



DETOUR User Guide

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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.



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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.)*

DETOUR · User Guide

- Ross Part Number: **9201DR-104-03**
- Release Date: December 12, 2018.

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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.

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

United States of America 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 device complies with Canadian ICES-003 and part 15 of the FCC Rules.

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

FCC/ICES Class A

This Class A device complies with Canadian ICES-003 and part 15 of the FCC Rules. Operation is subject to the following conditions: 1) This device may not cause harmful interference and, 2) This device must accept any interference received, including interference that may cause undesirable operation.

EUROPE

This equipment is in compliance with the essential requirements and other relevant provisions of **CE Directive 93/68/EEC**.

AUSTRALIA

This equipment has been tested to **AS/NZS CISPR 22:2009 + A1:2010** and found to comply with the limits for a Class A Digital device.

INTERNATIONAL

This equipment has been tested to **CISPR 22:2008** 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 GearLite 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 on the last page of this manual. All GearLite products are covered by a generous 3-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.

Company Address

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Introduction

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

- “**Introduction**” summarizes the guide and provides important terms, and conventions.
- “**Before You Begin**” provides an overview of the DETOUR features.
- “**Installation**” describes the DETOUR hardware, physical connections, and provides instructions for the basic physical installation of the DETOUR in your system.
- “**Configuration**” provides information on the setup requirements for the DETOUR.
- “**DashBoard Menus**” provides a brief summary of the DashBoard menus available for DETOUR.
- “**Warranty and Repair**” provides information on the warranty and repair policy for your DETOUR.
- “**Technical Specifications**” provides the technical specifications for your DETOUR.

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 **Edit** dialog, 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

Italic text is used to identify the titles of referenced guides, manuals, or documents. For example:

For more information, refer to the *DAC-9516 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 select the **File** menu and then select **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 DETOUR.

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 DETOUR, contact us at the numbers listed in “**Contacting Technical Support**” on page 7. Our technical staff is always available for consultation, training, or service.

Overview

DETOUR is a 12G capable point of use distribution amplifier with relay bypass. The bypass relay allows the unit to be used as a failsafe device to provide guaranteed on-air service in the case of a power failure.

DETOUR provides four active SDI outputs. This adds cable reach, signal conditioning and re-timing to MADI, SD-SDI, HD-SDI, 3G-SDI and UHD-SDI signals.

A micro USB port provides an additional power source connection and may be configured as the alarm state detection method. This is particularly useful when coupled with an Ultrix router. If Ultrix loses power, then the USB connection between Ultrix and DETOUR can trigger the bypass state.

Four LED indicators show the alarm state, signal presence, USB power and main external power.

Simplified Block Diagram

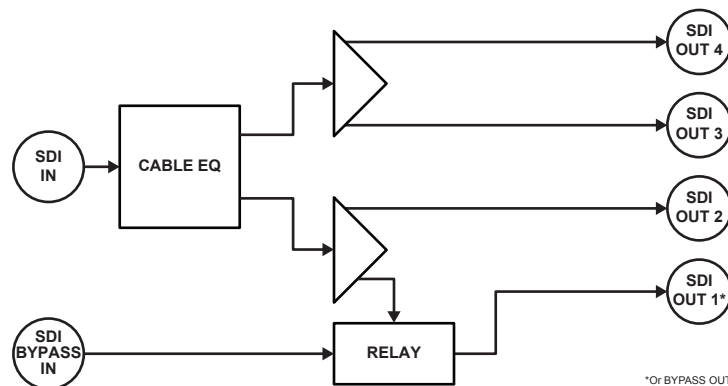


Figure 2.1 Simplified Block Diagram of DETOUR Workflow

Features

DETOUR includes the following features:

- HD-BNC connectors enabling optimal signal quality
- Supports SDI data rates 270Mbps to 11.88Gbps
- Support for MADI audio transport
- Provides one micro USB port for power/fault detection
- Alarm general purpose output
- On-air failsafe operation in the event of power failure or primary input signal loss
- Dual power supply (USB and/or 5V universal adapter)
- Configure and monitor via DashBoard
- Small brick form factor
- 3-year warranty

Operation

DETOUR has built in hysteresis mitigating bypass relay ‘chattering’ as a result of bypass error conditions coming and going. DETOUR offers two modes for the bypass relay logic: Fast Recovery and Standard Failover.

