

8937/8937D

SDI RECLOCKING EQ SNMP DA MODULES

Instruction Manual

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FAQ Database — Solutions to problems and troubleshooting efforts can be found by searching our Frequently Asked Questions (FAQ) database.

Software Downloads — Software updates, drivers, and patches can be downloaded.

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Preface

About This Manual

This manual describes the features of a specific module of the Gecko 8900 Signal Processing System. As part of this module family, it is subject to Safety and Regulatory Compliance described in the Gecko 8900 Series frame and power supply documentation (see the *Gecko 8900 Frames Instruction Manual*).

8937 and 8937D Reclocking EQ SNMP DAs

Introduction

The 8937 module is a 1 x 8 looping input, auto-reclocking, auto-cable equalizing DA with SNMP monitoring capability. The module is suited for medium to long distance signal distribution.

The 8937D (dual) module provides two separate SDI distribution amplifiers on a single card. It also has auto-reclocking, auto-cable equalizing with SNMP monitoring capability. The module is ideal for environments where compact and high density capability is required such as mobile trucks.

The 8937 and 8937D feature:

- Jumper selectable bypass/relock mode with auto bypass,
- Auto detection and front panel indication of all SMPTE 259M signal data rates,
- Auto format detection (525/625),
- Auto cable equalization for up to 300 meters of cable with front panel EQ warning,
- Suitable for SMPTE 310M, SMPTE 259M, DVB-ASI, SDI 270 Mb/s and other 800 mV data ranging from 4 Mb/s to 360 Mb/s,
- Signal presence indication with selectable SNMP trap generation, and
- Remote health monitoring interface.

This manual covers installation, configuration, and operation for both the 8937 and 8937D modules.

Installation

Installation of a module is a process of:

1. Placing the module in a video frame slot, and
2. Cabling and terminating signal ports.

The module can be plugged in and removed from a Gecko 8900 video frame with power on. When power is applied to the module, LED indicators reflect the initialization process (see [Power Up on page 14](#)).

Frame Capacity

The 8937 and 8937D module can be installed in all Gecko 8900 video frames but with varying maximum quantities determined by frame cooling capacity. [Table 1](#) provides the power capacity, cooling capacity, and maximum module count for each frame type.

Table 1. Video Frame Power Capacity

Capacity Calculated	8900TX Frame	8900TF Frame	8900TFN Frame
Power (W)	100	100	100
Recommended Module Cooling (W)	30	100	100
8937 Modules	10	10	10
8937D Modules	10	10	10

Note Module capacity figures assume no other modules are in the frame.

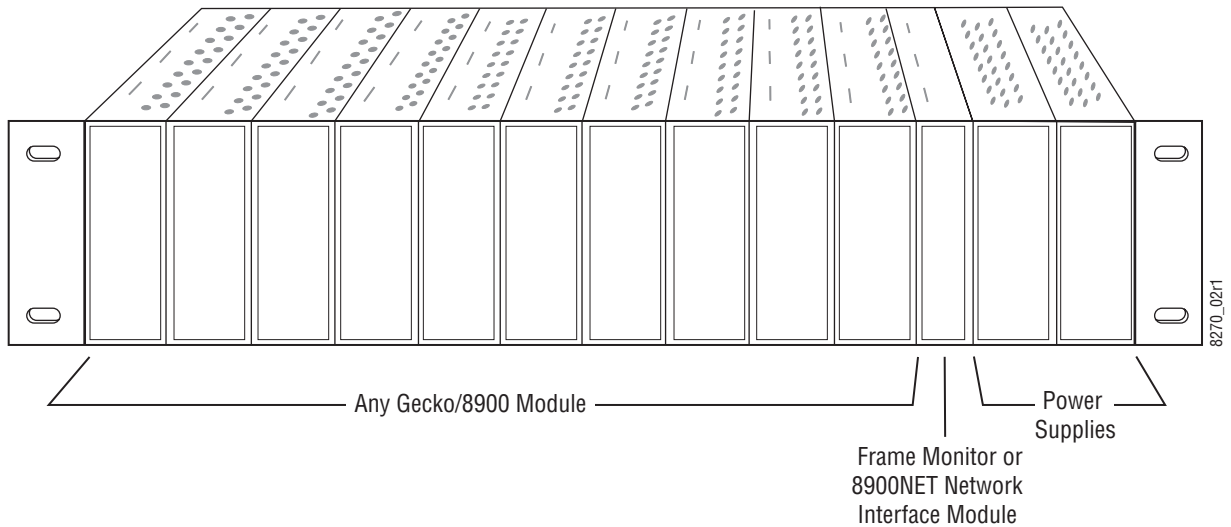
Module Placement in the Gecko 8900 Frame

There are ten cell locations in the video frame to accommodate modules. These are the left ten locations. Refer to [Figure 1 on page 9](#).

The two cells on the right are allocated for the power supplies. For additional information concerning the Power Supply module, refer to the 8900 Power Supply manual.

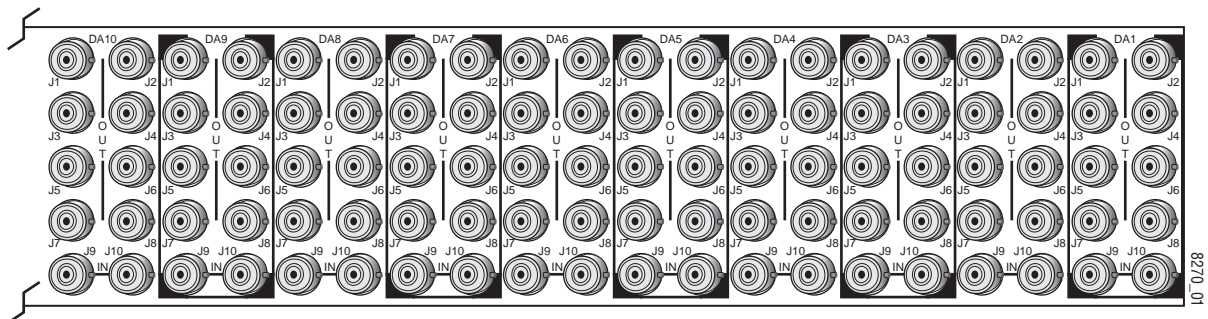
The third cell from the right is allocated for the Frame Monitor or 8900NET Network Interface module. These modules provide health monitoring and control options.

