a Belden cable to the **REF IN** HD-BNC on the GATOR-KEY rear module.
2. Connect the other end of the same Belden cable to the applicable output port on the external reference source device.

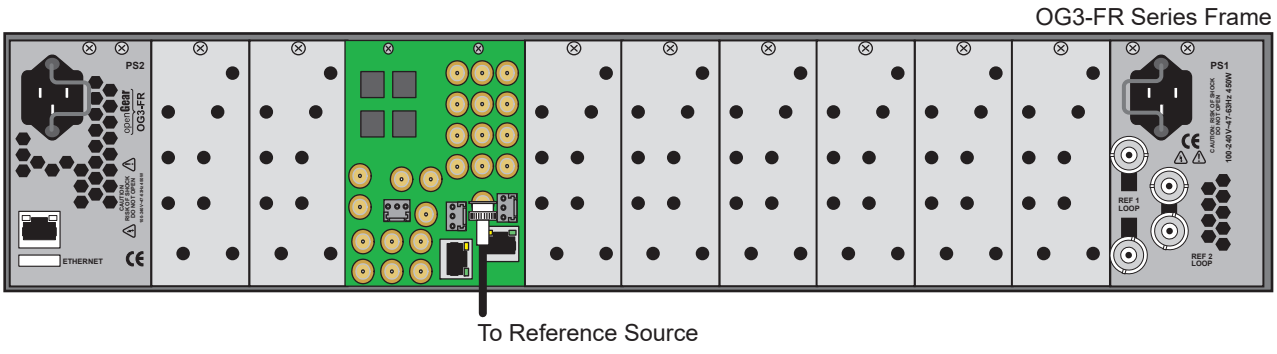


Figure 5.1 GATOR-KEY — Reference Input Cabling on the 8322AR-317 Rear Module

Video Signal Cabling

Each rear module provides connections for up to six SDI inputs and six SDI outputs.

SDI Inputs

Connect your input video signals to the SDI IN HD-BNCs on the rear module as required. There are six HD-BNC SDI inputs available on each rear module. (**Figure 5.2**)

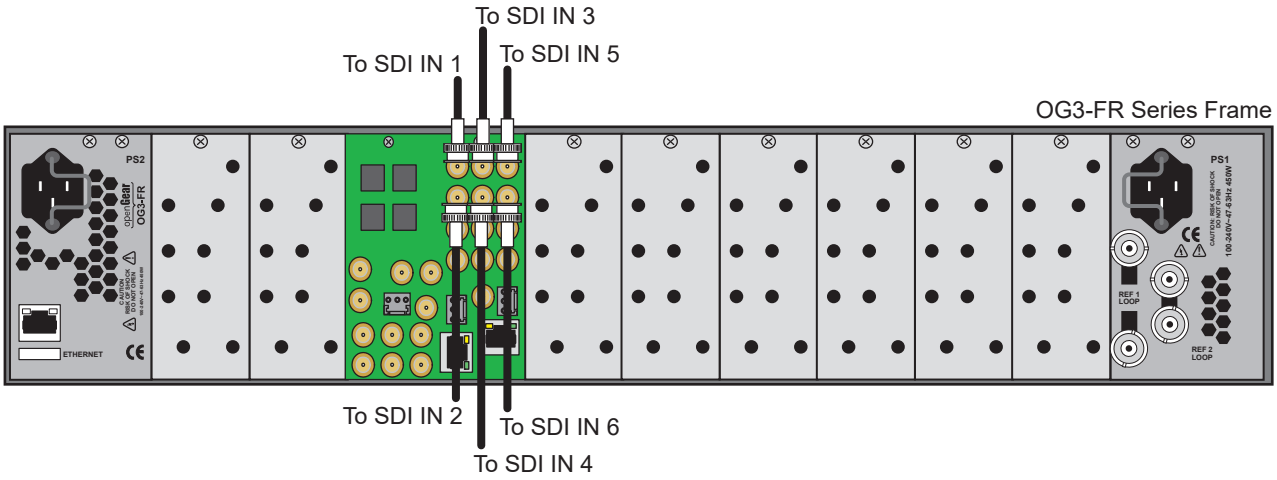


Figure 5.2 8322AR-317 Rear Module Cabling — SDI Inputs

SDI Outputs

Connect your destination devices to the SDI OUT HD-BNCs on the rear module as required. There are six HD-BNC SDI outputs available on each rear module. (**Figure 5.3**)

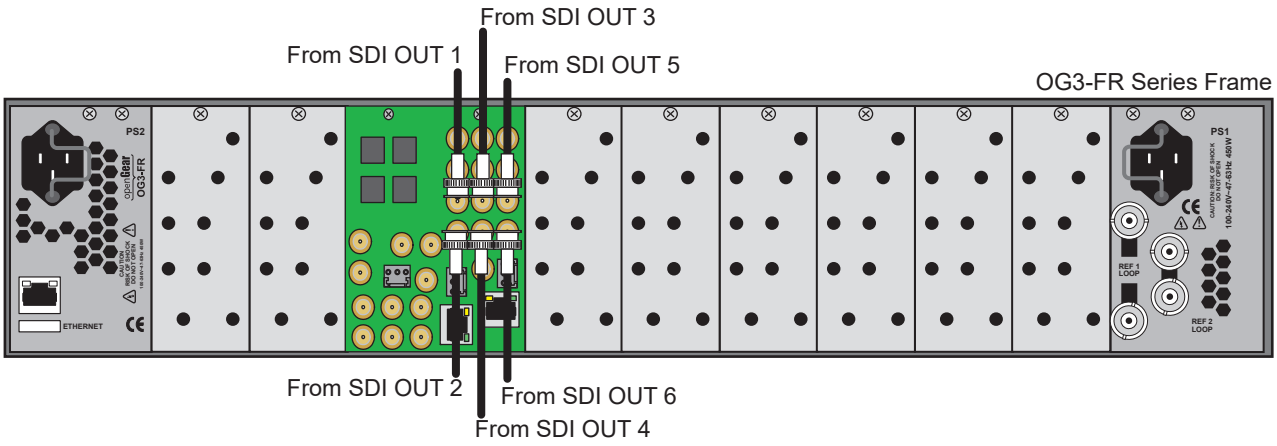


Figure 5.3 8322AR-317 Rear Module Cabling — SDI Outputs

GPI/Tally Cabling

The GATOR-KEY has four bi-directional pins labeled GPI/O 1-4 on the terminal block of the rear module. Ports are user programmable to be either an input (GPI) or an output (Tally) using the GPI/Tally Setup tab in DashBoard. Electrically, the ports are setup for contact closure to ground, with 4.75kohm pull-up resistor to +5V, so they default to a logical high state.

The ports are available on two 3-pin connectors located on the rear module. The 3-pin mating connectors are provided with the rear module. The default state for the GPI/O contacts is active low signaling. This way, if the card is removed from the openGear frame, no external events will be inadvertently asserted by the card. This also means

that if a cable is absent from the rear module, no GPI or Tally will be triggered and executed inadvertently by the card.

Connect your destination devices to the GPIO pins on the rear module as required. (**Figure 5.4**)

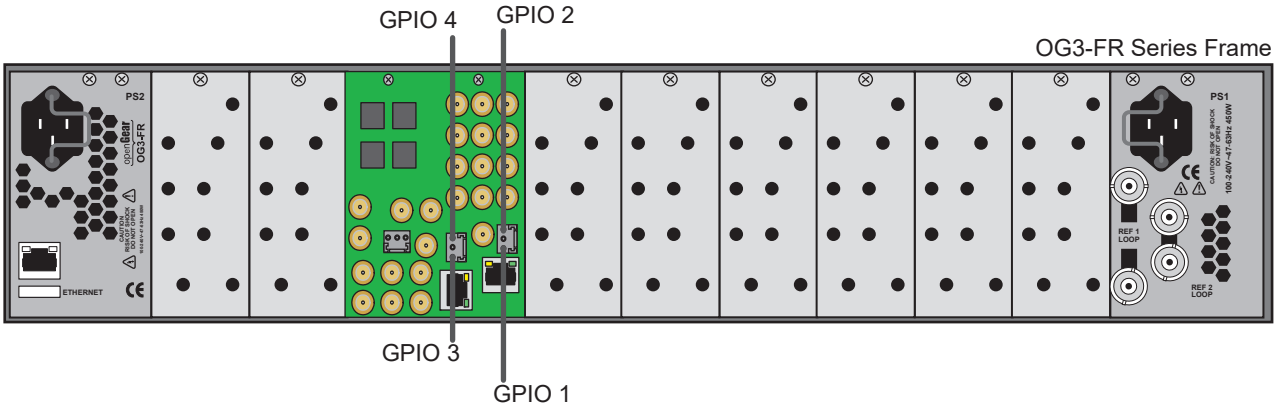


Figure 5.4 8322AR-317 Rear Module Cabling — GPI/Tally

For More Information on...

- configuring a GPIO port, refer to the chapter "**Configuring the GPI/Tallies**" on page 37.

Getting Started

This chapter provides instructions for launching DashBoard, assigning an initial IP address to the GATOR-KEY, and accessing the GATOR-KEY interfaces in DashBoard.

If you have questions pertaining to the operation of GATOR-KEY, contact us at the numbers listed in the section **"Contacting Technical Support**" on page 12. Our technical staff is always available for consultation, training, or service.

Before You Begin

Ensure that:

- The openGear frame that houses the GATOR-KEY displays in the Basic Tree View of DashBoard.
- The GATOR-KEY displays as a sub-node in the openGear frame tree.
- Your facility IT Department provided the required network settings to be assigned to the GATOR-KEY.

Launching DashBoard

DashBoard must run on a computer that has a physical wired ethernet connection. Wireless connections do not allow device discovery.

For More Information on...

- downloading and installing the DashBoard client software, refer to the ***DashBoard User Manual***.
- the GATOR-KEY interfaces in DashBoard, refer to the chapter "**DashBoard Interface Overview**" on page 57.

To launch DashBoard

1. Ensure that you are running DashBoard software version 8.4.0 or higher.
2. Launch DashBoard by double-clicking its icon on your computer desktop.

Configuring the Initial Network Settings

Once the GATOR-KEY is physically installed and cabled to your facility network, you will need to assign it an initial IP Address in order to gain full access to the card menus, options, and status fields in DashBoard. Establishing an initial IP Address enables DashBoard to communicate with the GATOR-KEY and update the Basic Tree View with the GATOR-KEY sub-node.

✶ This procedure requires a reboot of the card.

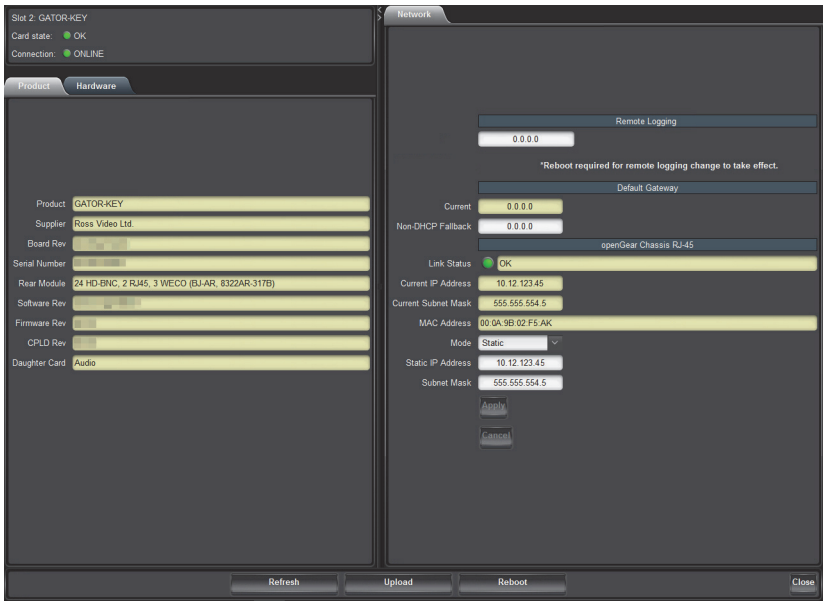
To assign the initial network settings for the GATOR-KEY

1. Launch DashBoard.
2. Expand the openGear frame node to display a list of cards installed in that frame.

   In the example below, the GATOR-KEY card is installed in Slot 2 of Frame_10.

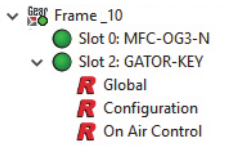
3. Double-click the **GATOR-KEY** node under the frame node.

   The **Network** interface displays in DashBoard.