Fast Recovery Mode

The bypass relay acts immediately on the first two bypass error condition state changes (e.g. error, error cleared), then applies a user-configurable timer to prevent multiple state change triggers. (**Figure 2.2**)

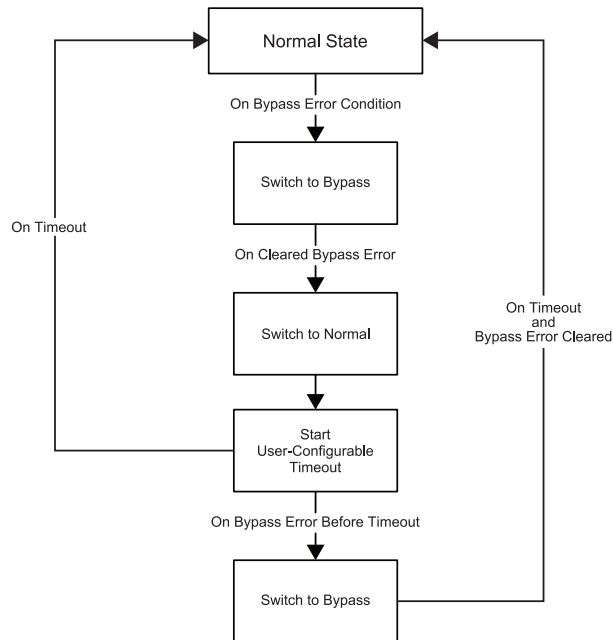


Figure 2.2 DETOUR — Fast Recovery Mode Workflow

Standard Failover Mode

The bypass relay acts immediately on the first bypass error condition state change, then applies a user-configurable timer before acting on further error condition state changes. (**Figure 2.3**)

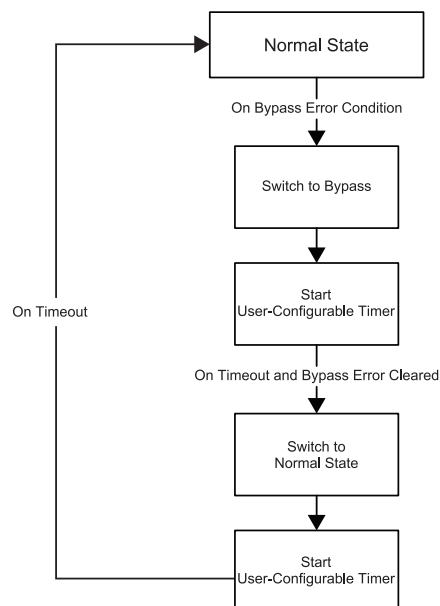


Figure 2.3 DETOUR — Standard Failover Mode Workflow

Installation

This chapter provides information on the DETOUR hardware components and instructions for the basic physical installation of the DETOUR in your system.

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.*

Power Adapter and Supply

DETOUR may be powered from its USB connector¹, or an external 5V power supply. However, DETOUR operation is dependent on the connected power source (or absence thereof) as follows:

- OUT 1 and failsafe operation is available when either power source is connected. DETOUR functions as a reclocker with relay bypass.
- OUT 2, 3 and 4 are available for use when the external 5V power source is connected. DETOUR functions as 1x4 Reclocking DA with relay bypass.
- When no power is available to DETOUR from either USB or external sources, the relay bypass allows the BYPASS IN signal to connect to OUT 1.

Connecting to a 5V PSU

Connect the PS-9000 power adapter to the power supply connector. The PS-9000 provides regulated +5V DC (5%) @ up to 2A. The DC power cord has a locking connector that securely fastens into the power supply DC jack on the DETOUR. The DETOUR has a standard miniature power jack (center pin positive). Refer to the document “**Important Regulatory and Safety Notices to Service Personnel**” that accompanied your module for details.

Using the USB as the Power Source

Connect the DETOUR to a USB Power Source via the mini-B connector on the DETOUR chassis.

- ★ Ensure that the USB Power Source supports the power consumption requirements listed in **Table 7.5** on page 31.

1. OUT 2, 3, and 4 are not available when operating on USB power only.

Cable Connections Overview

There are ten connections to the DETOUR:

- One HD-BNC jack for the SDI input
- One HD-BNC jack for the SDI Bypass input
- One HD-BNC jack for each SDI output
- One 10/100 Ethernet RJ45 jack
- One GPIO alarm connector
- One USB mini-B connector
- A power supply connection to the GearLite PS-9000 power adapter

Figure 3.1 and **Figure 3.2** illustrate the connection locations on the chassis.

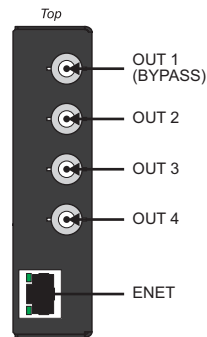


Figure 3.1 SDI Output and ENET Connections

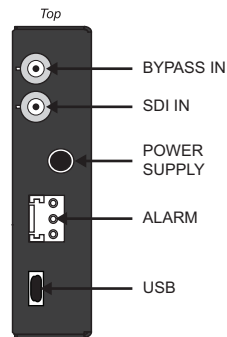


Figure 3.2 Inputs and Power Connections

SDI IN Connection

Connect the main SDI source to the SDI IN HD-BNC. This signal is equalized for cable effects and buffered to OUT 1-4.

If the input source is successfully detected, the SDI IN LED will light solid green.

BYPASS IN Connection

There is a power fail relay from the BYPASS IN HD-BNC to OUT 1. The purpose of this relay is as follows:

- If the DETOUR loses power, the video still passes through.
- When the DETOUR boots, the relay will be left in Bypass mode until the DETOUR can generate a valid output. Once the DETOUR is up and functional, the relay is disabled.