Figure 1. Gecko 8900 Series Frame



8900 module slots are interchangeable within the frame. There are 10 BNCs in each slot's I/O group. The functional assignment of each connector in a group is determined by the module that is placed in that slot. The maximum number of modules a Gecko 8900 video frame can accept is ten. [Figure 2](#) illustrates the rear connector plate for a Gecko 8900 video frame.

Figure 2. Gecko 8900 Series Video Frame Rear Connector



To install a module in the frame:

1. Insert the module, connector end first, with the component side of the module facing to the right and the ejector tab to the top.
2. Verify that the module connector seats properly against the backplane.
3. Press in the ejector tab to seat the module.

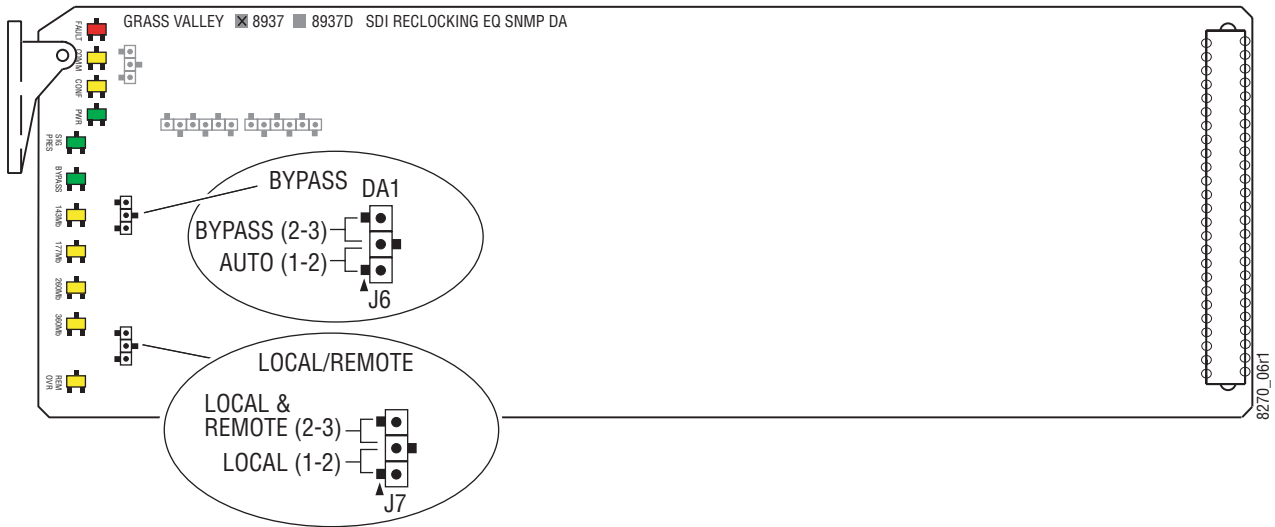
Module Onboard Jumper Settings

8937 Module

Two onboard jumpers are present on the 8937 module to determine module formatting. Refer to [Figure 3](#) for jumper locations on the module circuit board.

- Bypass – set jumper J6 for AUTO (pins 1-2) to enable auto reclocking (for signal data rates of 143, 177, 270, and 360 Mb/s) or BYPASS (pins 2-3) to bypass reclocking (for signals with data rates of 4 Mb/s to 360 Mb/s). This setting can be overridden by remote controls.
- Local/Remote – set jumper J7 to LOCAL (pins 1-2) to lock out remote control or LOCAL & REMOTE (pins 2-3) for access to remote control. This setting cannot be overridden by remote controls.

Figure 3. 8937 On-Board Jumper Locations

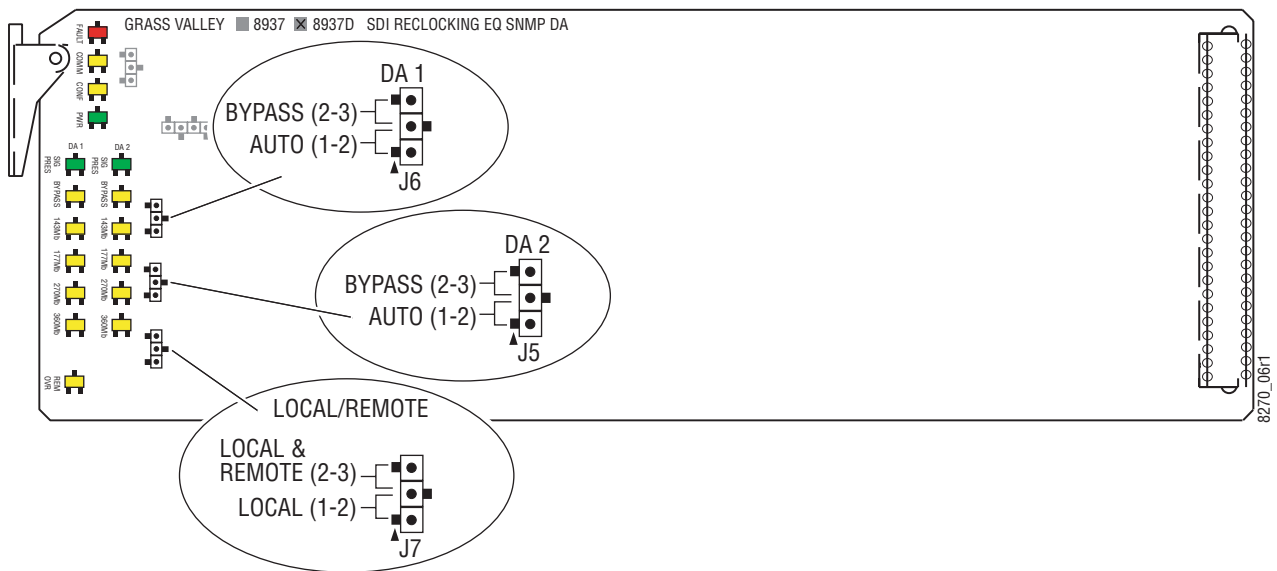


8937D Module

Three onboard jumpers are present on the 8937D module to determine module formatting. Refer to [Figure 4](#) for jumper locations on the module circuit board.

- DA 1 BYPASS/AUTO – for DA 1, set jumper J6 for AUTO (pins 1-2) to enable auto reclocking (for signal data rates of 143, 177, 270, and 360 Mb/s) or BYPASS (pins 2-3) to bypass reclocking (for signals with data rates of 4 Mb/s to 360 Mb/s). This setting can be overridden by remote controls.
- DA 2 BYPASS/AUTO – for DA 2, set jumper J5 for AUTO (pins 1-2) to enable auto reclocking (for signal data rates of 143, 177, 270, and 360 Mb/s) or BYPASS (pins 2-3) to bypass reclocking (for signals with data rates of 4 Mb/s to 360 Mb/s). This setting can be overridden by remote controls.
- Local/Remote – set jumper J7 to LOCAL (pins 1-2) to lock out remote control or LOCAL & REMOTE (pins 2-3) for access to remote control. This setting cannot be overridden by remote controls.