4. Select the **Network** tab.
5. Use the **Mode** menu to select **Static**.
6. Use the **Static IP Address** field to assign a unique IP Address to the GATOR-KEY card.
7. Use the **Subnet Mask** field to assign the subnet mask for the card.
8. Use the **Gateway** field to specify the gateway for communications outside of the local area network (LAN) the card will use.
9. Click **Apply**.

   The card is temporarily taken off-line during the reboot of the card to apply the new settings.
10. Verify the new network settings as follows:
    a. Close the **Network** interface.
    b. Refresh the Basic Tree View.
    c. Expand the openGear frame node to display a list of sub-nodes.
    d. Verify that the GATOR-KEY displays as seen in the example below.



Accessing the GATOR-KEY Interfaces in DashBoard

Once you establish the initial network settings for the GATOR-KEY, you can access the Global, Configuration, and On Air Control interfaces. These interfaces provide options for configuring, monitoring, and operating your GATOR-KEY in DashBoard.

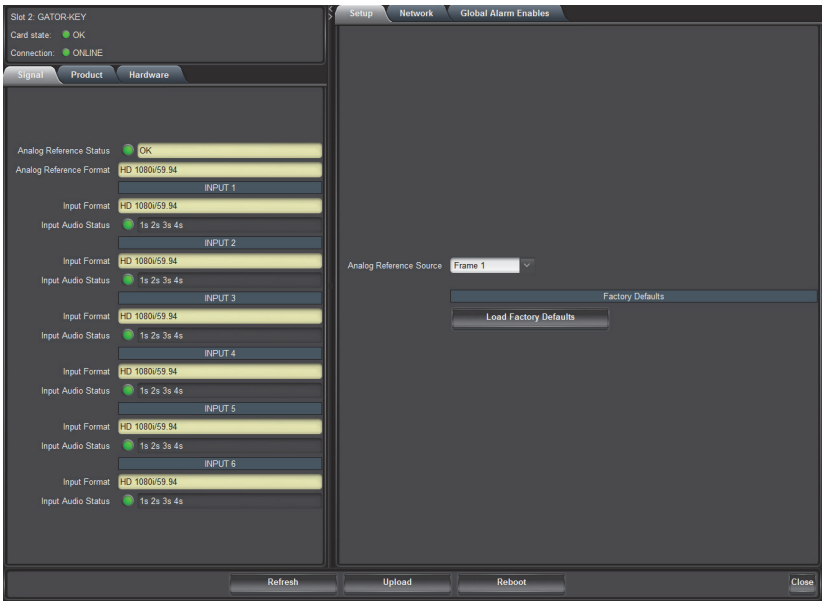
For More Information on...

- the Global interface, refer to the section "**Global Interface**" on page 57.
- the Configuration interface, refer to the section "**Configuration Interface**" on page 61.
- the On Air Control interface, refer to the section "**On Air Control Interfaces**" on page 67.

To display the Global interface in DashBoard

1. Launch DashBoard.
2. In the Basic Tree View of DashBoard, locate the openGear frame the GATOR-KEY is installed in.
3. Expand the openGear frame node to display a list of sub-nodes.
4. Locate the GATOR-KEY node in the frame tree.
5. Expand the GATOR-KEY node to display a list of sub-nodes for the card.
6. Double-click the **Global** sub-node.

   The Global interface opens in the right pane of the DashBoard window.



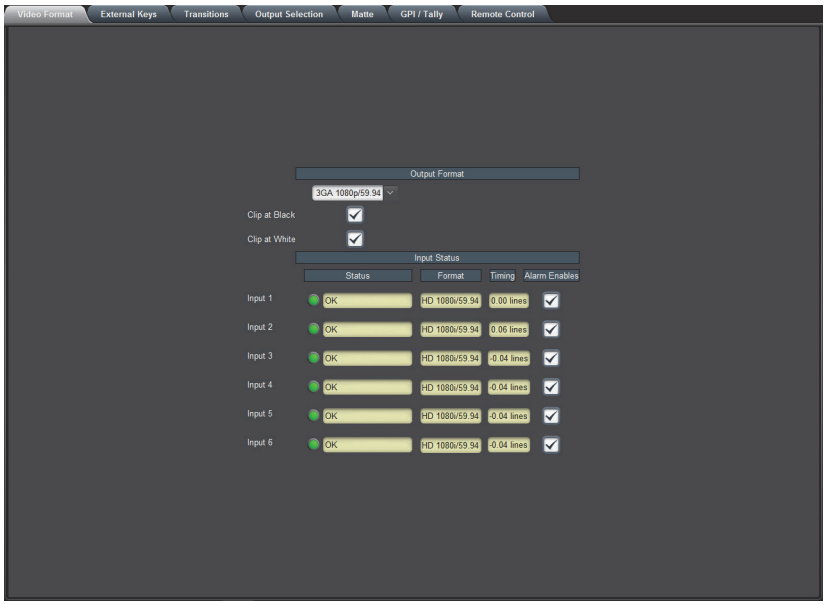
To display the Configuration interface in DashBoard

1. Launch DashBoard.
2. In the Basic Tree View of DashBoard, locate the openGear frame the GATOR-KEY is installed in.
3. Expand the openGear frame node to display a list of sub-nodes.
4. Locate the GATOR-KEY node in the frame tree.

✶ Look for the slot number that corresponds to the physical frame slot the GATOR-KEY is installed in.

5. Expand the GATOR-KEY node to display a list of sub-nodes for the card.
6. Double-click the **Configuration** sub-node.

   The Configuration interface opens in the right pane of the DashBoard window.



To display the On Air Control interface in DashBoard

1. Launch DashBoard.
2. In the Basic Tree View of DashBoard, locate the openGear frame the GATOR-KEY is installed in.
3. Expand the openGear frame node to display a list of sub-nodes.
4. Locate the GATOR-KEY node in the frame tree.
5. Expand the GATOR-KEY node to display a list of sub-nodes for the card.
6. Double-click the **On Air Control** sub-node.

   The On Air Control interface opens in the right pane of the DashBoard window.

Configuring the Ethernet Settings

The openGear frame provides ethernet connections via the ports on its rear panel, and the Network Controller Card installed in the frame. This chapter outlines how to configure the GATOR-KEY

✶ If difficulties or problems are experienced when assigning IP addresses, contact your network administrator.

Before You Begin

Ensure that:

- The openGear frame that houses the GATOR-KEY displays in the Basic Tree View of DashBoard
- An MFC-OG3-N Network Controller Card installed in your openGear frame
- The GATOR-KEY displays as a sub-node in the openGear frame tree
- You have contacted your facility IT Department for the required settings to be assigned to the GATOR-KEY

Configuring the Internal Frame Ethernet Settings

Once you have assigned an initial IP Address to the card, you can then specify the network settings that will be used when the GATOR-KEY utilizes the GigE network switch available on the Network Controller Card installed in the same openGear frame.

The port on the Network Controller Card enables GATOR-KEY to communicate with DashBoard and with other cards in the same openGear frame.

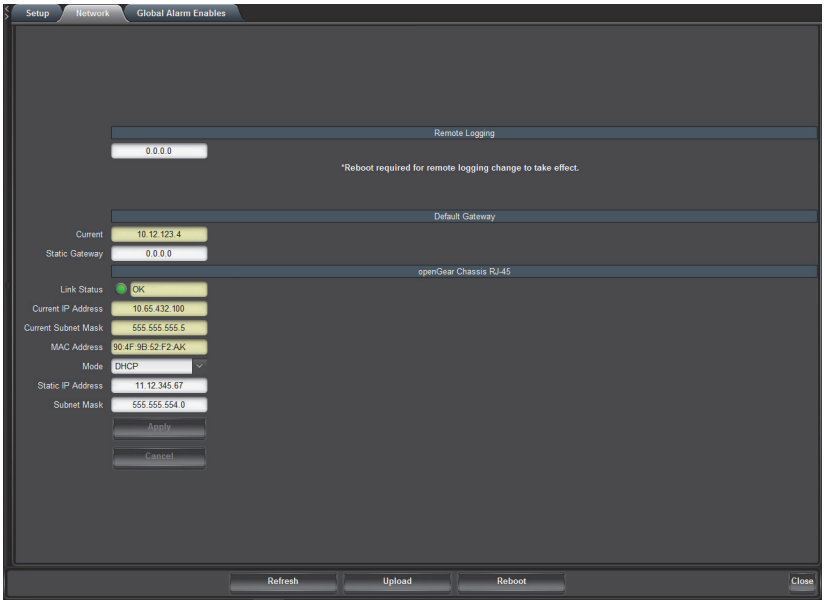
✶ Ross Video recommends using a static IP Address.

To specify the network settings for the GATOR-KEY to use via the Network Controller Card

1. Navigate to the **Global** interface as outlined in the procedure "**To display the Global interface in DashBoard**" on page 29.

✶ If the GATOR-KEY does not display a sub-node in the openGear frame tree view, refer to the section "**Accessing the GATOR-KEY Interfaces in DashBoard**" on page 28.

2. Select the **Network** tab.



3. If you are manually configuring the ethernet settings for the GATOR-KEY:
   a. Use the **Mode** menu to select **Static**.
   b. Use the **Static IP Address** field to specify the new static IP Address for the GATOR-KEY. This is the address the card will use within the openGear frame.
   c. Use the **Subnet** field to specify the subnet mask for your network.
   d. Use the Gateway field to specify the gateway for communications outside of the local area network (LAN) the card will use.
4. If you want the network settings to be automatically obtained, select **DHCP** from the **Mode** menu.
5. Click **Apply** to save the new settings.
6. Reboot the GATOR-KEY card as follows:
   a. Click **Reboot**. This button is located on the bottom of the tab.
   b. Monitor the reboot progress.

Configuring the Remote Logging Feature

The GATOR-KEY enables you to implement a streaming log that captures status information of the system. This feature is useful for troubleshooting.

✶ A centralized Syslog server must be installed in your system. Refer to the documentation that accompanied your centralized Syslog server for installation and setup information.

To configure the remote logging feature

1. Navigate to the **Global** interface as outlined in the procedure "**To display the Global interface in DashBoard**" on page 29.
2. Select the **Network** tab.
3. Use the **Remote Logging** field to specify the IP Address of the device that will capture and store the status information of the GATOR-KEY.

✶ You must press **Enter** after typing the IP Address into the **Remote Logging** field.

4. Reboot the GATOR-KEY card as follows:
   a. Click **Reboot**. This button is located on the bottom of the tab.
   b. Monitor the reboot progress.

Reference Setup

The openGear frame supports a distributed frame reference, allowing incoming reference signals to feed timing information to all openGear cards in that frame. Thus, a single signal can be used for multiple cards.

Specifying a Global Analog Reference Source

✶ When using a progressive format reference signal to lock an interlaced format video signal, the lock will be Frame Locked but Field indeterminate.

Frame Rate Compatibility

Table 8.1 provides an outlines the GATOR-KEY frame rate compatibility.

Table 8.1 Output/Reference Compatibility

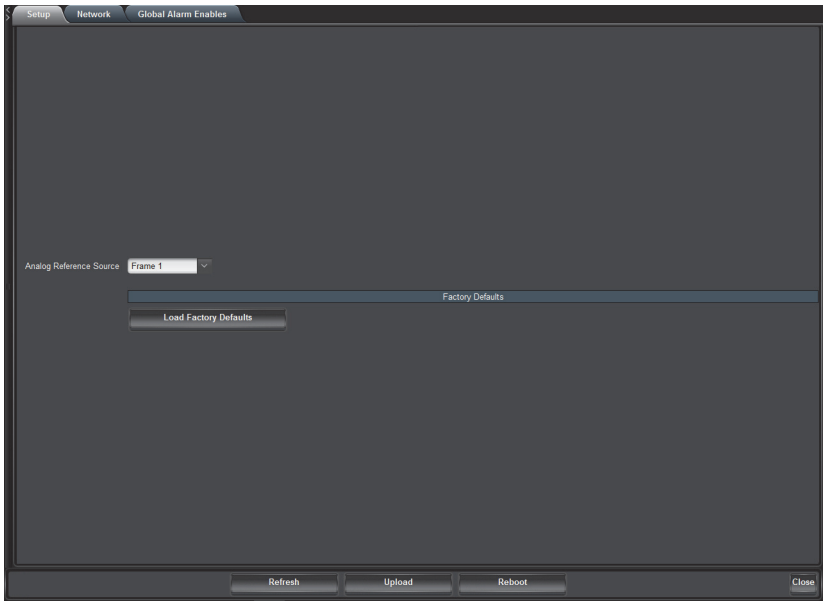
Video Format	Reference Format									
	480i 59.94 (NTSC)	1080i 59.94Hz	720p 59.94Hz	576i 50Hz (PAL)	1080i 50Hz	720p 50Hz	1080p 23.98Hz	1080psf 23.98Hz	1080p 24Hz	1080psf 24Hz
720p 59.94Hz	✓	✓	✓							
1080i 59.94Hz	✓	✓	✓							
1080p 59.94Hz	✓	✓	✓							
1080p 20.97Hz	✓	✓	✓							
2160p 59.94Hz	✓	✓	✓							
720p 50Hz				✓	✓	✓				
1080i 50Hz				✓	✓	✓				
1080p 50Hz				✓	✓	✓				
2160p 50Hz				✓	✓	✓				
1080psf 24Hz									✓	✓
1080psf 23.98Hz							✓	✓		

For More Information on...