Connect the bypass SDI source to the BYPASS IN HD-BNC. This signal is passively linked to OUT 1 when in the alarm state. You may want to provide a valid input of the desired output format on BYPASS IN.

SDI OUT Connections

Connect the main SDI output destination to the OUT 1 HD-BNC. Normally an active equalized and buffered version of the SDI IN signal. In an alarm state, this is connected to the SDI BYPASS IN signal.

OUT 2, 3 and 4 are the active equalized and buffered version of the SDI IN 1 HD-BNC.

★ OUT 2, 3, and 4 are not available when operating on USB power only.

ENET Connection

Optionally, there is an 10/100 Ethernet port for connecting to your facility network. This connection is used to communicate with a DashBoard client for configuration and monitoring purposes.

- ★ Connect DETOUR to the same network as your DashBoard client computer or to a network that has a route to the network your DashBoard client computer is on.

USB Connection

The micro USB connection is used for alarm detection and as a limited power input source.

Alarm Connection

The ALARM port is a general purpose output that provides contact closure alarm state monitoring. Under normal operation, the Center pin (2) is connected to Pin1 (normally closed). An alarm condition connects pin 2 to pin 3.

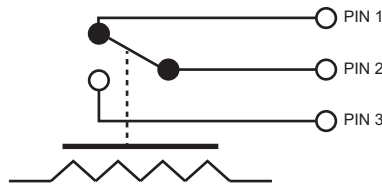


Figure 3.3 De-energized or Alarm State Equivalent Circuit

Refer to **Figure 3.4** and **Table 3.1** for the pinout assignment of the ALARM port on the chassis.

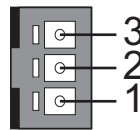


Figure 3.4 ALARM Port on DETOUR — Pinout Assignment

Table 3.1 Alarm Pinouts

Pin Number	Function
1	Normally closed
2	Common
3	Normally open

Refer **Figure 3.5** to for the signal pinouts for the 3-pin connector plug.

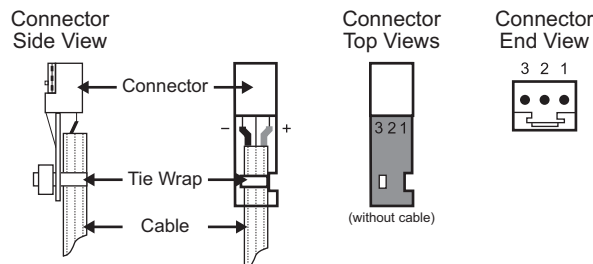


Figure 3.5 Connector Plug — Pinouts for Alarm Port

Status LEDs

The chassis faceplate of the DETOUR includes LEDs that display the status of power, SDI input, and communication activity.

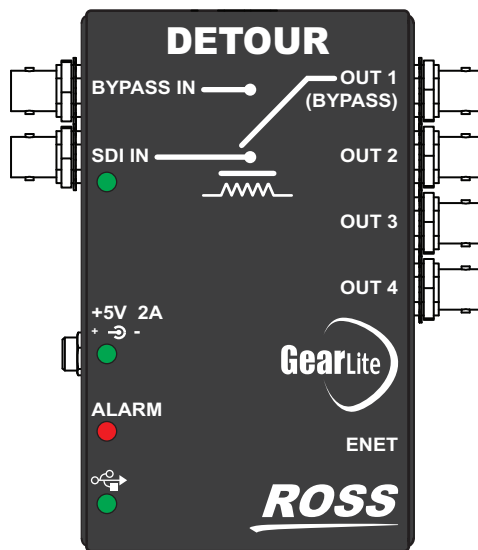


Figure 3.6 DETOUR Chassis Status LEDs

Table 4 describes the status LEDs available on the DETOUR.

Table 4 Status LED Descriptions

LED	Color	Function
SDI IN	Green	When the LED is continually lit when the DETOUR determines that there is a valid SDI signal on the input HD-BNC.
	Off	When unlit, this LED indicates the DETOUR is not locked to a valid SDI signal.
+5V 2A	Green	When this LED is <i>continually lit</i> green, the DETOUR is receiving +5VDC on the POWER (DC) port of its chassis.
	Off	When this LED is unlit, the POWER port is not receiving power.
ALARM	Red	When lit red, this LED indicates that the unit is experiencing an error condition and is in Bypass mode.
	Off	When unlit, this LED indicates that the unit is operating correctly without errors.
USB	Green	When lit green, this LED indicates that a +5VDC power source is detected on the micro USB port.
	Off	When unlit, this LED indicates that the micro USB port is currently not connected to a power source.

Configuration

DETOUR groups the configuration and monitoring features in a Tree View in the DashBoard client window.

Using DashBoard

DashBoard must run on a computer that has a physical wired ethernet connection. Wireless connections do not allow device discovery. The DashBoard software and user manual are available from the Ross Video website.

For More Information on...

- installing the DashBoard client software, refer to the ***DashBoard User Manual***.

To launch DashBoard

1. Ensure that you are running DashBoard software version 8.1 or higher.
2. Launch DashBoard by double-clicking its icon on your desktop.