Figure 4. 8937D On-Board Jumper Locations



Looping Capabilities

The reclocked output signal from one 8937 or 8937D module may be looped to up to ten reclocked 8937 or 8937D modules in series for further distribution without degrading the signal.

The output signal from modules operating in Bypass mode (not reclocked to one of the standard rates) will begin to degrade by the third module in the series. This looping is not recommended.

Cabling

Note At the back of every manual are two sets of printed overlay cards that can be placed over the rear connector BNCs to identify the specific connector functions.

8937 Module

Refer to [Figure 5](#) for cabling the 8937 module. Cabling to and from the module is done at the back of the Gecko 8900 video frame as described below.

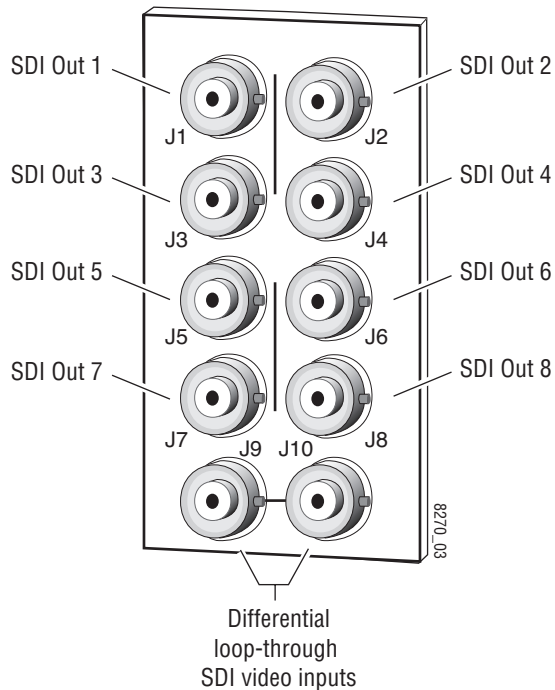
Loop-Through Input

One serial digital component input is provided at differential loop-through BNCs J9 and J10. If the unused input is not looped to another device, it should be terminated in 75 Ω .

Outputs

There are eight outputs for the 8937 module at BNCs J1 through J8. Output destination equipment should have an input impedance of 75 Ω unless it has loop-through inputs, in which case the loop-through inputs must be terminated into 75 Ω . All outputs are in phase with the input signal.

Figure 5. 8937 Rear Input/Output Connectors



8737D Module

Refer to [Figure 6](#) for cabling the 8937D module. Cabling to and from the module is done at the back of the Gecko 8900 video frame as described below.

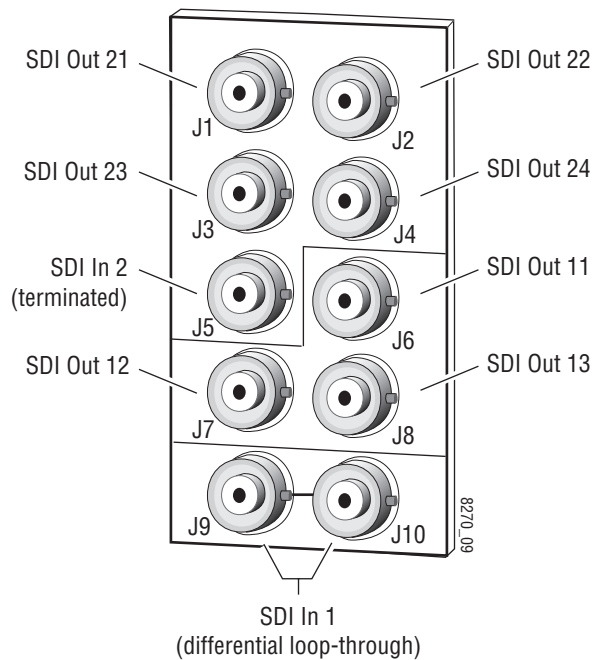
DA 1 Inputs and Outputs

DA 1 provides one serial digital component input at loop-through BNCs J9 and J10. If the unused input is not looped to another device, it should be terminated in 75 Ω . The three outputs for DA 1 are from BNCs J6, J7, and J8. All outputs are in phase with the input signal.

DA 2 Inputs and Outputs

DA 2 provides one terminated serial digital component input at BNC J5. The four outputs for DA 2 are from BNCs J1, J2, J3, and J4. All outputs are in phase with the input signal.

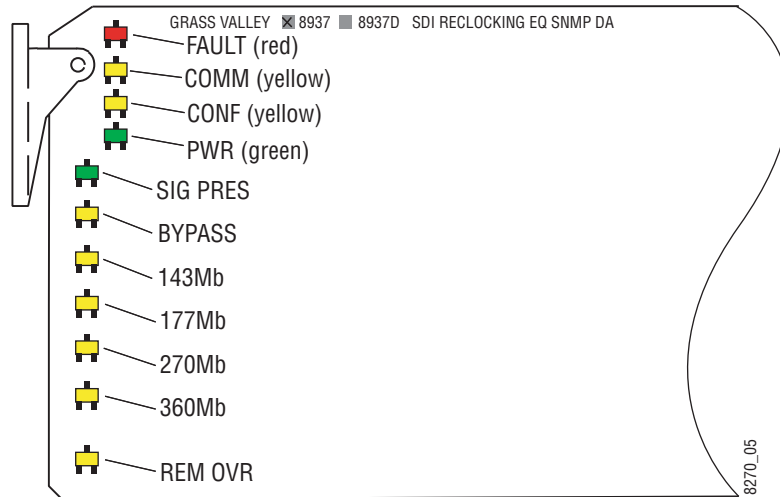
Figure 6. 8937D Rear Input/Output Connectors



Power Up

The front LED indicators and configuration switches are illustrated for the 8937 in Figure 7. The 8937D module has an additional row of identical LEDs labeled for DA 1 and DA 2. Upon power-up, the green PWR LED should light and the yellow CONF LED should illuminate for a few seconds for the duration of module initialization.

Figure 7. LEDs and Configuration Switches



Operation Indicator LEDs

Refer to Figure 7 and Table 2 for the name and meaning of each of the board edge operating indicators on the module circuit board.