- the options in the Analog Reference Status menu, refer to **Table 17.4**.

To specify a global analog reference source for the GATOR-KEY

1. Navigate to the **Global** interface as outlined in the procedure "**To display the Global interface in DashBoard**" on page 29.
2. Select the **Setup** tab.



3. Use the **Analog Reference Source** menu to specify the source for the reference input signal.

✶ If you select **Frame 1** or **Frame 2**, the input video frame rate must match this reference frame rate.

Monitoring the Reference Signal via DashBoard

The status of the GATOR-KEY may be monitored via its fields in the DashBoard client software or the LEDs located on the front panel of the openGear frame.

To configure the reference alarm for the GATOR-KEY

1. Navigate to the **Global** interface as outlined in the procedure "**To display the Global interface in DashBoard**" on page 29.
2. Select the **Global Alarm Enables** tab.
3. Select the **Reference Error** box to enable the Card state status field, located in the top left corner of the Global interface, to report when the analog reference signal is not detected.

Configuring the Outputs

This chapter provides instructions for setting the card output video format.

Before You Begin

Keep the following in mind when configuring your SDI signals:

- The SDI output timing is fixed on the GATOR-KEY and is set to approximately 0.5 lines after the reference.
- Each video input has a line sync that can support a full line of HD video including horizontal blanking.
- All video inputs must be timed with the reference. The input tolerance is approximately +/- 0.5 line. Exceeding this tolerance will result in the output shifting of 1 line. The status fields in the Configuration > Video Format tab displays a Yellow indicator when operating outside the range of the line sync. In such cases, a vertical shift of 1 line or more may occur.
- All of the video inputs must be the same video format as specified in the Configuration > Video Format tab in DashBoard. If the formats do not match, the card reports an error in the DashBoard Signal Status area and on the card-edge LEDs.
- The Program and Preset sources can be any of the two internally generated Logo channels or external inputs, or an internally generated black.
- Each of the six SDI outputs can be configured as Program, Preset, Alpha 1, Alpha 2, or one of four Clean Feeds.

Output Basics

This section gives an overview of how video is controlled by the GATOR-KEY. This includes video sources, video layering, and preview.

Video Sources

The GATOR-KEY has access to two basic types of video sources: external and internal. All video sources can be assigned to video source (crosspoint) buttons. By pressing a crosspoint button on a bus, the video source assigned to that button is selected.

- External video sources come from SDI inputs on the rear module.
- Internal video sources come from internally generated video, such as any of the two internally generated Logo channels, or an internally generated black.

To select a video source on a bus, you must identify the bus you want to assign a video source to and then press the crosspoint button you want to select on that bus.

Video Layering

Key layering is fixed for the GATOR-KEY and starts with Background and proceeds to Keyer 4.

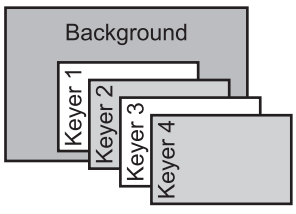


Figure 9.1 Video Layering

Video Preview

Video preview allows you to use an additional monitor to preview what the next shot is going to be. The Preset bus of GATOR-KEY shows what is selected for the next transition. This includes the keys and background video sources that will be on-air after the next transition.

Specifying the Video Format

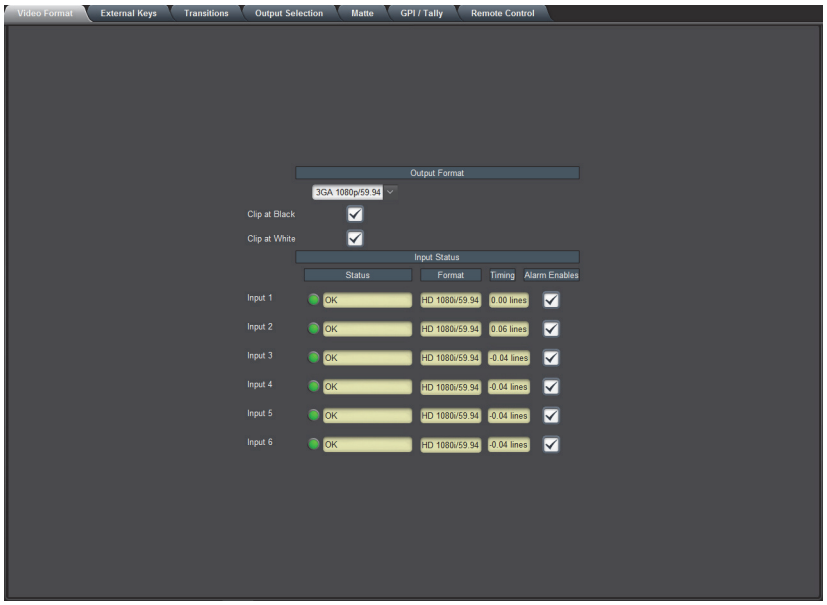
When setting the card output video format, ensure to specify the same format as in the input video signal.

For More Information on...

- the options in the Output Format menu, refer to **Table 17.7**.

To specify the output video format

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **Video Format** tab.



3. Use the **Output Format** menu, located in the Output Format area of the tab, to specify the card output video format.

★ Ensure that the specified output format matches the input video format.

4. Select the **Clip at White** box to enable the GATOR-KEY to clip to SMPTE white on all outputs.
5. Select the **Clip at Black** to enable the GATOR-KEY to clip to SMPTE black on all outputs.

Configuring the GPI/Tallies

This chapter outlines how to configure each GPI/Tally independently on the GATOR-KEY.

GPI Communication Setup

When configured as a GPI, a port behaves as an input, and can be used to trigger actions such as Cut/Dissolve the Key and/or Background. A push-button switch, or an ON-OFF switch, may be directly connected between the port and the adjacent ground pin. Alternatively, an external device may drive a low level. Minimum pulse duration is 1ms, anything shorter will be filtered out.

Typically, users will configure the GPI for Edge trigger. This means that the action is carried out either on the falling edge (button is pushed), or rising edge (button is released), depending on which Polarity is selected. Alternatively, users may configure the GPI for Level trigger. In this mode, the action is carried out on both the rising and falling edges, so there are effectively two states. The Polarity control can be used to invert the behavior. Regardless of the trigger type, GPI commands may be overridden by other command inputs such as serial protocols.

The **Edge** option enables the GPI to act as a latching trigger. Edge triggers are used when you want to toggle between settings. This option enables the GPI to execute a specific function.

- If configured for Falling Edge, the selected function is executed when the GPI input signal transitions from High to Low.
- If configured for Rising Edge, the selected function is executed when the GPI input signal transitions from Low to High.
- Edge triggered GPI signals are sampled once per frame and the associated function is executed only once per frame. The minimum pulse width is 1 millisecond.
- Typically, the edge triggered GPI is driven by external equipment that generates one pulse per event.

Level triggers are used when you want to assert a particular state for a setting. You define the on-air state of the function as being either Level High or Level Low. Therefore, if the on-air state of the Key is defined as Level High for example, when the GPI is a Level High signal, the Key will stay on air. If a Level Low is received, the Key will be taken off air.

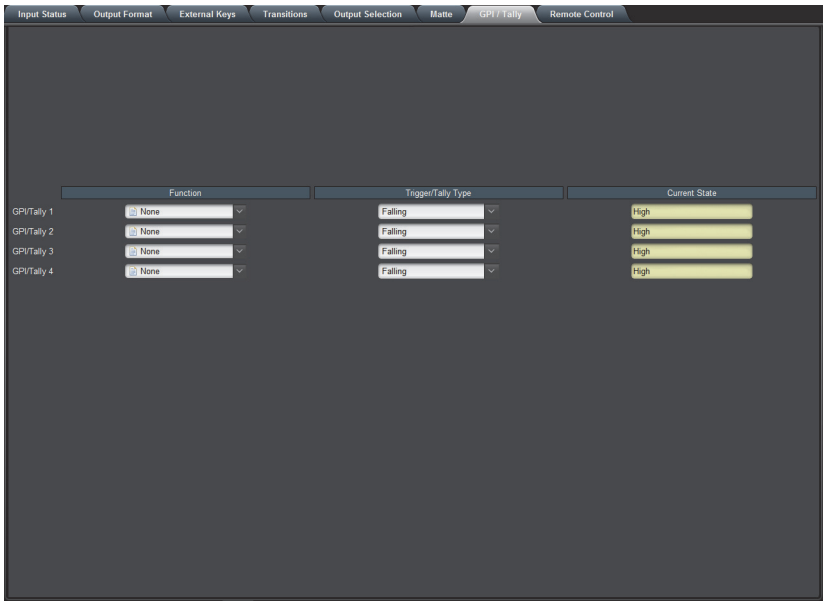
- If configured for Active Low, the selected function is executed when the GPI input signal is driven Low.
- If configured for Active High, the selected function is executed when the GPI input signal is driven High.

Configuring a Port as a GPI

Each GPI can be configured independently from the others, allowing you to customize the function of each connection.

To configure a port as a GPI

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **GPI/Tally** tab.



3. Use the **Function** menu to assign a transition event to a specific GPI port.
4. Use the **Trigger/Tally Type** menu to select a trigger and polarity for the GPI.

Tally Communication Setup

When configured as a Tally, a port becomes an output, providing a status indicator. Typically this is used to indicate which input(s) are on-air at any given moment. Each tally output on the card can be configured to be active when any of the four inputs are on air. They can be configured as Active High or Active Low. Edge triggered tallies generate a pulse to the configure polarity (high or low) for a duration of 30 frames or the duration of the event (whichever is shorter). The tally outputs defaults to a logical high level when inactive. When the tally becomes active, for example the signal is on-air, then the output is driven low.

To configure a port as a tally

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **GPI/Tally** tab.
3. Use the **Function** menu to specify what will drive the tally output when the input is on-air.
4. Use the **Trigger/Tally Type** menu to select the polarity of the tally.

Keying

Keying is the term used to described the inserting (or electronically cutting) portions of one screen into another, or placing titles over background images. Keys are made up of two components: an alpha (that cuts the hole in the background video), and a fill (that fills the hole with different video). This chapter summarizes the GATOR-KEY keying features and configuration options.

Overview

The GATOR-KEY includes up to four high quality UHD/3G/HD-SDI video keyers. In addition to the external Key Video and Key Alpha source, there are also two internal static/animation playout channels. This enables the keying of external devices such as character generators or graphic systems into a program feed and/or keying with four internal logo channels.

Key Types

The GATOR-KEY supports the following key types.

Auto Select

An Auto Select Key uses two video signals: the Key Alpha is used to cut the hole in the video, and the Key Video is used to fill the hole. For external keying, use the Configuration > External Key options to configure the two external keys. For internal sources, the Key Video and Alpha are generated internally. Note that the Key Alpha Type is automatically set to Shaped.

Self

A Self Key uses only one video signal: the luminance (or brightness) of the Key Video is used as the Key Alpha. For external keying, use the Configuration > External Key options to configure the two external keys. For internal sources, the Key Video is internally supplied. Note that the Key Alpha Type is automatically set to Unshaped.

Key Alpha Types

You can specify a key alpha as one of the following types.

Unshaped (multiplicative keying)

With an Unshaped Key, the Key Alpha luminance value mixes linearly the Key Video with the Background. Shades of gray, in the Key Alpha, are translated into transparency levels, giving the key a soft edge. Self Keys are set to Unshaped by default.

Shaped (additive keying)

With a Shaped Key, the Key Alpha cuts a hole in the Background based on the luminance value of the Key Alpha and adds the Key Video to the Background hole. Shaped Key alphas are sometimes used with Character Generators to cut very precise holes for the Key Video fill. Auto Select keys are set to Shaped by default.

Configuring Key Sources

You can assign any of the logo channels as the source for a keyer. The GATOR-KEY offers full key control with shaped and unshaped keying, self key or auto key, with clip and gain control.

To set the key type

1. Navigate to the **On Air Control** interface as outlined in the procedure "**To display the On Air Control interface in DashBoard**" on page 30.
2. Select the **Keyers** tab.