Using Walkabout to Assign the Initial IP Address to DETOUR

Once DETOUR is physically installed and cabled to your facility network, you will need to assign it an initial static IP Address to enable DashBoard to locate it on your network. Establishing an initial IP Address enables DashBoard to communicate with DETOUR and update the Basic Tree View with the DETOUR node.

- ★ Contact your IT Department before connecting DETOUR 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 DETOUR.

To assign the initial static IP address for DETOUR

1. Launch DashBoard.
2. From the DashBoard client main toolbar, select **File > Show Walkabout**.
The DashBoard window displays the **Walkabout** table.
3. Click **Refresh**, located at the bottom of the Walkabout table, to ensure the list in the Walkabout table is current.
4. In the **Walkabout** table, find the entry for the DETOUR you want to configure.
5. Use the **Name** field to assign a unique identifier to the DETOUR module. This will be the name displayed in the Tree View of DashBoard.
- ★ After you edit a setting in the **Walkabout** table, it is recommended to wait up to 1 minute, then click **Refresh** to apply the new setting.
6. Use the **Address** field to specify the IP Address supplied by your IT Department for this device. By default, each DETOUR is shipped with the IP Address set to 192.168.20.121.
7. Ensure the **Network** field is set to match your network requirements.
8. Use the **Gateway** field to specify the IP Address for your gateway for connection outside of the local area network (LAN).
9. Click **Reboot** in the row of the **Walkabout** table for the DETOUR.

Adding DETOUR to the Tree View in DashBoard

Once you have assigned DETOUR a static IP Address, you can then manually add it to the Tree View in DashBoard. Manually adding DETOUR displays its node in the Tree View, granting you access to its configuration and monitoring interfaces.

To manually add DETOUR to the Tree View in DashBoard

1. In the Basic Tree View toolbar of DashBoard, click .

The **Select Equipment or Service Type to Add** dialog opens.

2. Expand the **openGear/DashBoard Connect** node.
3. Select **TCP/IP DashBoard Connect or openGear Device**.
4. Click **Next >**.

The **TCP/IP DashBoard Connect/openGear Device** dialog opens.

5. Select the **JSON** radio button as the **Protocol**.
6. In the **IP Address** field, enter the IP Address for the DETOUR that you configured in the procedure “**To assign the initial static IP address for DETOUR**” on page 15.
7. Perform one of the following steps:
 - In the text fields provided, enter the display name for the DETOUR, and port of the module you wish to add.
 - Click **Detect Frame Information** to automatically retrieve the connection details.
8. Click **Finish**.

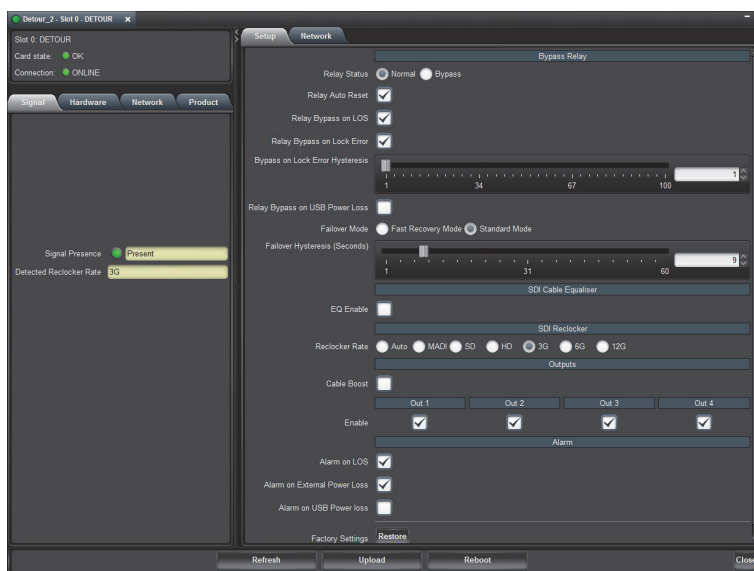
The DETOUR displays in the Tree View.

Accessing the DETOUR Interfaces in DashBoard

The DETOUR interfaces are accessed by double-clicking the DETOUR node in the DashBoard Tree View and selecting the appropriate tab in the Device View window. By default, the interfaces (tabs) are organized into status tabs (on the left), and configuration tabs (on the right).

To access the DETOUR interfaces in DashBoard

1. Locate the DETOUR in the Tree View of DashBoard.
2. Expand the DETOUR node in the Tree View.
3. Double-click the **Slot 0: DETOUR** sub-node to display the tabs in the **Device View** of the DashBoard window.
4. Click a tab to displays its contents.



Updating the Network Settings for DETOUR

Once you establish initial communications with the DETOUR, and it displays in the DashBoard Tree View, you may wish to review or change the IP Address and other settings according to your facility network requirements.

★ This section is not applicable if your DETOUR is already set to the correct IP Address.

