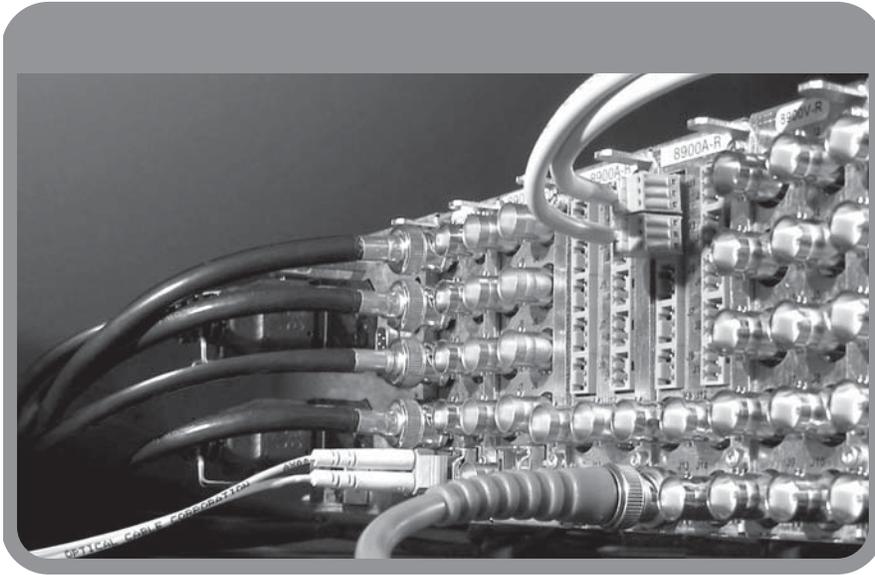


# 8985PRC

## SD/HD PROCESSING AMPLIFIER



Instruction Manual  
Software Version 1.1.0



Affiliate with the N.V. KEMA in The Netherlands



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# 8985PRC

SD/HD PROCESSING AMPLIFIER

Instruction Manual

Software Version 1.1.0

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# *Preface*

## **About This Manual**

This manual describes the features of the 8985PRC modules in the GeckoFlex Signal Processing System family. As part of this module family, it is subject to Safety and Regulatory Compliance described in the *GeckoFlex Frames 8900FX/FF/FFN Signal Processing System Instruction Manual*.

All Modular product documentation can be found on-line in PDF format at this link:

[www.grassvalley.com/docs/modular](http://www.grassvalley.com/docs/modular)



# *8985PRC SD/HD Processing Amplifier Module*

## **Introduction**

This manual covers installation, configuration, and operation for the 8985PRC SD/HD Processing Amplifier module. The 8985PRC offers the full-spectrum of video processing controls to correct colors and avoid illegal signal levels for applications not requiring a timed signal.

## **Module Features**

This module provides video processing for environments utilizing SD and HD signals in both broadcast and ProAV applications. These environments require video signals to be processed for video quality.

The following features are available with this module:

- Two module set including a hot-swappable front and rear module.
- Up to ten audio or video modules in the same 2 RU GeckoFlex frame, including all 8900 Gecko Series modules.
- A fiber optic submodule option provides optical input/output interfaces for all models. Refer to [Table 1 on page 15](#) for a list of SFP submodules used with these modules.
- Supports both HD or SD formats and passes embedded audio present in the incoming video stream.
- Split screen mode allows the input to be compared to the processed output.
- SNMP and product health monitoring is supported through the 8900NET module with applications such as NetCentral.
- Software updating using the NetConfig Networking application.

## Software Requirements

The latest version of 8985PRC software requires the presence of an 8900NET (Net Card) Network Interface module running software version 4.3.0 or later for software updating and is this version is recommended for proper operation. The front edge configuration controls for this module are not used.

Check the software version of your 8900NET module by navigating to the Frame Status web page ([Figure 8 on page 25](#)) and noting the software version given below the frame graphic. The latest version is recommended for optimum operation. Check the Grass Valley ftp server at this link for the latest 8900NET release:

<ftp://ftp.grassvalley.com/modular/8900/8900NET>

## Installation

The 8985PRC consists of a front and rear module set that installs into a GeckoFlex frame.