3. Select the sub-tab for the key you wish to configure.
4. Set the **Key Type** by toggling the **Key Type** button.
   - **Auto Select**— If the button displays this label, the Key uses the specified SDI IN signal on the rear module as the Key Video and the specified SDI OUT signal as the Key Alpha when Key Video is used for the key source. The Key Alpha Type is now set to Shaped.
   - **Self** — Select this option to use the SDI IN signal on the rear module as the Key Video, when Key Video is selected for the key source on the On Air tab, and its own luminance value of the same video as the Key Alpha. The Key Alpha Type is now set to Unshaped.
5. If required, use the **Key Alpha Type** menu to specify the Key Alpha Type.

Configuring the External Keys

GATOR-KEY enables you to assign a different alpha source for an external key than the fill/alpha assigned by a specific SDI IN signal.

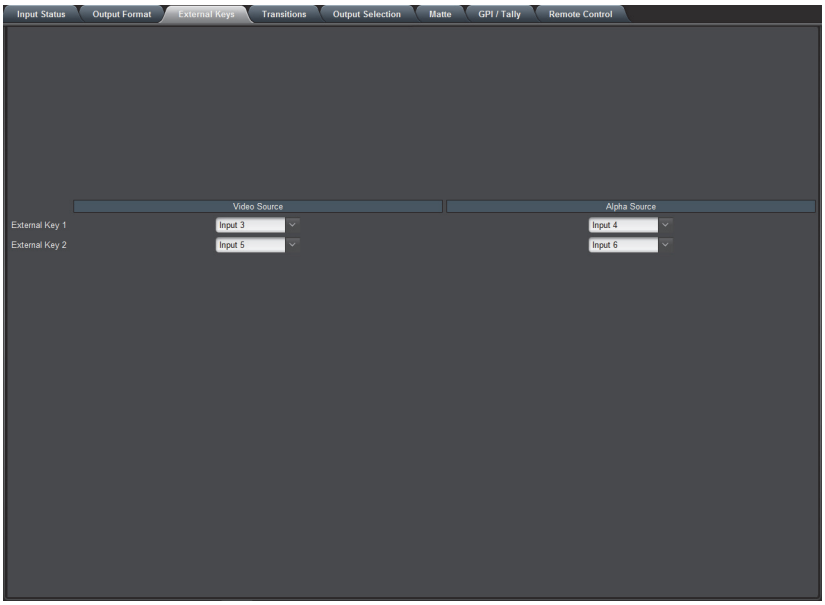
✶ You can also assign a matte generator as an external key source which may be useful for testing purposes.

For More Information on...

- assigning a matte generator to an external key, refer to the section "**Assigning a Matte Generator to an Output**" on page 43.

To assign a source to an external key

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **External Keys** tab.



3. Use the **Video Source** menu to select a source for the specified external key.
4. Use the **Alpha Source** menu to select a different alpha for the specified external key.

Mattes

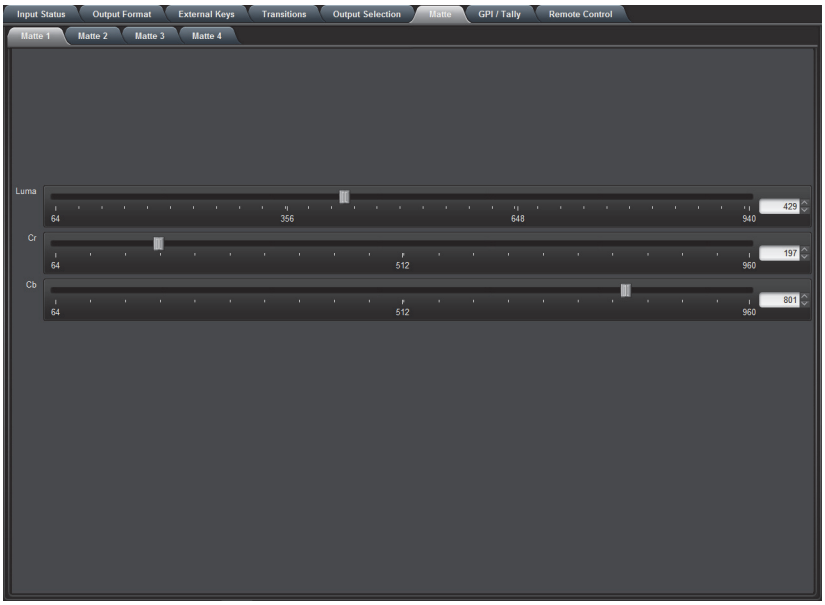
Mattes are solid color signals that can be applied to backgrounds and keys. A matte is like a pattern wash, but has only one color. A matte can be applied to an external key or card output.

Setting up a Matte Color

Color selection is done by adjusted hue, saturation, and luminance to create a custom color. The full region of the background or key is filled with the selected color.

To set up a matte color

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **Matte** tab.



3. Select the sub-tab for the matte generator you want to configure.
4. Use the **Luma** slider to adjust the luminance of your matte color.
5. Use the **Cr** slider to adjust the hue of your matte color.
6. Use the **Cb** slider to adjust the saturation of your matte color.
7. Repeat steps 3 to 6 for each matte generator you require.

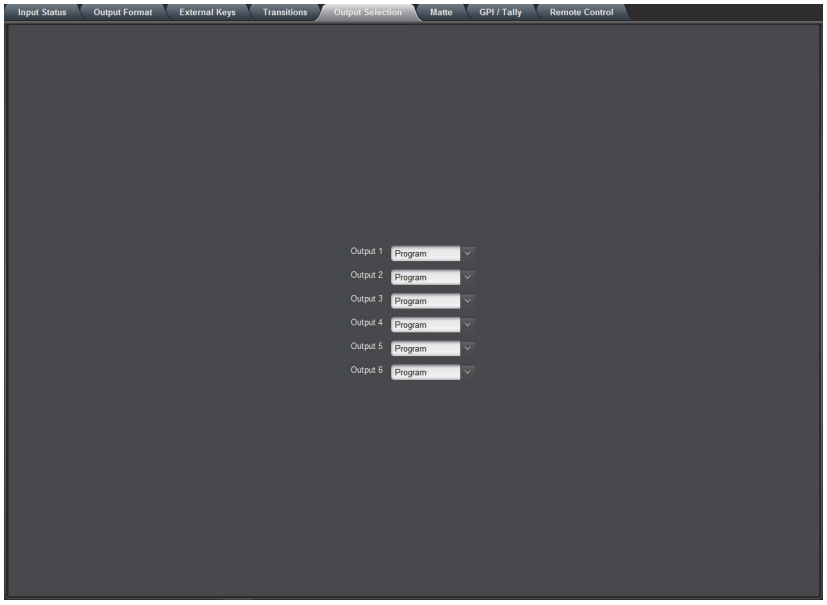
Assigning a Matte Generator to an Output

Mattes can be applied by selecting the matte generator (Matte #) on a background or key bus. When a matte generator is assigned to an external key or card output, the matte settings are displayed.

✶ Matte generators 1 and 2 are available as background and external key sources. Matte generators 3 and 4 are available as video outputs.

To assign a matte generator to a video output

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **Output Selection** tab.



3. Use the required **Output** drop-down menu to assign Matte 3 or Matte 4 to the required output of the card.

To assign a matte generator to an external key

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **External Keys** tab.
3. Use the **Video Source** menu to assign Matte 1 or Matte 2 as the video source for the specified external key.
4. Use the **Alpha Source** menu to assign Matte 1 or Matte 2 as the alpha source for the specified external key.

Transitions

Transitions are used to change the background video and take keys on and off-air. A transition can include any combination of Background video, and keys. The Program and Preset inputs allows for background dissolves and V-Fades behind the external key source.

Before You Begin

Keep the following in mind when performing transitions:

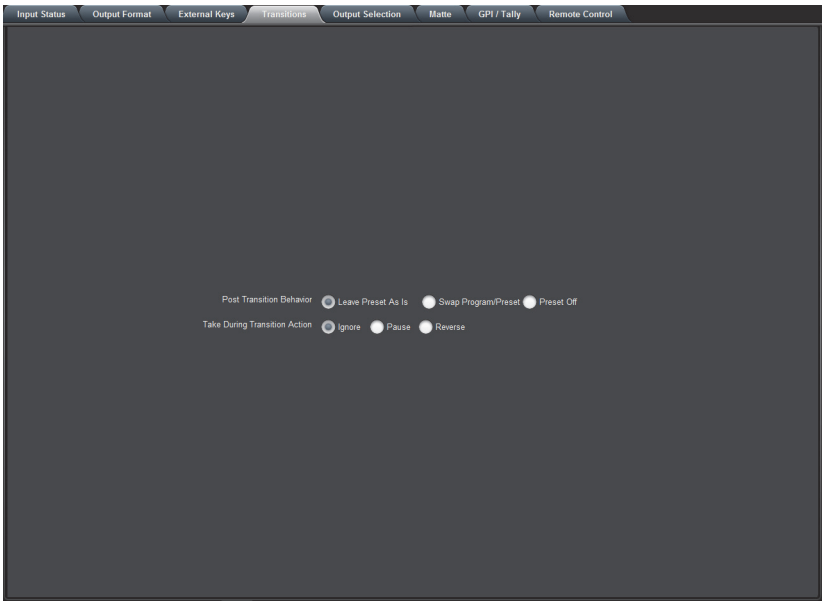
- To allow for audio cross fading, a cut takes two frames. One frame is used for the audio fade down, the video is then cut, followed by the one frame audio fade up.
- The speed at which the transition is performed, in number of frames, is determined by the setting (Slow, Medium, or Fast) in the Transition Rate area. Before proceeding, ensure the Transition Type is set to the desired type.
- If a crosspoint or transition button is selected while a transition is in progress, the original transition continues as subsequent button presses are ignored (except the FTB button).

Configuring the Transition Buttons

The Configuration interface in DashBoard enables you to specify how the **TAKE** button, in the On Air Control tab, behaves when toggled during a transition.

To configure the TAKE button

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **Transitions** tab.



3. Configure the **TAKE** button behavior by choosing an option from the Take During Transition Action area. Choose from the following:

✶ The selected behavior also applies to GPIOs.

- Ignore — Select this option to disregard any successive presses of the Auto button until the transition is complete.
- Pause — Select this option to pause the transition when the Auto button is toggled, and resume the transition when the button is pressed again. This is the default setting.
- Reverse — Select this option to reverse the transition back to the start.

Specifying a Transition Rate

You can independently define the Fade to Black, Slow, Medium, and Fast transition rates, in number of frames.

To set a transition rate

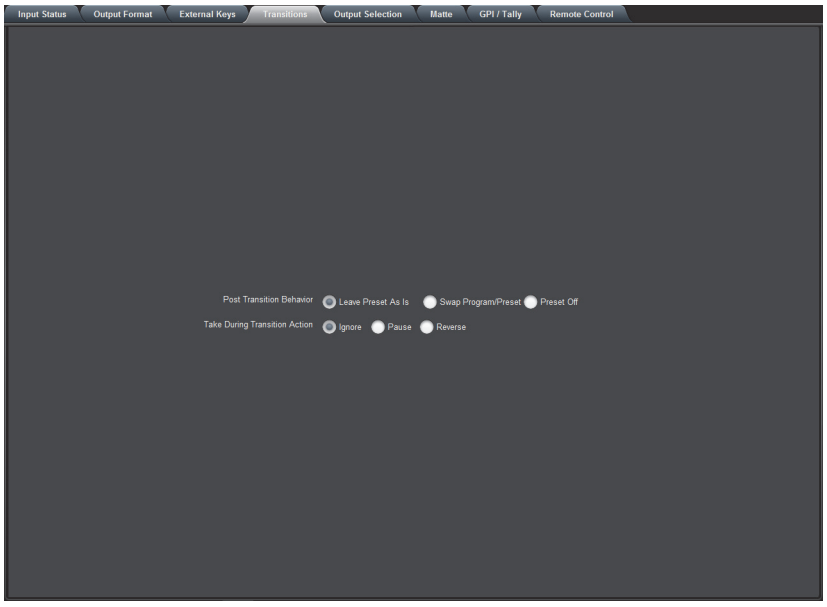
1. Navigate to the **On Air Control** interface as outlined in the procedure "**To display the On Air Control interface in DashBoard**" on page 30.
2. Select the **Home** tab.
3. Specify the rate, in number of frames, as required in the **Slow Rate**, **Medium Rate**, and **Fast Rate** fields.
4. Use the **FTB Rate** field to specify the Fade to Black transition rate.

Post Transition Behavior

You can specify the behavior of the Program and Preset buses after a transition.

To specify the post transition behavior

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **Transitions** tab.



3. Choose one the following **Post Transition Behavior** options:
   - Leave Preset As Is — The Preset bus is unchanged after a transition. Preset keyers follow Program keyers on hot-punches.
   - Swap Program/Preset — The selections for the Program and Preset swap in anticipation of the next transition.