To update the network settings for the DETOUR

1. Locate the DETOUR node in the Tree View of DashBoard.
2. Double-click the DETOUR node.
3. Select the **Network** tab in the far-right of the DashBoard window.
4. Use the **IP Address** field to specify the new static IP Address for the DETOUR.
5. Use the **Subnet Mask** field to specify the Subnet Mask for your network.
6. Use the **Default Gateway** field to specify the gateway for communications outside of the LAN.
7. Click **Apply**.

Re-naming DETOUR in the DashBoard Tree View

By default, DETOUR ships with the name “DETOUR” automatically set. Each DETOUR can be given a unique name that is used on internal menus and as the identifier in the tree views of DashBoard.

To re-name DETOUR in DashBoard

1. From the **Device View**, select the **Network** tab.
2. Enter a unique identifier in the **Device Name** field for your DETOUR. This name displays in the Tree View and the Device Name in the Product Status tab for the module.
3. Click **Apply** to save the new settings.

Configuring the Bypass Relay

DETOUR includes a bypass relay between BYPASS IN and OUT 1. This protects your on-air feed when the module is off-line and ensures critical program content is not lost. The bypass relay can be enabled or disabled via the options in DashBoard.

To configure the bypass relay

1. From the **Device View**, select the **Setup** tab.
2. Use the **Relay Status** options to specify an operating mode for DETOUR. Choose from the following:
 - **Normal** — DETOUR is not in Bypass mode (the bypass relay is disabled). The input signal available on the SDI IN HD-BNC is used.
 - **Bypass** — DETOUR is in Bypass mode. The input signal available on the BYPASS IN HD-BNC is used.
3. Select the **Relay Auto Reset** box to enable DETOUR to automatically switch to Normal mode when a valid input signal is detected on the SDI IN HD-BNC.
4. Select the **Relay Bypass on LOS** box to enable DETOUR to automatically switch to Bypass mode when a loss of input signal is detected on the SDI IN HD-BNC.
5. Select the **Relay Bypass on Lock Error** box to enable DETOUR to automatically switch to Bypass mode when:
 - the SDI reclocker loses lock; or
 - the reclocker rate is fixed to a different standard than is currently being received. Refer to the section refer to the section “Configuring the Reclocker” on page 18 for details on setting the rate.

- ★ The Relay Bypass on Lock Error feature has an adjustable time out hysteresis to prevent a bypass on every lock error. The hysteresis may be varied in sensitivity to prevent bypass relay “chattering” on a signal that contains noise that makes it difficult for the reclocker to lock to. Set the slider to 1 for very sensitive, or to 100 for less sensitive.
6. Select **Bypass on USB power loss** box to enable DETOUR to automatically switch to Bypass mode when the power from the USB connection is lost.
 7. Select a **Failover mode** to specify how DETOUR responds to multiple bypass error trigger events. Refer to the section “**Setup Tab**” on page 23 for details.
 8. Use the **Failover Hysteresis** slider to specify the number of seconds that DETOUR uses for the timeout to prevent multiple bypass error trigger events.

Configuring the Equalizer

You can choose to enable or bypass the equalizer for the SDI input. The equalizer enables DETOUR to compensate for noise and signal losses inherent in long coaxial cable runs.

- ★ You must bypass the equalizer when using signals of less than 125Mbps (such as SMPTE 310 signals). For signals 125Mbps and greater (such as SDI signals), you must enable the equalizer.

To configure the equalizer

1. From the **Device View**, select the **Setup** tab.
2. Select the **EQ Enable** box.

The box displays a check-mark.

To bypass the equalizer

1. From the **Device View**, select the **Setup** tab.
2. Clear the **EQ Enable** box.

The box does not display a check-mark. The EQ settings are not applied to the SDI input.

Configuring the Reclocker

This section summarizes how to select a data rate for the reclocker. This enables the DETOUR to reclock at a specific data rate or automatically detect and reclock the data rate. It also sets the input signal type that the DETOUR will process. Note that reclocking does not convert the signal, it selects the appropriate signal slew rate only. The reclocking outputs are only active when they are enabled and DETOUR is not in bypass mode.

To enable the reclocker

1. From the **Device View**, select the **Setup** tab.
2. Use the **Reclocker Rate** options to specify a data rate. Choose from the following:
 - **Auto** — The DETOUR reclocks at the detected rate on the SDI input automatically.
 - **MADI** — The DETOUR is set to reclock at MADI data rate of 125Mbps only. This is the required setting when using MADI signals.
 - **SD** — The DETOUR is set to reclock at a data rate of 270Mbps.
 - **HD** — The DETOUR is set to reclock at a data rate of 1.485Gbps.
 - **3G** — The DETOUR is set to reclock at a data rate of 2.97Gbps.
 - **6G** — The DETOUR is set to reclock at a data rate of 5.94Gbps.
 - **12G** — The DETOUR is set to reclock at a data rate of 11.88Gbps.

Configuring the Outputs

If you have an unused output, it is recommended to disable the output via the **Setup** tab in DashBoard.