Table 2. Board Edge LED Names and Meaning

LED	8937	8937D		Condition
		DA 1	DA 2	
FAULT (red)	Off	Off	Off	Normal operation.
	On continuously	On	On	Module has detected an internal fault. (Refer to Functional Description on page 31.)
	Long Flash	Long Flash	Long Flash	Input missing or input does not match bit rate set with manual mode.
COMM (yellow)	Off	Off	Off	No activity on frame communication bus.
	3 Quick Pulses	3 Quick Pulses	3 Quick Pulses	Locate Module command received by the module from a remote control system.
	Short flash	Short flash	Short flash	Activity present on the frame communication bus.
CONF (yellow)	Off	Off	Off	Module is in normal operating mode.
	On continuously	On	On	Module is initializing, changing operating modes or programming hardware.
PWR (green)	Off	Off	Off	No power to module or module's DC/DC converter failed.
	On	On	On	Normal operation, module is powered.

Table 2. Board Edge LED Names and Meaning

LED	8937	8937D		Condition
		DA 1	DA 2	
SIG PRES (green)	Off	Off	Off	No signal input detected or input signal does not match bit rate set with manual mode.
	On	On	On	In Auto or Bypass mode input signal is present or input signal matches bit rate set with manual mode.
BYPASS (yellow)	Off	Off	Off	Reclocking is enabled and auto-rate detection mode is active.
	On	On	On	Bypass mode is on, input signal will not be reclocked
143 Mb (yellow)	Off	Off	Off	No 143 Mb speed signal present.
	On	On	On	Input signal is locked at 143 Mb
177 Mb (yellow)	Off	Off	Off	No 177 Mb speed signal present.
	On	On	On	Input signal is locked at 177 Mb
270 Mb (yellow)	Off	Off	Off	No 270 Mb speed signal present.
	On	On	On	Input signal is locked at 270 Mb
360 Mb (yellow)	Off	Off	Off	No 360 Mb speed signal present.
	On	On	On	Input signal is locked at 360 Mb
REM OVR (yellow)	Off	Off		Module setting match those set on module switches and jumpers.
	On	On		Remote control is overriding on-board jumper setting

Table 3 provides the various output conditions possible for a given input and module setting.

Table 3. Possible Output Conditions

Input	Setting	Output Condition
Standard definition SDI video	Auto or Bypass	Standard definition SDI video
Other carrier	Bypass	Other carrier
Other carrier	Auto	Signal with errors
No signal or over EQ range	All modes	Muted

Configuration

Configuration and monitoring can be performed using local jumper controls, a web browser GUI interface, or a networked Newton Control Panel. This section provides an overview of each of these controls along with the configuration parameters available with each type of control device.

Configuration Summary

The configuration parameters and monitoring functions available with the local on-board jumpers, web browser interface, and the Newton Control Panel are summarized in [Table 4](#). The parameter defaults, choices, ranges, and resolution are provided for each function.

Table 4. Summary of 2040RDA-FR and 2040RDA-16FR Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	On-Board Jumper Setting	Newton Control Panel
Report Loss of Signal	Yes	Yes or No	Standard Selections/ Report Loss of Signal pulldown	N/A	RepLOS
Mode	Auto	Auto, Manual Bypass	Standard Selections/ Mode pulldown	DA1 J6: pins 1-2 Auto pins 2-3 Bypass	Mode
Standard Select (Manual Mode)	143 Mb	143 Mb 177 Mb 270 Mb 360 Mb	Standard Selections/ Standard Selection pulldown	N/A	StdSel
Mode2 (8937D)	Auto	Auto Manual Bypass	Standard Selections/ Mode2 pulldown	DA 2 J5: pins 1-2 Auto pins 2-3 Bypass	Mode2
Standard Select 2 (8937D) (Manual Mode)	143 Mb	143 Mb 177 Mb 270 Mb 360 Mb	Standard Selections/ Standard Selection 2 pulldown	N/A	StdSel2

Remote Configuration and Monitoring

8937/8937(D) configuration and monitoring can be performed using a web browser GUI interface or a networked Newton Control Panel when the 8900NET Network Interface module is present in the video frame (Gecko 8900TFN-V frame). Each of these interfaces is described below.

Note For remote access, make sure the jumper block on the module is set for both Local and Remote access ([Figure 3 on page 10](#) and [Figure 4 on page 11](#)).

8900NET Module Information

Refer to the 8900NET Network Interface Module Instruction Manual for information on the 8900NET Network Interface module and setting up and operating the Gecko 8900 frame network.

Note The 8900NET module in the frame must be running software version 3.2.0 or higher for proper remote and control panel operation. Upgrade software and instructions for the 8900NET can be downloaded from the Grass Valley web site.

Newton Control Panel Configuration

A Newton Control Panel (hard or soft version) can be interfaced to the Gecko 8900 Series frame over the local network. Refer to the documentation that accompanies the Newton Modular Control System for installation, configuration, and operation information.

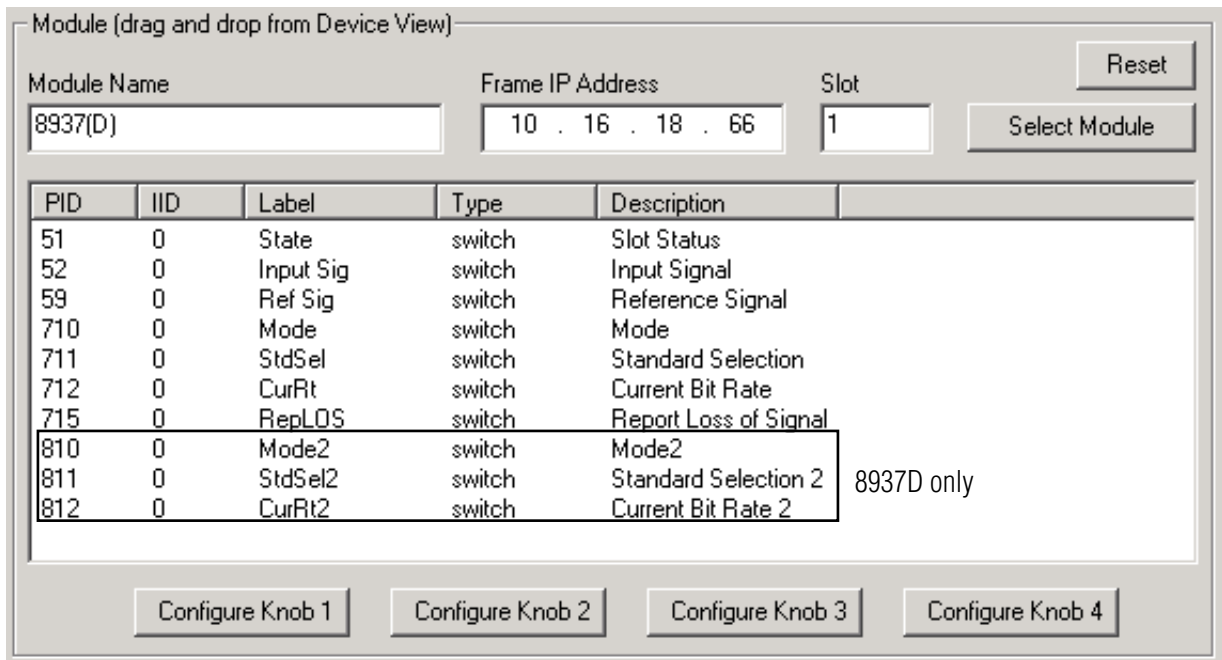
Control panel access offers the following considerations for module configuration and monitoring:

- Ability to separate system level tasks from operation ones, minimizing the potential for on-air mistakes.
- Ability to group modular products—regardless of their physical locations—into logical groups (channels) that you can easily manipulate with user-configured knobs.
- Update software for applicable modules and assign frame and panel IP addresses with the NetConfig Networking application.
- Recommended for real-time control of module configuration parameters, providing the fastest response time.

Note Not all module functions are available with the control panel, such as factory default recalls. The available control panel controls for the module are listed in [Table 4 on page 16](#).

An example of the Newton Configurator is shown in [Figure 8](#).

Figure 8. Newton Configurator Example



Web Browser Interface

The web browser interface provides a graphical representation of module configuration and monitoring.

Use of the web interface offers the following considerations:

- Provides complete access to all module status and configuration functions, including naming of inputs and outputs, factory parameter and name default recalls, E-MEM functions, slot configuration, and SNMP monitoring controls.
- Web access will require some normal network time delays for processing of information.
- Configuration parameter changes may require pressing **Apply** button or **Enter**, upload processing time, and a manual screen refresh to become effective.
- Web interface recommended for setting up module signal and slot names, E-MEMs, and reporting status for SNMP and monitoring.

Refer to the Frame Status page shown in [Figure 9](#) on page 19. The 8900 modules can be addressed by clicking either on a specific module icon in the frame status display or on a module name or slot number in the link list on the left.

Note The physical appearance of the graphics on the web pages shown in this manual represent the use of a particular platform, browser and version of 8900NET module software. They are provided for reference only. Web pages will differ depending on the type of platform and browser you are using and the version of the 8900NET software installed in your system. This manual reflects 8900NET software version 3.2.2.

For information on status and fault monitoring and reporting shown on the Status page, refer to *Status Monitoring on page 33*.

Figure 9. Gecko 8900 Frame Status Page

The Links section lists the frame and its current modules. The selected link's Status page is first displayed and the sub-list of links for the selection is opened. The sub-list allows you to select a particular information page for the selected device.

Content display section displays the information page for the selected frame or module (frame slot icons are also active links).

Refresh button for manual update of page

Gv grass valley

Bay 2 8900 Frame 1

- [Status](#)
- [Configuration](#)
- [1 8937](#)
- [2 8906](#)
- [3 8920DAC](#)
- [4 Media Slot 4](#)
- [5 8920DAC](#)
- [6 8920DMX](#)
- [7 8920MUX](#)
- [8 Media Slot 8](#)
- [9 Media Slot 9](#)
- [10 Media Slot 10](#)
- [11 8900NET](#)
- [12 Power Supply 1](#)
- [13 Power Supply 2](#)

Status

Model: 8900TFN Description: Module Frame
 Frame Location: Back Room Top
 Frame Health Status WARNING Temperature Status Pass

WARNING - Module Data or Config Errors

Module	Module	Module	Module	Module	Module	Module	Empty	Empty	Empty	Net Card	Empty	Power Supply
--------	--------	--------	--------	--------	--------	--------	-------	-------	-------	----------	-------	--------------

Front Cover No Cover

Properties

Vendor	Thomson, Grass Valley	Software Version	3.2.0
Media Slots	10	Network Config	Network configuration stored on 8900NET module

8270_04

8937 and 8937D Links and Web Pages

The 8900 GUI provides the following links and web pages for the 8937 and 8937D modules (Figure 10):

- Status – reports input signal and frame bus communication status and module information (page 21),
- Standard Selections –allows enabling and disabling of signal loss reporting and selection of the standard selection mode (page 22),
- Recall Factory Defaults – provides factory default recall (page 26),
- Slot Config – provides a Locate Module function and Slot Memory (page 27), and
- Software Update – describes software updating procedure (page 29).

Figure 10. 8937 and 8937D Web Page Links

1 8937(D)

Status

Standard Selections

Recall Factory Defaults

Slot Config

Software Update

Status Web Page

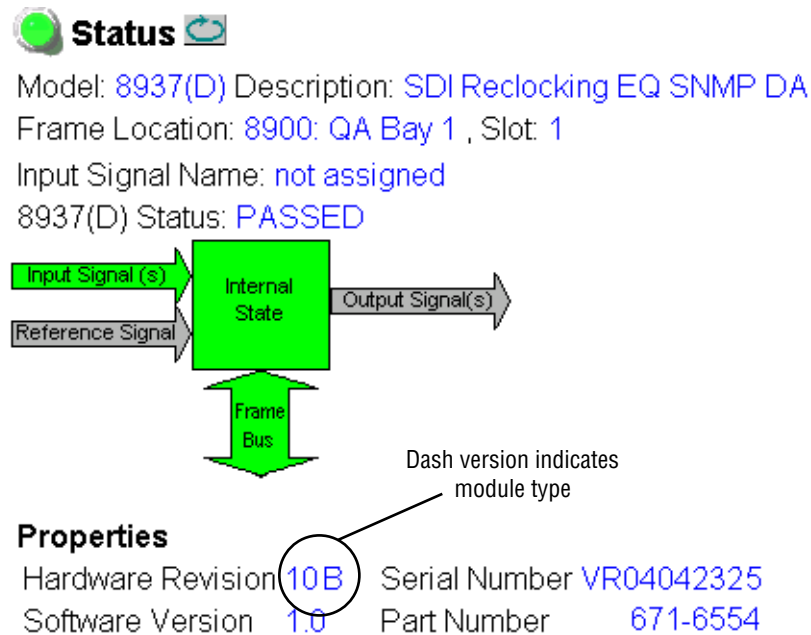
Use this link [Status](#)
[Standard Selections](#)
[Recall Factory Defaults](#)
[Slot Config](#)
[Software Update](#)

The Status web page (Figure 11) shows the signal status of the input signal and communication with the frame bus. Color coding of the display indicates the signal status. Refer to *Status Monitoring* on page 33 for an explanation of the color coding.