- Preset Off — The keyers on the Preset bus will be turned off automatically after a transition. The operator must manually select the keyer(s) to be included in the next transition.

Performing Transitions

You can perform transitions in one of the following manners:

- hot-punching a crosspoint on the Program or Preset bus
- selecting a Keyer button from the Keyer area to transition a keyer on/off air
- using the options in the Transition area to add elements to the transition

The speed at which the transition is performed, in number of frames, is determined by the Transition Rate (Slow, Medium or Fast) set in the Home > Transition Rate menus.

To perform a Cut transition on the Program bus

1. Navigate to the **On Air Control** interface as outlined in the procedure "**To display the On Air Control interface in DashBoard**" on page 30.
2. Select a button on the Program bus.

To perform a Cut transition for a Key

1. Navigate to the **On Air Control** interface as outlined in the procedure "**To display the On Air Control interface in DashBoard**" on page 30.
2. Select a source for the Program output from the desired Key **Source** menu.
3. Select **CUT**.

   The Key is transitioned on or off air.

   The **Key Status** field(s) indicates the on-air status of the key.

To perform a Take transition

1. Navigate to the **On Air Control** interface as outlined in the procedure "**To display the On Air Control interface in DashBoard**" on page 30.
2. Select the **Key 1-4** buttons to add the required keyer(s).
3. Select a **Transition Speed** button (Slow, Medium, or Fast).
4. Select a **Transition Type** button.
5. Select **Take**.

Performing a Fade to Black

The **FTB** button performs a fade to black where the:

- Program bus is faded to black at the FTB rate,
- audio goes to silence, and
- closed captioning information is not passed.

The Fade to Black rate is set in the **Home** tab as outlined above. When the **FTB** button is selected, or lit, the GATOR-KEY performs an Auto transition to black.

To perform a fade to black

1. Navigate to the **On Air Control** interface as outlined in the procedure "**To display the On Air Control interface in DashBoard**" on page 30.

✶ If the Fade Down/Fade Up button is selected while a Fade to Black is in transition, the Fade will reverse.

2. Toggle the **FTB** button as follows:

   - **Fade Down** — When the button displays this label, clicking it performs an Auto transition to black. The rate is determined by the rate set in the Home > FTB Rate menu.The button label changes to Fade Up.
   - **Fade Up** — When the button displays this label, clicking it performs an Auto transition from black. The rate is determined by the rate set in the Home > FTB Rate menu.The button label changes to Fade Down.

Media File Management

DashBoard enables you to select and configure the two Logo channels that are loaded in the GATOR-KEY. Each Logo channel has a sub-tab that enables you to assign a media file to the specified logo, view a thumbnail that represents the media file currently loaded, and adjust on-air properties.

✶ The procedures in this chapter assume the On Air Control interface is displayed in the DashBoard window.

Before You Begin

The following tips and restrictions apply when managing your media files:

- Media files, such as stills and animations, are transferred to and from the GATOR-KEY using FTP protocol. The media files are stored on the Micro SD card that is installed on the GATOR-KEY.
- If you select an image size that is larger than the current video format, or an image that is positioned so that a portion of the image is off screen, this may corrupt the video output.
- When using Mac OS X™ to transfer files to the Micro SD card via an FTP server, you may only have read-only access. Refer to your Mac OS X™ documentation for details.

Managing your Media Files

The GATOR-KEY features two Logo channels (Logo 1, 2) into which you can load files from the Micro SD card physically installed on the Micro SD card. Each GATOR-KEY has 2GB of DDR playout memory. **Table 14.1** lists an estimation of how many uncompressed frames can fit into the playout memory of the GATOR-KEY.

✶ Very large animations may take several minutes to load.

Table 14.1 Full Frame Animation

Format	Image Size	No Alpha	With Alpha
2160p	3840x2160	88	58
1080i	1920x1080	386	256
1080p	1920x1080	386	256
720p	1280x720	870	579

Media files, such as animations and still images, can be transferred to and from the Micro SD card using an FTP connection. Once transferred to the Micro SD card, you use the options in the Logo tab to load the files and assign them to a Logo channel.

This section outlines the specifications for media files and provides general information on using the Micro SD card and an FTP connection.

For More Information on...

- assigning media files to Logo channels, refer to the section "**Loading a Media File**" on page 51.

Image Specifications

Media files used on the GATOR-KEY must meet the specifications outlined in **Table 14.2**. Note that if larger images are used, the images will be clipped to the dimensions listed in **Table 14.2**.

Table 14.2 Image Specifications

Parameter	Specification
Supported File Types	BMP, GIF, JPEG, PNG, TGA
Compression	Compressed and uncompressed
Interlace Formats	Max. Image Width: 32,768 pixels
	Max. Image Height: dependent on available memory
Progressive Formats	Max. Image Width: 65,536 pixels
	Max. Image Height: dependent on available memory
Animation Maximum Length	10,000 frames

File Naming Specifications

Keep the following in mind when naming your media files:

- The name can contain letters, numbers, and spaces, but cannot contain symbols such as ! @ # & * ( ) ? / , ‘ “.
- If you are naming an animation, each file must be numbered in the sequence that it will play out. The following restrictions apply to file names for animations:
  - › Each file can use a minimum 3-digit number, including all the leading zeros.
  - › The file name and number must be separated by an _ followed by three or more digits, then a period (.).
  - › Each file in the sequence must have the same numbering scheme.
  - › The GATOR-KEY loads files in numerical order.

  The following is an example of a 10-frame animation using a typical numbering scheme:

  ```
  DTVB_000.tga
  DTVB_001.tga
  ...
  DTVB_009.tga
  ```

Connection using FTP

You can use an FTP connection to transfer media files to and from the Micro SD card of the GATOR-KEY. You can also use an FTP client to delete images on the Micro SD card and re-name images.

★ An FTP connection to the GATOR-KEY should be established by your IT Department.

Before accessing the GATOR-KEY via FTP:

1. Ensure that you know the IP Address of the GATOR-KEY. This information is available in the Global > Network tab.
2. Ensure an ethernet cable is connected to the GATOR-KEY via its Ethernet port on the rear module. Refer to the section “**GATOR-KEY Rear Module Overview**” on page 16 for the port location.
3. Provide the following information to your IT Department:
   - User Name — user
   - Password — password

Connection using RossLinq

RossLinq enables you to transfer still images directly from the XPression to a GATOR-KEY Logo channel. You can transfer files into any of the directories for any of the Logo channels on the card. There are four directories, each corresponding to a specific Logo channel on the card. The file can be a format as listed in **Table 14.2**. Note that the transfer of animations is not supported at this time.

To connect to the XPression via RossLinq, establish an FTP connection using the following information:

✶ The RossLinq channel in XPression must be set as a passive FTP connection in order to set up communications between XPression and the GATOR-KEY. Refer to the XPression documentation for details.

- IP Address — This information is displayed in the IP Address field of the Ethernet tab in DashBoard for your card.
- User Name — xpression
- Password — password

For More Information on...

- using XPression, refer to the ***XPression User Guide***.

Using the Micro SD Card

The following tips and restrictions apply when using the Micro SD card:

- the Micro SD card must be installed on the GATOR-KEY powers up and must remain inserted.
- if you wish to remove the Micro SD card for programming, you must re-boot the GATOR-KEY when you re-install the Micro SD card. This allows the GATOR-KEY to recognize that a new card is available.
- the number of files you can store depends on the type of file (PNG, TGA, JPG). The Micro SD card Status field in the **On Air Control** > **Logo** > **Logo** # tab reports how much space is available on the Micro SD card.

Loading a Media File

When a media file is loaded, metadata, such as X/Y position, is also loaded, if it exists. Otherwise, default values are used. For animations, parameters are recalled after the last frame is loaded.

To load a media file into a Logo channel

1. Navigate to the **On Air Control** interface as outlined in the procedure "**To display the On Air Control interface in DashBoard**" on page 30.
2. Select the **Logo** tab.

3. Select the sub-tab for the Logo channel you want to load the media file for.
4. If files were added or re-named using an FTP connection, click **Rescan** to update the list of directories and filenames in the tab menus.

5. From the **Directory** menu, select the directory you wish to load a file from. Choose from the following:
   - [RAM CACHE] — A virtual directory that displays media files that are already loaded in the playout memory. Selecting this directory enables you to quickly access a pre-loaded file from the memory.
   - [ROOT] — This is the default directory and represents the top-most directory on the Micro SD card. You can manage files on the Micro SD card using an FTP connection.
6. From the **Filename** menu, select the file.

✶ You can clear space in the image cache by selecting None from the Filename menu of any Logo channel. However, doing so immediately replaces the current media file with the file you are attempting to load.

Adjusting On-Air Properties

The Logo tab in DashBoard allows you to adjust the position and play modes of media files. Parameters that are adjusted are saved with the image/animation. When a logo/animation is subsequently re-loaded, these parameters are also recalled. However, if there are no saved parameters for a recalled logo/animation, then the parameters remain unchanged.

To adjust the on-air properties of a media file

1. Load a media file as outlined in the procedure **"To load a media file into a Logo channel**".
2. Adjust the position of a still image in the viewing area of the screen using the **X** and **Y Position** sliders.

✶ You cannot position any portion of an image off-screen and full images cannot have their position adjusted.

3. Use the **Auto Play** box to set whether the animation automatically starts to play when it is taken on-air.
   - When this feature is enabled, the animation will play from the first frame when it is brought to air.
   - When this feature is disabled, the animation to air does not affect playback.
4. Use the **Looping** box to set whether the animation will start over when it reaches the last frame of the animation.
   - When this feature is enabled, the animation will cycle continuously (from the last frame back to the first) in an endless loop.
   - When this feature is disabled, the animation plays once, and freezes on the last frame.

✶ When both Auto Play and Looping are enabled, the animation begins to play on a transition, and keeps playing in an endless loop. If another transition is triggered, the animation jumps to the first frame and keeps playing in an endless loop.

5. Use the **Hold Time** menu to add a pause between loops of an animation.

✶ When this feature is enabled, the animation will play, but before looping back (if looping is enabled), it pauses on the last frame, for the specified Hold Time (in number of frames).

6. Select how an image is displayed by selecting an option from the **Play Mode** menu.

✶ The Play Mode feature only applies to Interlaced video formats and has no effect when using Progressive video formats.

Using RossTalk

The GATOR-KEY can be controlled from a remote editor or computer via RossTalk commands. These commands can be sent to the GATOR-KEY over an ethernet connection (TCP/UDP).

Establishing a Connection between GATOR-KEY and an External Device

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 the GATOR-KEY and your third-party router.

Physical Connection

You will require a standard network CAT-5 cable to connect the GATOR-KEY to your facility network. Refer to the section "**Cabling the Ethernet Port on the Frame**" on page 23 for more information.

Configuring the GATOR-KEY for RossTalk Communications

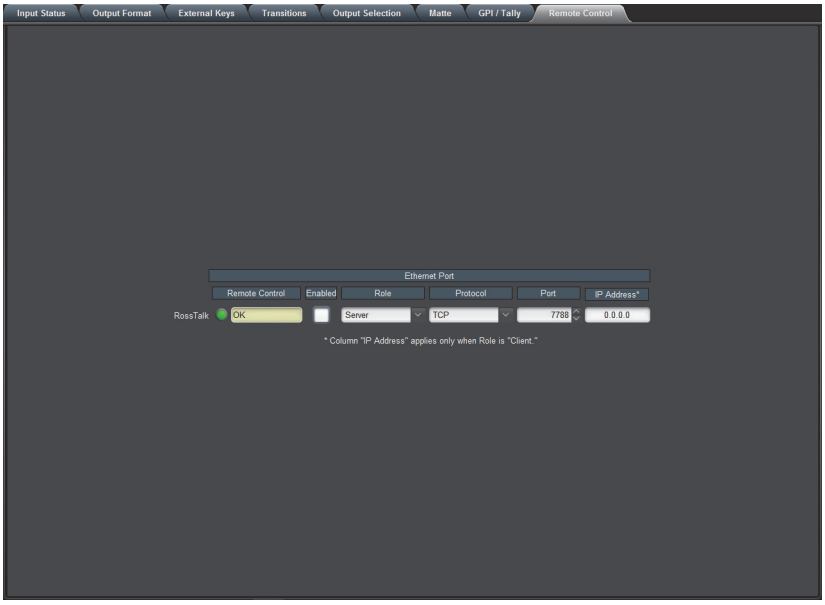
This section outlines how to configure the GATOR-KEY to communicate with a device via RossTalk.

For More Information on...

- the RossTalk settings on the Remote Control tab, refer to **Table 17.13**.

To enable the RossTalk protocol

1. Navigate to the **Configuration** interface as outlined in the procedure "**To display the Configuration interface in DashBoard**" on page 29.
2. Select the **Remote Control** tab.