Installation of the 8985PRC module set is a process of:

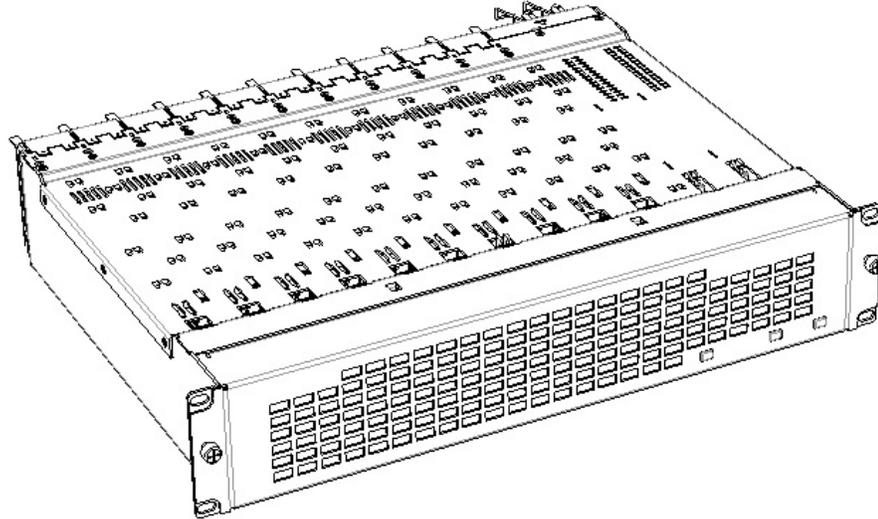
1. Placing the 8900GFR-R rear module in a rear frame slot ([page 13](#)),
2. Placing the front module in the corresponding front slot ([page 14](#)),
3. Installing the optional SFP Fiber Optic submodule ([page 15](#)), and
4. Cabling the signal ports ([page 17](#)).

All GeckoFlex front and rear modules can be inserted and removed from an GeckoFlex frame with power on.

## Module Placement in the GeckoFlex Frame

There are ten front and rear cell locations in the 2 RU Gecko Flex frame (Figure 1) to accommodate either audio or analog and digital video module sets. The 8985 module set uses the 8900GFR-R rear module that can be installed in any one of the ten rear locations.

Figure 1. GeckoFlex Frame



## Module Installation Precautions

Please read and follow the precautions listed below before installing the front and rear modules and any fiber optic option submodules:

- Use standard anti-static procedures during installation. As modules can be installed or removed when the GeckoFlex frame is powered up, before removing the cover, please use an anti-static bracelet tied to a metal part of the frame.
- Install the rear module first, then the front module, then the optical submodule option (if used).
- When installing or removing a rear module, loosen or tighten the screws holding the retainer clips to the frame manually with the retainer clip tool provided inside the front cover of the frame or use a 2 mm (5/64") hex screwdriver. Please do not use an electric screwdriver.

**Note** On newer 751- version GeckoFlex frames, a Rear Retainer Clip removal tool and 2 extra retainer clips and screws for installing them are provided on the inside of the frame cover.

- Make every effort to leave the screws holding the retainer clips in place (do not remove them completely). They are very small and can easily drop into other equipment causing a shorting hazard. (Two turns of the screw should be enough to loosen the screws, 3 turns or more will remove it.)
- When installing a rear module, tighten the screws on the retainer clips just until snug. Refer to the Mechanical specifications for the retainer clip screw torque ([Table 3 on page 47](#)).
- If using a fiber optic submodule, handle it carefully, use anti-static precautions, and read the [Fiber Optic Cleaning Requirement on page 15](#) before cabling.