To disable an output

1. From the **Device View**, select the **Setup** tab.
2. Locate the **OUTPUTS** area located near the bottom of the **Setup** tab.
3. Clear the **Enable** box for the output you wish to disable.

The box does not display a check-mark.

To enable the cable boost

1. From the **Device View**, select the **Setup** tab.
2. Locate the **OUTPUTS** area located near the bottom of the **Setup** tab.
3. If the DETOUR is driving long cable lengths or patch bays, select the **Cable Boost** box to add a pre-emphasis to the output signal.

The box displays a check-mark.

Configuring the LOS Alarm

DETOUR provides options for monitoring the input signal status, and the power supplies. You can choose to enable or disable these alarms as required.

The input signal status is displayed on the DETOUR DashBoard node and well as in the Card State field on the main Detour Configuration tab. An alarm condition will also trigger the general purpose interface (GPI) state.

Enabling the LOS Alarm in DashBoard

When enabled, this feature will indicate an alarm condition (red) in the corresponding **Device Status** field of the **Hardware** tab in DashBoard. This occurs if the DETOUR does not detect a valid input signal on the SDI IN 1 HD-BNC.

To enable the alarm for an invalid input signal

1. From the **Device View**, select the **Setup** tab.
2. Select the **Alarm on LOS** box.

The box displays a check-mark.

Enabling the Power Loss Alarms

You can power the DETOUR chassis via the DC jack or the USB port, and enable DashBoard to monitor the power supply and report an error condition should a loss of power occur on the specified power supply port.

For More Information on...

- connecting an external power supply, refer to the section “**Power Adapter and Supply**” on page 11.
- the USB port, refer to the section “**USB Connection**” on page 13.

Enabling the External Power Loss Alarm

When enabled, this feature will indicate an alarm condition (red) in the **External Power** field of the **Hardware** tab in DashBoard. This occurs if the DETOUR does not detect a valid external power supply is connected and supplying +5V on the DC jack.

To enable the alarm for the external power supply

1. From the **Device View**, select the **Setup** tab.
2. Select the **Alarm on External Power Loss** box.

The box displays a check-mark.

Enabling the USB Power Loss Alarm

When enabled, this feature will indicate an alarm condition (red) in the corresponding **USB Power** field of the **Hardware** tab in DashBoard. This occurs if the DETOUR does not detect a valid power supply signal on the USB port.

To enable the alarm for a USB Power Loss

1. From the **Device View**, select the **Setup** tab.
2. Select the **Alarm on USB Power Loss** box.

The box displays a check-mark.

Loading the Factory Defaults

If required, DETOUR menu parameters can be reset to the factory default values using the option available in DashBoard. Refer to the chapter “**DashBoard Menus**” on page 21 for information on the defaults.

To reset DETOUR to the factory default configuration in DashBoard

1. From the **Device View**, select the **Setup** tab.
2. Click Factory Settings **Restore** to display the **Confirm** dialog.
3. Perform one of the following steps:
 - Click **Yes** to load the factory defaults; or
 - Click **No** to cancel the load and close the dialog.

Software Upgrades

The DETOUR can be upgraded in the field via DashBoard. Note that DashBoard version 8.0 or higher is required.

To upgrade the software on DETOUR

1. Contact Ross Technical Support for the latest software version file.
2. Double-click the **DETOUR** indicator in the Basic Tree View.
3. From the Device View, click **Upload** to display the Select file for upload dialog. This button is located at the bottom of the DETOUR interface in the DashBoard window.
4. Navigate to the *.bin upload file you wish to upload.
5. Click **Open**.
6. Click **Finish** to display the **Uploading to Selected Devices** dialog.
7. Monitor the upgrade via the **Uploading to Selected Devices** dialog.
8. Click **OK** to complete the upgrade.

DETOUR is temporarily taken off-line during the re-boot process. The process is complete once the status indicators for the Card State and Connection fields return to their previous status.

DashBoard Menus

This chapter provides a brief summary of the DashBoard menus available for DETOUR. Default values are indicated with an asterisk (*).

Some tabs in DashBoard display read-only fields with indicators. The indicators vary in severity from green (valid), yellow (caution), to red (alarm). DashBoard reports the most severe alarm for a single field. Indicator colors are noted within the tables as text set in parentheses next to the menu parameter.

Signal Tab

Table 5.1 outlines the read-only fields displayed in the **Signal** tab.

Table 5.1 Signal Tab

Parameters	Description
Signal Presence	
Present (Green)	A valid input signal is connected to the SDI IN HD-BNC
Missing (Yellow)	The Alarm on LOS box is not selected on the Alarms tab; the SDI IN HD-BNC is not monitored.
Missing (Red)	A valid input signal is not detected on the SDI IN HD-BNC
Detected Reclocker Rate	
Unlocked	An input signal is present, but not locked
MADI	The reclocker is set to 125Mbps
SD	The reclocker is set to 270Mbps
HD	The reclocker is set to 1.485Gbps
3G	The reclocker is set to 2.97Gbps
6G	The reclocker is set to 5.94Gbps
12G	The reclocker is set to 11.88Gbps

Hardware Tab

The **Hardware** tab provides an overview of the DETOUR power supplies and overall status. Note that some alarms must be enabled in the **Setup** tab before the fields in the **Hardware** tab can report the related error messages.