3. Locate the **RossTalk** row in the **Ethernet Port** area of the tab.
4. From the **Protocol** menu, select the ethernet protocol your device will use to communicate with the card.
5. Ensure the **Port** field is set to **7788**.
6. Select the **RossTalk Enabled** box.

Using the RossTalk Protocol

RossTalk is a plain text based protocol that allows control of Ross Video equipment.

Sending RossTalk Commands

RossTalk commands are generally case-sensitive, and must be terminated with carriage return and linefeed (CR+LF). When using with the GATOR-KEY, the command can be uppercase or lowercase, and the terminator can by simply linefeed.

For example,

```
MSPATH 1:0:ColorRamp.tga
MSPATH 1:0:directory/filename.png
```

To send RossTalk Commands

1. Verify that you have created a network connection to the GATOR-KEY.
2. Enter the commands you want to send to the GATOR-KEY.

Supported RossTalk Commands

Table 15.1 lists the RossTalk commands that the GATOR-KEY supports.

Table 15.1 Supported RossTalk Commands

Command	Description
FTB	Performs a fade-to-black transition
FTB level	• Level 0 = always clears FTB. No impact if already FTB • Level 1 = always sets FTB state. No impact if already FTB
GPI xx	Triggers action associated with GPI number 1 through 4
GPI xx:level	Triggers GPI number 1 to 4 where: • Level 0 = logically OFF • Level 1 = logically ON
KEYAUTO 1:keyer	Fades a key on/off air. The keyer value is 1 to 4.
KEYAUTO 1:keyer:level	• Level 0 = always take key off air; no change if key is already off air • Level 1 = always take key on air; no change if key is already on air
KEYCUT 1:keyer	Cuts a key on/off air. The keyer value is 1 to 4.
KEYCUT 1:keyer:level	• Level 0 = always take key off air; no change if key is already off air • Level 1 = always take key on air; no change if key is already on air
MSPATH CHAN:0:FILENAME	Load a still or animation from the Micro SD card where: • **CHAN** is logo channel (1 to 2) • **FILENAME** is the directory/filename to be loaded. There is a maximum filename length of 256bytes. ✶ The **FILENAME** is case-sensitive and must match exactly how the files are stored on the Micro SD card.

Upgrading the Software

The GATOR-KEY can be upgraded in the field via DashBoard.

To upgrade the software on a card

1. Contact Ross Technical Support for the latest software version file.
2. Ensure the ethernet cable is connected to the **Ethernet** port on the OG3-FR series frame.
3. From the **Tree View**, expand the node for the GATOR-KEY you want to access.
4. Double-click the **Global** sub-node to display the interface in the right-half of DashBoard.
5. Select **Upload**, located near the bottom of the interface, to display the **Select file Upload** dialog.
6. Navigate to the ***.bin** file you want to upload.
7. Click **Open**.
8. If you are upgrading a single card:
   a. Click **Finish** to start the upgrade.
   b. Proceed to step 10.
9. If you are upgrading multiple cards:
   a. Click **Next >** to display the **Select Destination** menu. This menu provides a list of the compatible cards.
   b. Specify the card(s) to upload the file to by selecting the check box(es) for the cards you want to upload the file to.
   c. Verify the card(s) you want to upload the file to. The **Error/Warning** fields indicate any errors, such as incompatible software or card type mismatch.
   d. Click **Finish**.
10. Monitor the upgrade.
    - An **Upload Status** dialog enables you to monitor the upgrade process.
    - Notice that each card is listed in the dialog with a  button. This button is replaced with a **Reboot** button once the software file is loaded to that card.

✶ Avoid clicking the individual Reboot buttons until all cards have successfully completed the file upload process and the OK button, located in the bottom right corner of the dialog, is enabled.

- Click **OK** to reboot all the cards listed in the **Uploading to Selected Devices** dialog.
- The **Reboot Confirm** dialog displays, indicating the number of cards that will reboot. Click **Yes** to continue the upgrade process. Note that clicking **Cancel** or **No** returns you to the **Uploading to Selected Devices** dialog without rebooting the card(s).
- The card(s) are temporarily taken off-line during the reboot process. The process is complete once the status indicators for the **Card State** and **Connection** return to their previous status.

DashBoard Interface Overview

This chapter summarizes the interfaces, and tabs available from DashBoard for the GATOR-KEY.

Global Interface

The Global interface is displayed by double-clicking the Global sub-node in the GATOR-KEY tree. The tabs in the Global interface enable you to monitor the overall status of the GATOR-KEY software and hardware, configure the network settings for ethernet communications, and enable alarms.

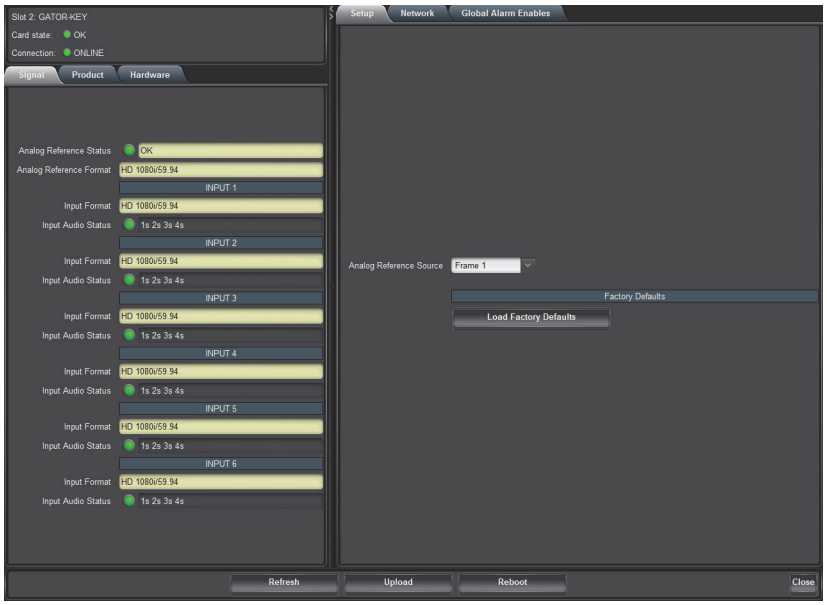


Figure 17.1 Example of the Global Interface in DashBoard

Signal Tab

Table 17.1 summarizes the read-only information displayed in the Signal tab.

Table 17.1 Signal Tab

Item	Parameters	Description
Analog Reference Status	Reference (Green)	Indicates the detected reference format is supported
	No Reference (Red)	No signal detected on selected reference input
	Incompatible (Red)	A reference signal is detected but the format is incompatible with the current output mode
	Unlocked (Red)	A reference signal is detected, but the card is not locked to it
Analog Reference Format	###	Indicates the reference format detected
INPUT #		
Input Format	###	Signal present and the format matches the video output format configuration of the card

Table 17.1 Signal Tab

Item	Parameters	Description
Input Audio Status	1# 2# 3# 4#	Displays the audio status for each of the four audio groups where 1-4 indicates the group and # indicates the status of the group as follows: • an **s** indicates the presence of synchronous audio on the group • an **x** indicates that audio is not present • an **a** indicates the presence of asynchronous audio on the group

Product Tab

Table 17.2 summarizes the read-only information displayed in the Product tab.

Table 17.2 Product Tab

Item	Parameters	Description
Product	GATOR-KEY	
Supplier	Ross Video Ltd.	
Board Rev	#	Indicates the hardware version
Serial Number	#	Indicates the serial number of the card
Rear Module	#	Indicates the rear module the card is installed in
Rear Module Status	OK (Green)	A supported rear module is installed with the card
	Alarm suppressed (Green)	An unsupported rear module is installed by the Global Alarm Enables > Incompat Rear Module option is disabled (box is not selected)
	Incomp I/O Module (Red)	Card is connected to an unsupported rear module
Software Rev	v#.#-#	Indicates the software version running on the card
Firmware Rev	#.#	Indicates the firmware version running on the card
CPLD Rev	#.#	Indicates the complex programmable logic device version of the GATOR-KEY
Daughter Board	#	Indicates the daughter card model installed on the main card

Hardware Tab

Table 17.3 summarizes the read-only information displayed in the Hardware tab.

Table 17.3 Hardware Tab

Item	Parameters	Description
Hardware Status	OK (Green)	The fans are operating correctly and no errors are detected
	Alarm suppressed (Green)	There are fan errors detected but the Global Alarm Enables > Stalled Fan option is disabled (box is not selected)

Table 17.3 Hardware Tab

Item	Parameters	Description
Hardware Status	Critical Temperature (Red)	An error with the fans is occurring. Verify that the fans and airflow for the card is valid.
	Fan Off/Stalled (Red)	
Voltage (mV)	#	Measured input voltage
Current (mA)	#	Current consumption in milliamperes
Power (W)	#	Power consumption in watts
FPGA Temp (C)	#C / #F	Indicates the FPGA Core temperature where: • A green indicator displays when the temperature is less than 95°C. • A yellow indicator displays when the temperature is greater than or equal to 95°C. • A red indicator displays when the temperature is greater than or equal to 100°C. ✶**If the temperature is greater than 100°C, the user must manually shut off the card**.
AXI Bridge	#	The Advanced extensible interface bridge is running correctly on the GATOR-KEY. This information is only used by Ross Technical Support.
Fan Speed	#	Reports the speed (rpm) of the fan on the board
CPU Usage	x.xx / y.yy / z.zz	Displays the CPU Load average where: • x.xx represents in the last minute • y.yy represents the last five minutes • z.zz represents the last fifteen minutes
RAM Available	# / #.## MB	CPU Memory Used / Total CPU Memory

Setup Tab

Table 17.4 summarizes the options in the Setup tab.

Table 17.4 Setup Tab

Item	Parameters	Description
Analog Reference Source	Frame 1	Select this option to use the source connected to the **REF 1** port on the openGear frame
	Frame 2	Select this option to use the source connected to the **REF 2** port on the openGear frame
	Local	Select this option to use the external reference source connected to **REF IN** on the rear module
Factory Defaults		
Load Factory Defaults	All editable parameters in DashBoard, except those in the Network tab, are reset to the factory default values	

Network Tab

Table 17.5 summarizes the menus and read-only fields displayed in the Network tab.

Table 17.5 Network Tab

Item	Parameters	Description
Remote Logging		
Remote Logging	#.#.#.#	Specifies the IP Address for the external device that is logging the communication activity for the GATOR-KEY
Default Gateway		
Current (read-only)	#.#.#.#	Indicates the gateway for communications outside of the local area network (LAN)
Static Gateway	#.#.#.#	The Gateway for the GATOR-KEY that the user manually assigned
openGear Chassis RJ-45		
Link Status (read-only)	OK (Green)	The GATOR-KEY is communicating on the network via the Network Controller Card
	Invalid Subnet Mask (Yellow)	The Current Subnet Mask value is set incorrectly or is invalid within your network
	Apply/Cancel Changes (Yellow)	One or more setting on this tab was changed but the **Apply** button was not selected
	Link Down (Red)	The link for the Network Controller Card is invalid
Current IP Address (read-only)	#.#.#.#	Indicates the IP Address currently assigned to the GATOR-KEY via the Network Controller Card
Current Subnet Mask (read-only)	#.#.#.#	Indicates the subnet mask for the GATOR-KEY
MAC Address (read-only)	#	Indicates the MAC Address currently assigned to the GATOR-KEY
Mode	Static	The user manually supplies the network settings for the GATOR-KEY
	DHCP*	Automates the assignment of network settings for the GATOR-KEY
Static IP Address	#	The IP Address for the GATOR-KEY that the user manually assigned
Subnet Mask	#	The Subnet Mask for the GATOR-KEY that the user manually assigned

Global Alarm Enables Tab

Table 17.6 summarizes the options displayed in the Global Alarm Enables tab.

Table 17.6 Global Alarm Enables Tab

Item	Parameters	Description
Rear Module Alarm		
Incompat Rear Module	Selected*	The Global > Product > Rear Module Status field reports when a rear module is not compatible with the card
	Cleared	Disables this alarm
Fan Alarm		
Stalled Fan	Selected*	The Global > Hardware > Hardware Status field reports when the indicated fan is not working correctly
	Cleared	Disables this alarm
Analog Reference Alarm		
Reference Error	Selected*	The Global > Signal > Analog Reference Status field reports when there is a loss of reference signal
	Cleared	Disables this alarm

Configuration Interface

The Configuration interface is displayed by double-clicking the Configuration sub-node in the GATOR-KEY tree. The tabs in the Configuration interface enable you to configure the outputs, external keys, transitions, the matte generators, the box masks, and GPI/Tally communications.