Information about the module, such as part number, serial number, hardware revision and software versions are given in a Properties section at the bottom of the display.

All web page displays for either the 8937 or 8937D module will show the model as 8937(D). To identify which module is installed, refer to the Hardware Revision field in the Properties section of the Status web page. 8937 modules are noted as a -00 while 8937D modules are noted as -10 (8937D shown in Figure 11).

Figure 11. 8937 and 8937D Status Web Page



Standard Selections Web Page

- Use this link
- [Status](#)
 - [Standard Selections](#)
 - [Recall Factory Defaults](#)
 - [Slot Config](#)
 - [Software Update](#)

The Standard Selections web page allows you to set loss of signal reporting and operating mode for the 8937 and 8937D modules. Refer to the specific 8937 or 8937D heading below.

8937 Module

Refer to [Figure 12](#) for the Standard Selections web page for the 8937.

- Set the Report Loss of Signal input presence reporting to **Yes** or **No**. Disabling this control will gray out the Input signal on the Status web page graphic shown in [Figure 11](#) on page 21.
- The Input Signal field will report the status of the input signal.
- Set the Mode control to **Auto** (input bit rate standard detected by module), **Manual** (input bit rate standard selected manually), or **Bypass** (input bypasses reclocking circuitry).

When **Auto** or **Bypass** mode is selected, the currently detected bit rate detected by the module will be displayed in the Current Bit Rate field.

Click the **Apply** button to enter any values.

Figure 12. 8937 Standards Selections Web Page

Standard Selections

Model: [8937\(D\)](#) Description: [SDI Reclocking EQ SNMP DA](#)
Frame Location: [8900: QA Bay 1](#) , Slot: [2](#)

Report Loss of Signal: selection current setting [Yes](#)

Input Signal: [Signal Present](#)

Mode: selection current setting [Auto](#)

Current Bit Rate: [270 Mb](#)

When Manual mode is selected, a Standard Selection pulldown will appear as shown in [Figure 13](#).

Select a bit rate from the Standard Selection pulldown from one of the following:

- **143 Mb,**
- **177 Mb,**
- **270 Mb, or**
- **360 Mb**

The currently selected manual rate will be shown next to the pulldown.

Figure 13. 8937 Operating Mode Set to Manual

Standard Selections

Model: [8937\(D\)](#) Description: [SDI Reclocking EQ SNMP DA](#)
 Frame Location: [8900: QA Bay 1](#), Slot: [2](#)

selection current setting

Report Loss of Signal: Yes

Input Signal: [Signal Present](#)

selection current setting

Mode: Manual

selection current setting

Standard Selection: [270 Mb](#)

- 143 Mb
- 177 Mb
- 270 Mb**
- 360 Mb

8937D Module

The Standards Selections page for the 8937D (Figure 14 on page 25) provides a common reporting of signal loss control for both DAs and two sets of separate controls for standard selection.

Click the **Apply** button to enter all values.

- The Report Loss of Signal control is common to both DAs. A loss of signal will be reported if either one or both DAs lose the input signal.

Set the input presence reporting to **Yes** or **No** for both DA 1 and DA 2. Disabling this control will gray out the corresponding Input signal on the Status web page graphic shown in Figure 11 on page 21.



For DA 1:

- Set the Mode control for DA 1 to **Auto** (input bit rate standard detected by module), **Manual** (input bit rate standard selected manually), or **Bypass** (input bypasses reclocking circuitry).
- The Input Signal field will report the status of the DA 1 input signal.
- When Auto or Bypass mode is selected, the currently detected bit rate detected by the module will be displayed in the Current Bit Rate field.
- When **Manual** mode is selected, a Standard Selection pulldown will appear similar to the one shown in the DA 2 illustration in Figure 14 on page 25. Select the bit rate from the Standard Selection pulldown (**143 Mb**, **177 Mb**, **270 Mb**, or **360 Mb**) as desired. The currently selected manual rate will be shown next to the pulldown.

For DA 2:

- Set the Mode 2 control for DA 2 to **Auto** (input bit rate standard detected by module), **Manual** (input bit rate standard selected manually), or **Bypass** (input bypasses reclocking circuitry).
- The Input Signal 2 field will report the status of the DA 2 input signal.
- When Auto or Bypass mode is selected, the currently detected bit rate detected by the module will be displayed in the Current Bit Rate 2 field.
- When **Manual** mode is selected, a Standard Selection 2 pulldown will appear similar to the one shown in Figure 14 on page 25. Select the bit rate from the Standard Selection 2 pulldown (**143 Mb**, **177 Mb**, **270 Mb**, or **360 Mb**) as desired. The currently selected manual rate will be shown next to the pulldown.

Figure 14. 8937D Standard Selection Web Page

 **Standard Selections** 

Model: [8937\(D\)](#) Description: [SDI Reclocking EQ SNMP DA](#)
 Frame Location: [8900: QA Bay 1](#) , Slot: [2](#)

selection current setting
 Report Loss of Signal: [Yes](#)

Input Signal: [Signal Present](#)

selection current setting
 Mode: [Auto](#)

Current Bit Rate: [270 Mb](#)

Input Signal 2: [Signal Present](#)

selection current setting
 Mode2: [Manual](#)

selection current setting
 Standard Selection 2: [270 Mb](#)

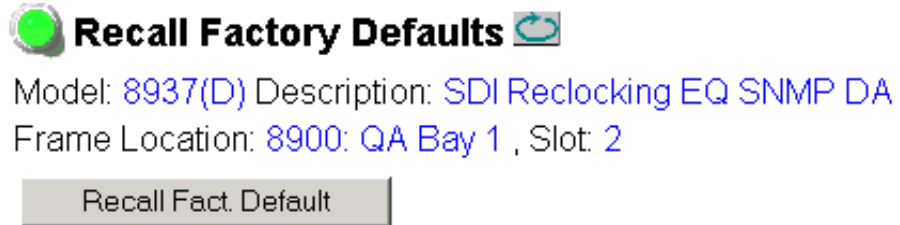
Recall Factory Defaults Web Page

Use [Status](#)
this [Standard Selections](#)
link [Recall Factory Defaults](#)
[Slot Config](#)
[Software Update](#)

Use the Recall Factory Defaults web page (Figure 15) to recall preset factory defaults as listed in Table 4 on page 16.