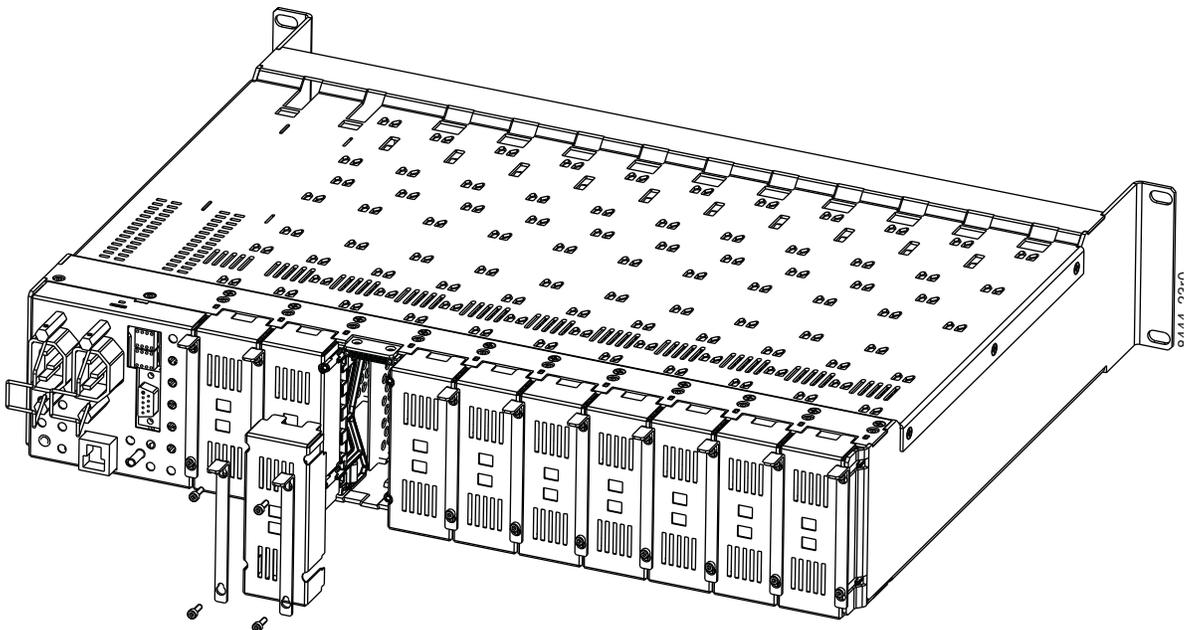
## Rear Module Installation

To install the rear module, refer to [Figure 2](#) and the instructions below:

1. To remove a blank rear adapter cover (or a rear module already present), manually loosen the two screws holding each retainer clip on the rear adapter cover or rear module to the frame with the retainer clip tool provided inside the front cover of the frame (newer model frames only) or a 2 mm (5/64") hex screwdriver. Do not remove the screws.
1. After loosening the retainer clip screws, pull up on each retainer clip and completely remove it, leaving the screws in place.
2. Remove the blank rear adapter cover by inserting needlenose pliers into the slots in the blank cover and pulling it off.
3. Insert the rear module into the empty slot, guiding it carefully into place.
4. Replace each retainer clip over the two screws on both sides of the module and push down to seat the retainer clip.
5. Tighten the two screws on each retainer clip just until they come into contact with the retainer clip then tighten about a 1/4 turn more (snug). The retainer clip screw maximum torque specification is 4-5 inch-lb/0.45-0.6Nm. The retainer clips should not bend or be bowed.

**Note** All unused rear slots in a GeckoFlex frame should have a blank rear adapter cover installed.

Figure 2. Installing Rear Module (751- Version Frame Shown)