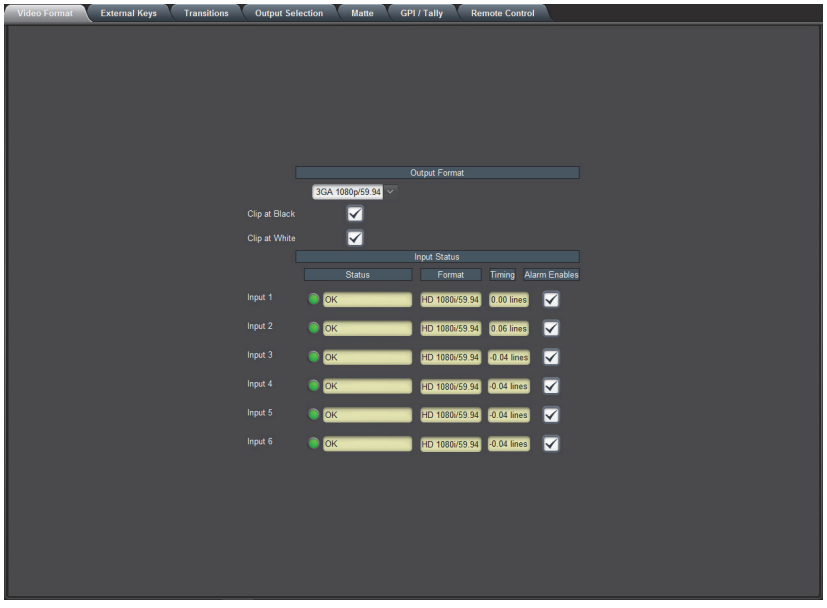


Figure 17.2 Example of the Configuration Interface in DashBoard

Video Format Tab

Table 17.7 summarizes the read-only information displayed in the Video Format tab.

Table 17.7 Video Format Tab

Item	Parameters	Description
Output Format		
Output Format	#	Selects the video format for the output signal. Note that a change in video format will not take effect until the reference is compatible. The default is 1080p/59.94.
Clip at Black	Selected	Enables the card to clip to SMPTE black on all outputs
	Cleared	Super-black is not clipped (allows super-black)
Clip at White	Selected	Enables the card to slip to SMPTE white on all outputs
	Cleared	Super-white is not clipped (allows super-white)
Input Status - Input #		
Status (read-only)	OK (Green)	The input signal is valid and no errors are detected
	Incompatible Video (Yellow)	
	Invalid Video (Red)	The input video format is not supported or does not match the reference format
	No signal (Red)	No signal present on the specified input
Format (read-only)	#	Indicates the detected video format of the specified input signal
Timing (read-only)	# lines (to analog ref)	Indicates the timing of the specified input signal relative to the reference signal
Alarm Enables	Selected*	The GATOR-KEYmonitors the signal on the specified IN BNC and reports when an error is detected on the input signal
	Cleared	The GATOR-KEYdoes not report when an error is detected on the specified input signal

External Keys Tab

Table 17.8 summarizes the options displayed in the External Keys tab.

Table 17.8 External Keys Tab

Item	Parameters	Description
Video Source		
External Key #	Black	Assigns black as the video source for the specified External Key
	White	Assigns white as the video source for the specified External Key
	Matte #	Assigns the specified matte generator as the video source for the specified External Key

Table 17.8 External Keys Tab

Item	Parameters	Description
External Key #	Input #	Assigns the specified SDI IN signal as the video source for the specified External Key
Alpha Source		
External Key #	Black	Assigns black as the alpha source for the specified External Key
	White	Assigns white as the alpha source for the specified External Key
	Matte #	Assigns the specified matte generator as the alpha source for the specified External Key
	Input #	Assigns the specified SDI IN signal as the alpha source for the specified External Key

Transitions Tab

Table 17.9 summarizes the options displayed in the Transitions tab.

Table 17.9 Transitions Tab

Item	Parameters	Description
Post Transition Behavior		
Leave Preset As Is*	The Preset bus remains unchanged after a transition	
Swap Program/Preset	The Program and Preset buses flip-flop after a transition	
Preset Off	The Preset bus is unavailable after a transition	
Take During Transition Action		
Ignore*	Select this option to disregard any successive presses of the TAKE button until the transition is complete	
Pause	Select this option to pause the transition when the TAKE button is toggled, and resume the transition when the button is pressed again	
Reverse	Select this option to reverse the transition back to the start	

Output Selection Tab

Table 17.10 summarizes the options displayed in the Output Selections tab.

Table 17.10 Output Selection Tab

Item	Parameters	Description
Output #	Black	The specified OUT BNC displays black
	White	The specified OUT BNC displays white
	Matte #	The specified OUT BNC displays the specified Matte channel
	Program	The specified OUT BNC displays the Program output
	Preset	The specified OUT BNC displays the Preview output

Table 17.10 Output Selection Tab

Item	Parameters	Description
Output #	Clean #	The specified OUT BNC displays the selected clean feed output
	SDI #	The specified OUT BNC displays the specified SDI input signal
	Alpha #	The specified OUT BNC displays the specified alpha channel of the currently loaded logo. If the corresponding logo channel does not have an alpha, the OUT BNC outputs white.

Matte Tab

Table 17.11 summarizes the options displayed in the Matte tab for each matte generator.

Table 17.11 Matte Tab

Item	Parameters	Description
Matte #		
Luma	#	Adjusts the luma component
Cr	#	Adjusts the blue-difference values of the matte generator channel where: • Increasing the value causes the display color to become increasingly saturated with blue • Decreasing the value de-saturates the blue color from the display color
Cb	#	Adjusts the red-difference values of the matte generator channel where: • Increasing the value causes the display color to become increasingly saturated with red • Decreasing the value de-saturates the red color from the display color

GPI/Tally Tab

Table 17.12 summarizes the options displayed in the GPI/Tally tab.

Table 17.12 GPI/Tally Tab

Item	Parameters	Description
GPI/Tally #		
Function	None	The specified GPIO port is not configured and the GPI has no effect. The Trigger/Tally Type setting is ignored.
	Tally Video Input #	Configures the GPIO port as an output and reflects the on-air status of the specified SDI IN signal
	Tally Key #	Configures the GPIO port as an output and reflects the on-air status of the specified Key

Table 17.12 GPI/Tally Tab

Item	Parameters	Description
Function	Tally Any Key	Configures the GPIO port as an output; the Tally is active when any of the Keys are on-air
	GPI Auto Key #	An auto transition is performed to bring the key on-air or off-air when this GPI input is triggered
	GPI Cut Key	A cut transition is performed on the specified Key when a trigger is received by that GPI input
	GPI Take	A Take transition is performed when a trigger is received by that GPI input
	GPI Fade to Black	A fade to black is performed when a trigger is received that the specified GPI input
Trigger/Tally Type	Falling*	If configured for Falling Edge, the selected function is executed when the GPI input signal transitions from High to Low
	Rising	If configured for Rising Edge, the selected function is executed when the GPI input signal transitions from Low to High
	High	If configured for Active High, the selected function is executed when the GPI input signal is driven High
	Low	If configured for Active Low, the selected function is executed when the GPI input signal is driven Low
Current State (read-only)	High	Reports the tally status
	Low	

Remote Control Tab

Table 17.13 summarizes the options displayed in the Remote Control tab.

Table 17.13 Remote Control Tab

Item	Parameters	Description
Ethernet Port - RossTalk		
Remote Control (read-only)	OK	• **Enabled** box is selected for this protocol • **Role** is set to **Client** • Specified IP address and Port number are valid • GATOR-KEY has successfully established connection to the given IP address and port
	Inactive (Green)	**Enabled** box is not selected for RossTalk
	Listening (Green)	• **Enabled** box is selected for RossTalk • **Role** is set to **Server** • Specified Port number is valid • GATOR-KEY is ready to accept connections on the specified port

Table 17.13 Remote Control Tab

Item	Parameters	Description
Remote Control (read-only)	Reconnecting (Yellow)	• **Enabled** box is selected for RossTalk • **Role** is set to **Client** • GATOR-KEY attempts to connect periodically to the specified IP address and Port number. The interval between connection attempts start at 10 seconds, increases by 10 seconds, to a maximum of 60 seconds.
	Connecting (Yellow)	• **Enabled** box is selected for RossTalk • **Role** is set to **Client** • GATOR-KEY is attempting to connect to the specified IP address and Port Number
	Port in use (Red)	• **Enabled** box is selected for RossTalk • **Role** is set to **Server** • Port Number specified in the Port field is invalid or in use by another service
	Cannot connect (Red)	• **Enabled** box is selected for RossTalk • **Role** is set to **Client** • Specified IP address and Port Number are invalid or in use by another device
Enabled	Selected	Enables the RossTalk protocol on the rear module ethernet port
	Cleared*	Disables the RossTalk protocol on the ethernet port. When the check box is cleared, any incoming data from the external device is discarded by the GATOR-KEY.
Role	Server	The GATOR-KEY functions as a host, or socket listener, on the network
	Client	The GATOR-KEY functions as a service requester that initiates communications with a server
Protocol	TCP*	Select this option if your external device is connected to the GATOR-KEY through a network and uses the Transmission Control Protocol (TCP/IP)
	UDP	Select this option if your device is connected to the GATOR-KEY through a network and uses the User Datagram Protocol (UDP/IP).

Table 17.13 Remote Control Tab

Item	Parameters	Description
Port	#	When **Role** is set to **Server**: • specifies the TCP or UDP port numbers where the GATOR-KEY will listen on. • TCP ports 0, 21, 80, 5253, and 6667 are unavailable for ethernet communications
		When **Role** is set to **Client**, this menu specifies the remote port number to which the GATOR-KEY will try to connect
IP Address	#.#.#.#	• Only applicable when **Role** is set to **Client** • Specifies the IP address of the external device. The default is 0.0.0.0 and this must be changed to the actual IP address of the external device.

On Air Control Interfaces

The On Air Control interface enables you to setup and perform transitions. This interface is organized into two distinct panels:

- Setup — This panel is located in the top half of the interface and includes the Home, Keyers, and Logo tabs.
- Control — This panel is in the lower half of the On Air Control interface and includes the Program and Preset buses, Keyers area, Transition area, and TAKE button.

Figure 17.3 Example of the On Air Control Interface

Home Tab

The Home tab is the first tab that displays in the Setup panel. **Table 17.14** summarizes the options displayed in the Home tab.

Table 17.14 Home Tab

Item	Parameters	Description
Transition Rates (frames)		
Slow Rate	2 to 999[a]	Defines the Slow Rate in frames
Med Rate	2 to 999[b]	Defines the Medium Rate in frames
Fast Rate	2 to 999[c]	Defines the Fast Rate in frames
FTB Rate	2 to 999[d]	Defines the Bade to Black Rate in frames

a. The default value is 60 frames.
b. The default value is 30 frames.
c. The default value is 15 frames.
d. The default value is 30 frames.

Keyers Tabs

The Keyers tab is the second tab that displays in the Setup panel. Each keyer has a sub-tab that enables you to select video sources, key types, and adjust transparency, clip, and gain. The GATOR-KEY supports Auto Select and Self keys. **Table 17.15** summarizes the options displayed in each Key sub-tab.

Table 17.15 Keyers — Key # Tabs

Item	Parameters	Description
Transparency	0* to 100	Adjusts the transparency level of the key: • 0 — The key is completely opaque; there is no difference between the original key and the key with the transparency effect applied to it. • 100 — The key is completely transparent; the key is not visible on the screen.
Clip	#	Adjusts the clip values; default is 92% (the maximum luminance range not including Super White).
Gain	0 to 100	Adjusts the gain values; default is 50.
Key Type	Auto Select*	A Key which uses two video signals (Alpha and Fill); the Key Alpha Type is automatically set to Shaped. If you configure an internal Logo channel as Auto Select, the associated alpha signal is used.
	Self	A Key that uses the luminance values of the KEY VIDEO source for the alpha; the Key Alpha Type is automatically set to Unshaped. If you configure an internal Logo channel as Self, the luminance value of the associated alpha is used.

Table 17.15 Keyers — Key # Tabs

Item	Parameters	Description
Key Alpha Type	Unshaped*	The card performs a multiplicative key. The Key Alpha luminance value mixes linearly the Key Video with the Background. Shades of gray, in the Key Alpha, are translated into transparency levels, giving the key a soft edge.
	Shaped	The card performs an additive key. The Key Alpha cuts a hole in the BKGD and the Key Video is added to the BKGD. Shaped Key alphas are sometimes used with Character Generators to cut very precise holes for the Key Video fill.
Key Invert	On	Reverses the polarity of the Key Alpha. A Key Invert can be applied to any key type.
	Off*	The Key Alpha is not inverted
Default	Make Linear	Resets the clip and gain values to the default settings. The default setting for this is Cleared (unselected).
Keyer Source		
External #	Assigns the external key source as the keyer output. You will also need to configure the settings in the **External Sources** tab	
Logo #	Assigns the specified Logo channel as the keyer output.	