Table 5.2 outlines the read-only information displayed in the **Hardware** tab.

Table 5.2 Hardware Status

Parameters	Description
External Power	
Present (Green)	A valid external power supply is connected to POWER port on the DETOUR chassis
Missing (Yellow)	The Alarm on External Power Loss box is not selected on the Alarms tab; the POWER port on the DETOUR chassis is not monitored

Table 5.2 Hardware Status

Parameters	Description
Missing (Red)	An absence of an external power supply or the voltage is <0.8V. Power is supplied via the USB Port only.
USB Power	
Present (Green)	The power supply for the DETOUR chassis is connected via the USB port.
Missing (Yellow)	The Alarm on USB Power Loss box is not selected on the Alarms tab; the USB port on the DETOUR chassis is not monitored.
Missing (Red)	A valid power source is not connected to the USB port; power is supplied via the POWER port only.

Network (Status) Tab

The **Network (Status)** tab provides an overview of the current network settings and active connection list for DETOUR. This tab is located next to the Product tab in the left pane of the DashBoard window.

Table 5.3 outlines the read-only information displayed in the **Network** tab.

Table 5.3 Network (Status) Tab

Item	Parameters	Description
IP Address	###.###	Indicates the IP address assigned to this DETOUR
Subnet Mask	###.###	Indicates the subnet mask assigned to this DETOUR
Default Gateway	###.###	Indicates the gateway for communication outside of the local area network (LAN)
Active Connections	#	Indicates the number of external control devices, such as DashBoard clients, connected via TCP to this DETOUR

Product Tab

Table 5.4 outlines the read-only information displayed in the **Product** tab.

Table 5.4 Product Tab

Item	Parameters	Description
Device Name	DETOUR	Indicates the unique identifier as defined by the user in the Network tab
Product	DETOUR	Displays the model
Supplier	Ross Video Ltd.	Indicates the manufacturer of your module
Board Rev	#	Indicates the version of the PCB
Board S/N	#	Indicates the serial number assigned to your module
MAC Address	#	Indicates the MAC Address for the module
Software Rev	#	Indicates the software version installed on your module

Setup Tab

The **Setup** tab provides options for configuring the bypass relay, setting up the equalizer and reclocker features, enabling outputs, and selecting which alarms are monitored.

Table 5.5 outlines the menus and parameters displayed in the **Setup** tab.

Table 5.5 Setup Tab

Item	Parameters	Description
Relay Status	Normal	Disables the bypass relay. The input signal available on the SDI IN HD-BNC is used.
	Bypass	Sets DETOUR into Bypass mode. The input signal available on the BYPASS IN HD-BNC is used.
Relay Auto Reset	Selected*	After a loss of input and when a valid input signal is detected on the SDI IN HD-BNC, DETOUR automatically switches to Normal mode.
	Cleared	DETOUR continues to use the signal detected on the BYPASS IN HD-BNC even if a valid signal is detected on the SDI IN HD-BNC.
Relay Bypass on LOS	Selected*	When a valid signal is not detected on the SDI IN HD-BNC, the signal detected on the BYPASS IN HD-BNC is used.
	Cleared	Disables this feature.
Relay Bypass on Lock Error	Selected	DETOUR automatically switches to Bypass mode when the SDI reclocker loses lock; or the reclocker rate is fixed to a different standard than is currently being received.
	Cleared*	Disables this feature.
Bypass on Lock Error Hysteresis	1-100	Specifies the amount of lock loss errors per 100ms interval. Set the slider to 1 for very sensitive, or to 100 for less sensitive.
Relay Bypass on USB Power Loss	Selected	DETOUR automatically switches to Bypass mode when the power from the USB connection is lost
	Cleared*	Disables this feature
Failover Mode	Fast Recovery Mode*	DETOUR returns to normal operation once the bypass error condition is cleared
	Standard Mode	DETOUR waits (the number of seconds set by the Failover Hysteresis slider) in a timeout before returning to normal operation
Failover Hysteresis (Seconds)	1-60	Specifies the number of seconds used for a timeout; used in conjunction with the Failover Mode options
EQ Enable	Selected*	Enables Detour to compensate for noise and signal losses inherent in long coaxial cable runs
	Cleared	Disables this feature