Note For the 8937D module, this will recall factory defaults for both DAs.

Figure 15. 8937 and 8937D Recall Factory Defaults Web Page



Slot Config Web Page

Use
this
link

- [Status](#)
- [Standard Selections](#)
- [Recall Factory Defaults](#)
- [Slot Config](#)
- [Software Update](#)

Use the Slot Config web page (Figure 16 on page 28) to perform the following functions on the module:

- **Locate Module** – selecting the **Flash** radio button flashes the yellow COMM LED on the front of the module so it can be located in the frame.
- **Slot Identification** – You may identify the module by typing a specific name in the **Name** field. The assigned name is stored on the 8900NET module and travels with the 8900NET module if it is moved to another frame. Select **Default** to enter the factory default module name.
- **Slot Memory** – the slot configuration for each media module is automatically saved periodically (once an hour) to the 8900NET module in that frame. You may also select the **Learn Module Config** button at any time to save the current configuration for this slot. The configuration is saved on the 8900NET module. If the 8900NET module is removed or powered down, the stored configurations are not saved.

When the **Restore upon Install** box has been checked, the current configuration saved to this slot is saved as slot memory. When the current module is removed and another module of the same type is installed, the configuration saved to the 8900NET module will be downloaded to the new module. The box must be checked before the current module with the saved configuration is removed.

- **Frame Health Reporting** – this function is not used on the current version of 8900NET software which controls this page.
- **Hardware Switch Controls** – a read-only status report of 8900NET module switch settings for Module Status Reporting and Asynchronous Status Reporting. These functions must be enabled for the following Slot SNMP Trap Reports to function.
- **Slot SNMP Trap Reports** – displayed only when the SNMP Agent software has been installed on the 8900NET module. Slot SNMP traps can be enabled only when the hardware switches for Module Fault reporting and Asynchronous Status reporting are enabled on the 8900NET module (dipswitch S1 segment 5 and dipswitch S2 segment 1).

The enabled SNMP traps will be reported to any SNMP manager that is identified as an SNMP Report Destination in 8900NET configuration. Trap severity is read-only hard-coded information that is interpreted and responded to by the SNMP Manager software configuration.

SNMP reporting can be also be disabled for the signal input(s) on the Standard Selections web page.

Figure 16. 8937 and 8937D Slot Config Page

 **Slot Config** 

Model: [8937\(D\)](#) Description: [SDI Reclocking EQ SNMP DA](#)
 Frame Location: [8900: QA Bay 1](#) , Slot: [2](#)

Locate Module

Flash Off

Slot Identification

Name:

Input Signal Name:

Slot Memory

Restore upon Install

Frame Health Reporting

	Slot Fault	Signal Loss	Reference Loss
Enabled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hardware Switch Controls

Module Status Reporting: [Enabled](#) Asynchronous Status Reporting: [Enabled](#)

Slot SNMP Trap Reports

	Slot Fault	Module Removed	Signal Loss	Reference Loss
Enabled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Trap Severity	Alarm	Warning	Warning	Warning

Software Update Web Page

Use
this
link \

- [1 8937\(D\)](#)
- [Status](#)
- [Standard Selections](#)
- [Recall Factory Defaults](#)
- [Slot Config](#)
- [Software Update](#)

The Software Update web page (Figure 17) indicates that module software updates via the web or using the NetConfig networking application are not supported.

Refer to the release notes for the latest software upgrade for instructions on updating 8937/89737D software.

Figure 17. 8937 and 8937D Software Update Web Page

Software Update

Model: [8937\(D\)](#) Description: [SDI Reclocking EQ SNMP DA](#)

Frame Location: [8900: QA Bay 1](#) , Slot: [2](#)

Software Version: [1.0](#)

Module Update: [Not Supported](#)

[Override Unsupported Update](#)

Specifications

Table 5. 8937 and 8937D Specifications

Parameter	Value
Serial Digital Component Inputs	
Number of inputs	8937: 2 BNC differential loop-through 8937D: DA 1 – 2 BNC loop-through 8937D: DA 2 – 1 terminated BNC
Input impedance	High Z
Signal type	Serial digital SMPTE 259M (143 Mb/s, 177 Mb/s, 270 Mb/s, 360 Mb/s), SMPTE 310M, DVB-ASI
Reclocked data rates	143 Mb/s, 177 Mb/s, 270 Mb/s, and 360 Mb/s
Supported data rates	4 Mb/s to 360 Mb/s
Signal level	SDI 800 mV p-p ($\pm 10\%$ maximum)
Return loss	> 15 dB 4 MHz to 360 MHz
Automatic cable equalization (Belden 8281 cable)	Up to 300 meters up to 270 Mb/s Up to 200 meters up to 360 Mb/s Up to 100 meters in applications using mechanical or relay type switches upstream of module
Serial Digital Component Outputs	
Number of outputs	8937: 8 BNCs 8937D: DA 1 – 3 BNCs 8937D: DA 2 – 4 BNCs
Output impedance	75 Ω
Signal types	Serial digital SMPTE 259M (143 Mb/s, 177 Mb/s, 270 Mb/s, 360 Mb/s), SMPTE 310M, DVB-ASI
Signal level	SDI 800 mV p-p ($\pm 10\%$ maximum)
Return loss	> 15 dB 4 MHz to 360 MHz
Error checking	Transparent to embedded EDH
Electrical length	< 20 ns
Output polarity	Non-inverted
Rise and fall time	400 – 700 ps
Jitter	< 0.2 UI
Environmental	
Frame temperature range	Refer to frame specification
Operating humidity range	10 to 90% non-condensing
Non-operating temperature	-10 to + 70 degrees C
Mechanical	
Frame type	Gecko 8900 Video/8800/8500 (with trace cut),
Power	
Power consumption	< 3 W

Functional Description

Input and Output Processing

The input section(s) receive SD (standard definition) video from the rear input BNCs and send it to signal equalizing and reclocking circuits. The input section can also bypass reclocking circuits to the output amplifiers. The output amplifiers drive eight equal-phase outputs on the rear backplane for the 8937 and one set of four outputs and one set of three outputs for the 8937D.

Note All outputs are in phase with the input signal.