Logo Tabs

Each logo channel has a sub-tab that enables you to select files, position the on-screen image, and specify animation playout settings. **Table 17.15** summarizes the options displayed in each Logo tab.

Table 17.16 Logo — Logo # Tabs

Item	Parameters	Description
Image		
File (read-only)	xxx_##.yyy	Indicates the full path of the currently loaded file where ## represents the duration of the file if it is an animation
Status (read-only)	Loading frame X of Y	• Displays information about the channel in both the number of frames (integer), and in the number of seconds (fractional) • Any errors during loading are also displayed • When the file(s) have loaded, this field displays the dimensions of the image (e.g. 1920x1080)
	Animation loaded (#)	
	Single image loaded (#)	
	Idle	
	Queued	Indicates that one logo channel is loading and a second channel was selected to load at the same time. Once the first channel is loaded, the second channel will begin loading.
Selected on (read-only)	#	Indicates all the key(s), or backgrounds, that currently have the media file selected
	None	

Table 17.16 Logo — Logo # Tabs

Item	Parameters	Description
On Air (read-only)	#	Indicates the on-air key(s), or backgrounds, that have this media file selected
Directory	[RAM CACHE]	The field displays the directory the currently selected media file is located in
	[ROOT]	Lists the directories on the Micro SD Card
Filename	xxx.yyy xxx_####.yyy	Displays the name of the selected media file. Animation filenames include an underscore followed by three or more digits. The number of frames, and duration in seconds, is displayed in brackets after the filename. Updated when a new Directory is selected in the **Directory** menu. Provides a list of all the media files in the currently selected directory. Note that animations appear as a single entry.
	[NONE]	Selecting this option clears the logo channel. This item is automatically selected, without clearing the channel, when the user switches to a new directory
File List	Rescan	Pressing the button updates: the Directory menu options and the Filename menu options
SD Card Status (read-only)	x of #GB used	Reports the amount of memory used on the Micro SD card
Mediastore Memory (read-only)	xMB of 2GB used	Reports the amount of memory used by the Mediastore
Image Properties		
X Position	## to ##[a]	• Adjusts the position of the image along the X-axis in number of pixels • The range varies depending on the output video format
Y Position	## to ##[a]	• Adjusts the position of the image along the Y-axis in number of pixels • The range varies depending on the output video format
Animation Properties		
Auto Play[b]	Selected*	The animation starts to play when a transition occurs
	Cleared	The animation starts playing as soon as the animation is loaded to the bus

Table 17.16 Logo — Logo # Tabs

Item	Parameters	Description
Looping[c]	Selected*	The animation starts over when it reaches the last frame of the animation
	Cleared	The animation stops when it reaches the last frame of the animation
Hold Time[d]	#	The animation plays but before looping back (if looping is enabled), it pauses on the last frame, for the specified number of frames.

a. The default value is 0 which represents the top-left corner of the active picture area.
b. This option is only applicable when an animation file is selected.
c. This option is only applicable when an animation file is selected.
d. The default value is 0.

Control Panel

This area is used to select the video sources for each bus. Each crosspoint button will display the name of its source on the button face.

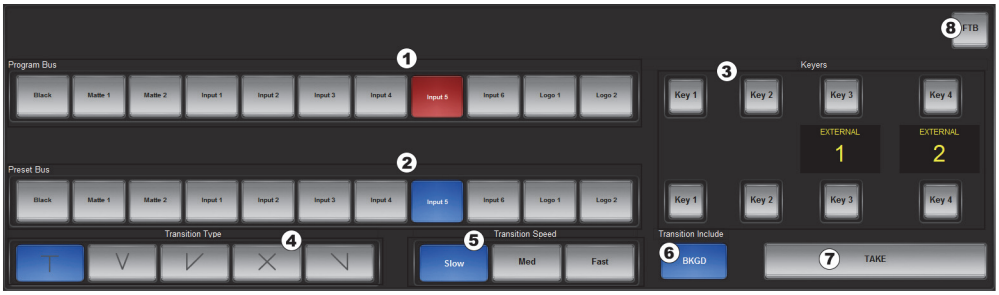


Figure 17.4 Example of the Control Panel

1. Program Bus

The Program Bus is used to select the video source that will display as the Background on the Program output.

2. Preset Bus

The Preset Bus is used to select the video source that displays on the Preview output.

3. Keyers Area

The Keyer Area enables you to add, or remove, keyers in transitions. This area includes the following controls:

The top row of buttons, labeled Key 1-4 and lit in red, are used to perform cuts on the specified keyer directly on the Program Bus, without affecting their inclusion in the next transition. A lit button indicates that the specified keyer is currently on-air.

The bottom row of buttons, labeled Key 1-4 and lit in blue, are used to add, or remove, the specified keyer to the next transition. Selecting the button toggles the keyer on/off and selects/removes the keyer to the Preset Bus respectively. Once the transition is executed, and depending on the Configuration > Transitions > Post Transition Behavior setting, the button(s) are no longer lit in this row but are lit red in the top row.

4. Transition Type Buttons

The following Transition Type buttons are available (from left to right):

›  (Cut) — Select this button to perform a cut transition from one source to the next.

›  (V-Fade) — Select this button to perform a V-Fade transition from the Program source to Black to the Preset source. The GATOR-KEY fades down from one source to black and then transitions to the next source. During a hot-punch transition, the video performs a CUT while the audio performs a V-Fade.

›  (Cut-Fade) — Select this button to perform a cut to black, then fade up to the next source.

›  (Cross Fade) — Select this button to perform a gradual fade from one source to the next. The GATOR-KEY performs a cross fade between sources. Note that this button is selected after performing a factory default reset.

›  (Fade-Cut) — Select this button to fade from one source to black and then cut to the next source.

5. Transition Speed Buttons

These buttons apply the rate (slow, medium, fast) to the next transition. The transition rates are specified in the **Home** tab.

✶ The **Slow** button is selected after performing a factory default reset.

✶ If you are controlling the GATOR-KEY via Automation, and these buttons are not lit, the transition rate applied is set by the Automation command. If you wish to apply one of these rates, remember to select the required transition speed button before performing a transition (e.g. selecting TAKE).

6. Transition Include Button

This button is used to add/remove the Preset source to/from the next transition. Toggling this button will immediately affect the video that is visible on the Preset output.

7. TAKE Button

Selecting the **TAKE** button performs the transition between the sources and effects selected in the Program and Preset buses, using the specified Transition Type and Transition Speed.

8. FTB Button

Use this button to fade the Program bus to black. The Fade to Black (FTB) rate is specified in the Home tab. After performing a factory default reset, this button is toggled off (unlit).

Technical Specifications

This chapter provides technical information for GATOR-KEY.

✶ Specifications are subject to change without notice.

Supported Video Formats

Table 18.1 Technical Specifications — Supported Video Formats

Resolution (lines)	Frame Rate (Hz)
720p	50
	59.94
1080i	50
	59.94
1080p	50
	59.94
2160p	50
	59.94

SDI Inputs Specifications

Table 18.2 Technical Specifications — SDI Inputs

Item	Specifications
Number of Inputs	4
Standards Accommodated	1.485Gbps Component, SMPTE 292M
	2.97Gbps Component, SMPTE 424M
	5.94Gbps Component, SMPTE 2081
	11.88Gbps Component, SMPTE 2082
Impedance	75ohm
Return Loss	>15dB to 1.485Gbps
	>10dB to 2.97Gbps
	>7dB to 5.94Gbps
	>4dB to 11.88Gbps
Equalization (Belden 1694A cable)	>220m (722ft) @ 1.485Gbps
	>140m (459ft) @ 2.97Gbps
	>50m (190ft) @ 11.88Gbps
Connection	HD-BNC

SDI Outputs Specifications

Table 18.3 Technical Specifications — SDI Outputs

Item	Specifications
Number of Outputs	4
Impedance	75ohm
Return Loss	>15dB to 1.485Gbps
	>10dB to 2.97Gbps
	>7dB to 5.94Gbps
	>4dB to 11.88Gbps
Signal Level	800mV ±10%
DC Offset	0V ±50mV
Rise and Fall Time (20-80%)	1.485Gbps: <270ps, <100ps difference
	2.97Gbps: <135ps, <50ps difference
	5.94Gbps: <80ps, <30ps difference
	11.88Gbps: <45ps, <18ps difference
Jitter	1.485Gbps: <1.0UI jitter measured 10Hz-100kHz, <0.2UI above 100kHz
	2.97Gbps: <1.0UI jitter measured 10Hz-100kHz, <0.3UI above 100kHz
	5.94Gbps: <2.0UI jitter measured 10Hz-100kHz, <0.3UI above 100kHz, band limit @594MHz
	11.88Gbps: <2.0UI jitter measured 10Hz-100kHz, <0.3UI above 100kHz, band limit @1188MHz
Overshoot	<10% (11.88Gpbs: <15%)
Connection	HD-BNC

Environment

Table 18.4 Technical Specifications — Environment

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

Power

Table 18.5 Technical Specifications — Power

Item	Specifications
Maximum Power Consumption	40W-80W (application dependent)

Service Information

Routine maintenance to this openGear product is not required. In the event of problems with your card, the following basic troubleshooting checklist may help identify the source of the problem. If the frame still does not appear to be working properly after checking all possible causes, please contact your openGear products distributor, or the Technical Support department at the numbers listed under the "**Contacting Technical Support**" on page 12.

1. **Visual Review** — Performing a quick visual check may reveal many problems, such as connectors not properly seated or loose cables. Check the card, the frame, and any associated peripheral equipment for signs of trouble.
2. **Power Check —** Inspect the power indicator LED on the distribution frame front panel 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. Confirm that the power supplies are fully seated in their slots. 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.

Reloading the Software on the Card

In the unlikely event of a complete card failure, you may be instructed by a Ross Technical Support specialist to perform a complete software reload on the card.

To reload the software on the card

1. Eject the card from the frame.
2. Press and hold the **Bootload** button, while re-inserting the card into the frame.
3. Release the button.
   - The **OK/ERROR** LED flashes green while the card is waiting for a new software load.
   - If a new software load is not sent to the card within 60 seconds, the card will attempt to re-start with its last operational software load.
   - Software loads can be sent to the card via the connection on the rear of the frame.

Warranty and Repair Policy

The GATOR-KEY is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of FIVE (5) years from the date of shipment from our factory. In the event that your card 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 card 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 FIVE (5) year warranty period.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profits) incurred by the use of this product. Implied warranties are expressly limited to the duration of this warranty.

This User Manual provides all pertinent information for the safe installation and operation of your openGear product. Ross Video policy dictates that all repairs to the card 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 card, 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 card. If required, a temporary replacement frame 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.

Software Licenses

This chapter provides third-party software license information for your GATOR-KEY. This product includes multiple software components which are individually licensed under one or more of the following licenses included in this chapter.

BSD

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For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If

such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

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zlib

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The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files ftp://ds.internic.net/rfc/rfc1950.txt (zlib format), rfc1951.txt (deflate format) and rfc1952.txt (gzip format).

Glossary

The following terms are used throughout this guide:

Active image — the portion of the video picture area (production aperture) that is being utilized for output content. Active image excludes letterbox bars and pillarbox bars.

Auto Select Key — a key in which two video signals are required to insert the key. The Key Alpha is used to cut the hole in the video, and the Key Video is used to fill that hole.

Card — openGear terminal devices within openGear frames, including all components and switches.

DashBoard — the DashBoard Control System.

DTVCC captions — CEA-708 captions.

Frame — the openGear frame that houses the GATOR-KEY unless otherwise noted.

HTTP — Direct Hypertext Transfer Protocol.

LTC — Linear Timecode.

MIB — management information base.

Network Controller Card — the MFC-OG3-N and any available options unless otherwise noted.

NTSC captions — the CEA-608-D: Line 21 Data Services captions.

openGear Frame — refers to the OG3-FR series and OGX-FR series frames unless otherwise noted.

PAL — PAL-B and PAL-G unless otherwise noted.

Production aperture — the image lattice that represents the maximum possible image extent in a given standard (e.g. the full size of all active pixels and active lines). For example, the 1080i production aperture would be 1920x1080.

Self Key — a key in which the luminance, or brightness, values of the key source is used as the alpha for hte key.

System— the mix of interconnected production and terminal equipment in your environment.

TCP — Transmission Control Protocol.

TTL — Time To Live.

UDP — User Datagram Protocol.

User — the person who uses the GATOR-KEY.

VGPI — Virtual GPI feature of the Miranda™ Presmaster Automation protocol.