Table 5.5 Setup Tab

Item	Parameters	Description
Reclocker Rate	Auto*	DETOUR automatically detects the incoming data rate and sets the reclocker to it
	MADI	Reclocker is set to 125Mbps
	SD	Reclocker is set to 270Mbps
	HD	Reclocker is set to 1.485Gbps
	3G	Reclocker is set to 2.97Gbps
	6G	Reclocker is set to 5.94Gbps
	12G	Reclocker is set to 11.88Gbps
Cable Boost	Selected	Adds pre-emphasis to the output signal
	Cleared*	Disables this feature
Out # - Enable	Selected*	The specified OUT HD-BNC outputs a copy of the SDI IN signal
	Cleared	Disables this output. The specified OUT HD-BNC is not used.
Alarm on LOS	Selected*	The Signal Presence field in the Status tab reports when an input signal is not detected
	Cleared	Disables the alarm. The input signal is not monitored.
Alarm on External Power Loss	Selected*	The External Power field in the Hardware tab reports when the voltage falls below 0.8V.
	Cleared	Disables the alarm. The Power Supply port on the unit is not monitored.
Alarm on USB Power Loss	Selected	The USB Power field in the Hardware tab reports when power is supplied via the USB port.
	Cleared*	Disables the alarm. The USB port on the unit is not monitored.
Factory Settings	Restore	Resets all DashBoard editable fields (excluding network) to the factory default values

Network Tab

Table 5.6 outlines the fields displayed in the **Network** tab that is located near the **Setup** tab in the right pane of the DashBoard window.

Table 5.6 Network Tab

Item	Parameters	Description
Device Name	<text>	Provides a unique identifier for the unit in the Tree View of DashBoard
IP Address	###.###	Specifies the IP address for the unit
Subnet Mask	###.###	Specifies the subnet mask for the unit
Default Gateway	###.###	Specifies the gateway for communication outside of the local area network (LAN)

Table 5.6 Network Tab

Item	Parameters	Description
Apply		Updates the Network tab fields
Cancel		Ignores any unsaved changes made to the Network tab fields

Warranty and Repair

The GearLite DETOUR is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of THREE (3) years from the date of delivery to the customer. In the event that your GearLite DETOUR 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 GearLite DETOUR has failed after your warranty period has expired, we will repair your defective product should suitable replacement components be available. You, the owner, will bear any labor and/or part costs incurred in the repair or refurbishment of said equipment beyond the THREE (3) year warranty period.

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 GearLite DETOUR User Manual provides all pertinent information for the safe installation and operation of your GearLite Product. Ross Video policy dictates that all repairs to the GearLite DETOUR 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 GearLite DETOUR, 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 GearLite DETOUR. If required, a temporary replacement module 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.

Technical Specifications

This chapter provides technical information for DETOUR.

★ Specifications are subject to change without notice.

SDI Input

Table 7.1 Technical Specifications — SDI Input

Item	Specifications
Standards Accommodated	SDI Input: per SMPTE 2082-1
Signal Type	MADI, 270Mbps, 1.485Gbps, 2.97Gbps, 5.94Gbps, 11.88Gbps
Impedance	75Ohm
Maximum Input Length	880mV
Return Loss	Per SMPTE 2082-1
Connector Type	HD-BNC
Equalization	
SDI Input	270Mbps: 450m 1.485Gbps: 250m 2.97Gbps: 200m 5.94Gbps: 90m 11.88Gbps: 70m
Bypass Input	While DETOUR does not provide equalization on this input, there is no impact to the cable reach of a downstream device, regardless of where DETOUR is inserted into the signal path

SDI Output

Table 7.2 Technical Specifications — SDI Output

Item	Specifications
Signal Type	MADI, 270Mbps, 1.485Gbps, 2.97Gbps, 5.94Gbps, 11.88Gbps
Impedance	75Ohm
DC Offset	0.0V +/-0.5V
Overshoot	<10%
Jitter	<0.1UI Alignment (up to 2.97Gbps) <0.2UI Alignment (5.94Gbps, 11.88Gbps) <0.2UI Timing (up to 1.485Gbps) <1UI Timing (2.97Gbps, 5.94Gbps, 11.88Gbps)
Connector Type	HD-BNC

Table 7.2 Technical Specifications — SDI Output

Item	Specifications
Return Loss	
OUT 1	5MHz-3GHz: <-9dB 3GHz-6GHz: <-6dB 6GHz-12GHz: <-2dB
OUT 2, 3, 4	Per SMPTE 2082-1
Amplitude	
SDI Outputs	800mV +/-10%
Bypass Output	800mV +/-10% 700mV +/-10% @ 11.88Gbps
Rise and Fall Time	
SDI Outputs	270Mbps: 400-800ps 1.485Gbps, 2.97Gbps: <135ps 5.94Gbps: <80ps 11.88Gbps: <45ps
Bypass Output	270Mbps: 400-800ps 1.485Gbps, 2.97Gbps: <175ps 5.94Gbps: <80ps 11.88Gbps: <65ps

USB Port

Table 7.3 Technical Specifications — USB Port

Item	Specifications
Connector Type	mini-B

ENET Port

Table 7.4 Technical Specifications — ENET Port

Item	Specifications
Standards Accommodated	10/100 BASE-T network
Connector Type	RJ45

Power

Table 7.5 Technical Specifications — Power

Item	Specifications
Required Voltage	+5V
Current	
USB	<500mA
External Supply	<600mA

Dimensions

Table 7.6 Technical Specifications — Dimensions

Item	Specifications
Physical Dimensions ^a	3.954" x 1.754" x 0.99"
	(100.5mm x 44.5mm x 25.1mm)

a. Not including tie-wrap points.