Microprocessor and Input Selector

The primary purpose of the microprocessor is to provide remote control and monitoring capability for the module. It receives signal present, signal lock, and speed detection signals from the equalizer and reclocker circuits. Using this information, local jumper settings, and remote control commands, the microprocessor selects the internal signal path and gives feedback through the LEDs and remote control bus.

User-enabled video presence detection generates individual SNMP traps for each channel that can be sent to an SNMP manager via the microprocessor.

Service

The 8937 and 8937D modules make extensive use of surface-mount technology and programmed parts to achieve compact size and adherence to demanding technical specifications. Circuit modules should not be serviced in the field unless directed otherwise by Customer Service.

If your module is not operating correctly, proceed as follows:

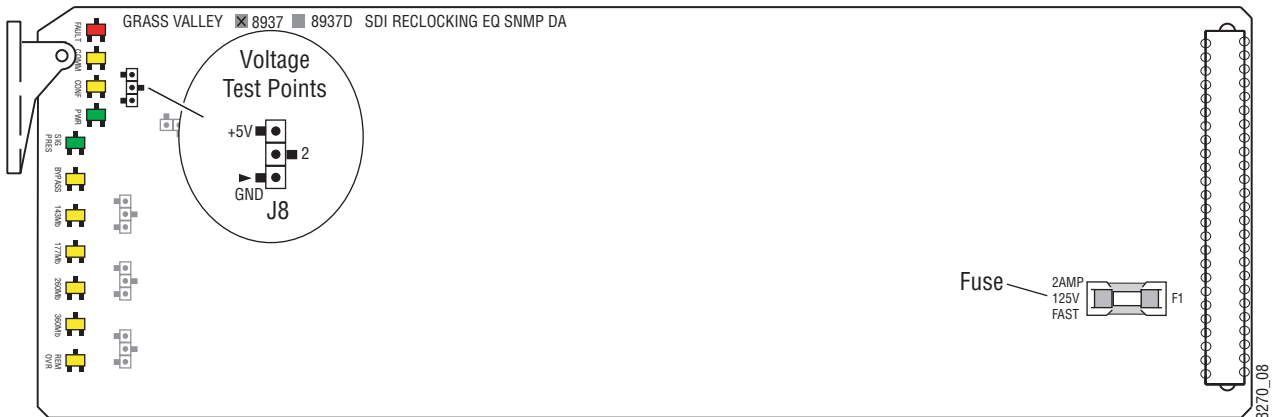
- Check frame and module power and signal present LEDs.
- Verify power at the voltage testpoints (see [Figure 18](#)) and check fuse if no voltage is detected.
- Check for presence and quality of input signals.
- Verify that source equipment is operating correctly.
- Check cable connections.

Refer to [Figure 7](#) for the location of PWR LED and [Table 2 on page 14](#) for proper LED indications.

If the module is still not operating correctly, replace it with a known good spare and return the faulty module to a designated Grass Valley repair depot. Call your Grass Valley representative for depot location.

Refer to the [Contacting Grass Valley](#) at the front of this document for the Grass Valley Customer Service Information number.

Figure 18. 8937 and 8937D Fuse and Voltage Testpoint Locations



Status Monitoring

This section provides a summary of status monitoring and reporting for a Gecko 8900 Series system. It also summarizes what status items are reported and how to enable/disable reporting of each item. There are a number of ways to monitor status of modules, power supplies, fans and other status items depending on the method of monitoring being used.

8900 Frame status will report the following items:

- Power supply health,
- Status of fans in the frame front cover,
- Temperature,
- Module health, and
- Frame bus status.

Module health status will report the following items:

- Internal module state (and state of submodule or options enabled) including configuration errors (warning), internal faults, and normal operation (Pass).
- Signal input states including valid/present (pass), not present or invalid (warning), not monitored (unknown), and not available (no signal inputs).
- Reference input states including locked/valid (pass), not locked/invalid (warning), and not monitored (unknown).
- Signal output states with reporting functionality (reference output).

LEDs

LEDs on modules in the frame and on the front of the 8900TF/TFN frames indicate status of the frame and the installed power supplies, fans in the front covers, and modules.

When a red FAULT LED is lit on a frame front cover, the fault will also be reported on the 8900NET or Frame Monitor module. The LEDs on the front of these modules can then be read to determine the following fault conditions:

- Power Supply 1 and 2 health,
- Fan rotation status,
- Frame over-temperature condition,
- Frame Bus fault (8900NET only), and
- Module health bus.

In general, LED colors used on the frame and modules indicate:

- Green = normal operation, (Pass) or signal present, module locked.
- Red – On continuously = fault condition, flashing = configuration error.
- Yellow – On continuously = active condition (configuration mode or communication), flashing in sequence = module locator function.

Status LEDs for this module are described in [Operation Indicator LEDs on page 14](#). LEDs for the 8900NET module are described in the *8900NET Network Interface Instruction Manual*.

Frame Alarm

A Frame Alarm connection is available on pins 8 and 9 of the RS-232 connector on the rear of the 8900 frame (Frame Monitor or 8900NET Network Interface module required). This will report any of the status items enabled with the 8900NET or Frame Monitor module configuration DIP switch. Connection and use of the Frame Alarm is covered in detail in the *8900NET Network Interface Instruction Manual*.

Web Browser Interface

When the 8900NET module is installed in the frame, a web browser GUI can indicate frame and module status on the following web pages:

- Frame Status page – reports overall frame and module status in graphical and text formats.
- Module Status page – shows specific input and reference signal status to the module along with enabled options and module versions.
- A Status LED icon on each web page to report communication status for the frame slot and acts as a link to the Status page where warnings and faults are displayed (8900NET version 3.0 or later).

In general, graphics and text colors used indicate the following:

- Green = Pass – signal or reference present, no problems detected.
- Red = Fault – fault condition.
- Yellow = Warning – signal is absent, has errors, or is mis-configured.
- Gray = Not monitored (older 8900 module).
- White = Not present.

Status reporting for the frame is enabled or disabled with the configuration DIP switches on the 8900NET module. Most module status reporting items can be enabled or disabled on individual configuration web pages.

SNMP Reporting

The Gecko 8900 Series system uses the Simple Network Monitoring Protocol (SNMP) internet standard for reporting status information to remote monitoring stations. When SNMP Agent software is installed on the 8900NET module, enabled status reports are sent to an SNMP Manager such as the Grass Valley's NetCentral application.

There are both hardware and software report enable switches for each report. Both must be enabled for the report to be sent. Software report switches are set on the 8900NET Configuration page for the Frame, the 8900NET module, and each module slot. Refer to the *8900NET Network Interface Instruction Manual* for installation instructions.

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