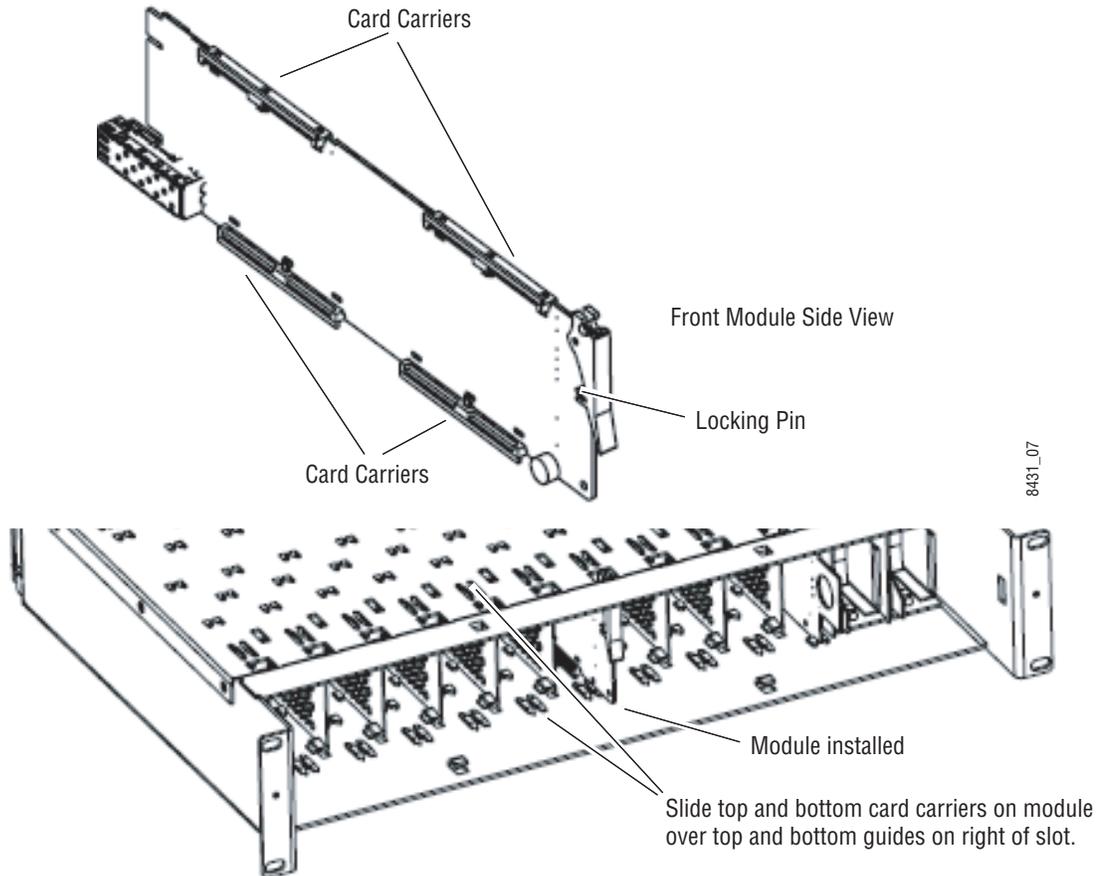
## Front Module Installation

After installing the rear module and the Genlock submodule if required, install the front module as follows:

1. Remove the front cover of the frame if required.
2. Locate the corresponding front slot.
3. Set on-board jumper Local/Remote, J5, for local and remote operation (LOC/REM position, pins 2-3) or to lock out remote control (LOCAL position, pins 1-2).
4. Insert the front module so that the plastic card guides on the module top and bottom edges go over the upper and lower raised rail guides on the right of the top and bottom of the slot (**Figure 3**).
5. Carefully slide the module into the rear connector.
6. Lock the front module ejector tab into the locking pin.

**Note** Before removing the front module, first remove the Fiber Optic submodule if present, from the rear module.

Figure 3. Front Module Installation



## Optional Fiber Optic Submodule Installation

After the front and rear modules have been installed, install the SFP Fiber Optic submodule option if being used into the rear module metal cage labeled FIBER (Figure 4 on page 16). The SFP submodule is hot-pluggable and may be installed or removed with power applied to the module.

**CAUTION** Use anti-static precautions and handle the submodule carefully when installing and the removing it. Before inserting the fiber cable, it is important to clean all fiber connections as described in *Fiber Optic Cleaning Requirement* below.

Refer to Table 1 for the correct model of submodule to use with different software versions.

Table 1. Fiber Optic Submodule Summary

Submodule	Type	SW 1.3.2 and later	SW 1.3.2 and earlier
SFP-13103G-M1DRX	Dual Receiver	X	–
SFP-13103G-M1DTX	Dual Transmitter	X	–
SFP-13103G-M1TRX	Transceiver	X	–
1310nm-DRL	Dual Receiver	X	X
1310nm-DTL	Dual Transmitter	X	X
1310nm-TRL	Transceiver	X	X

## Fiber Optic Cleaning Requirement

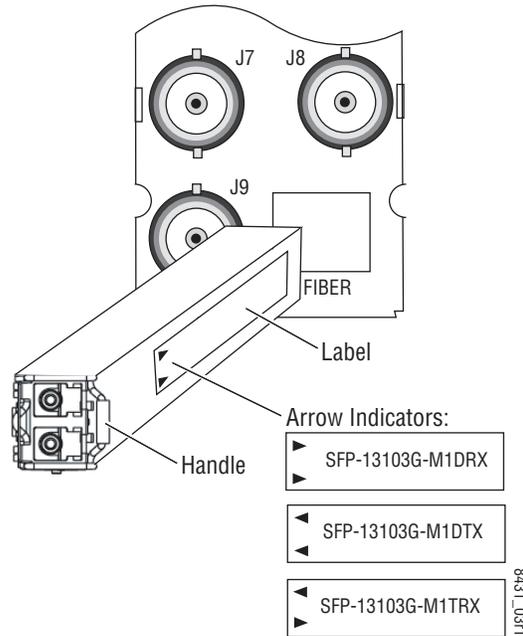
Before making any fiber optic cable mating connections, including installation, and after every de-mating cycle, use an industry standard fiber optic cleaning kit, including oil-free compressed air, to clean the fiber connectors and the connectorized fiber end faces. This helps ensure optimum performance of the fiber optic interface. Industry standard fiber optic cleaning kits can be purchased on the web and in electronics stores.

To install the fiber optic submodule:

1. Slide the fiber optic device into the metal fiber cage with the label and handle to the right.
2. Push the device in as far as it will go without forcing it. It will not go completely into the cage.
3. Cable the fiber optic connectors according to the instructions given in [Video Inputs on page 17](#) and [Video Outputs on page 18](#).

**Note** Fiber inputs or outputs must be enabled in configuration.

Figure 4. Installing Fiber Optics Submodule



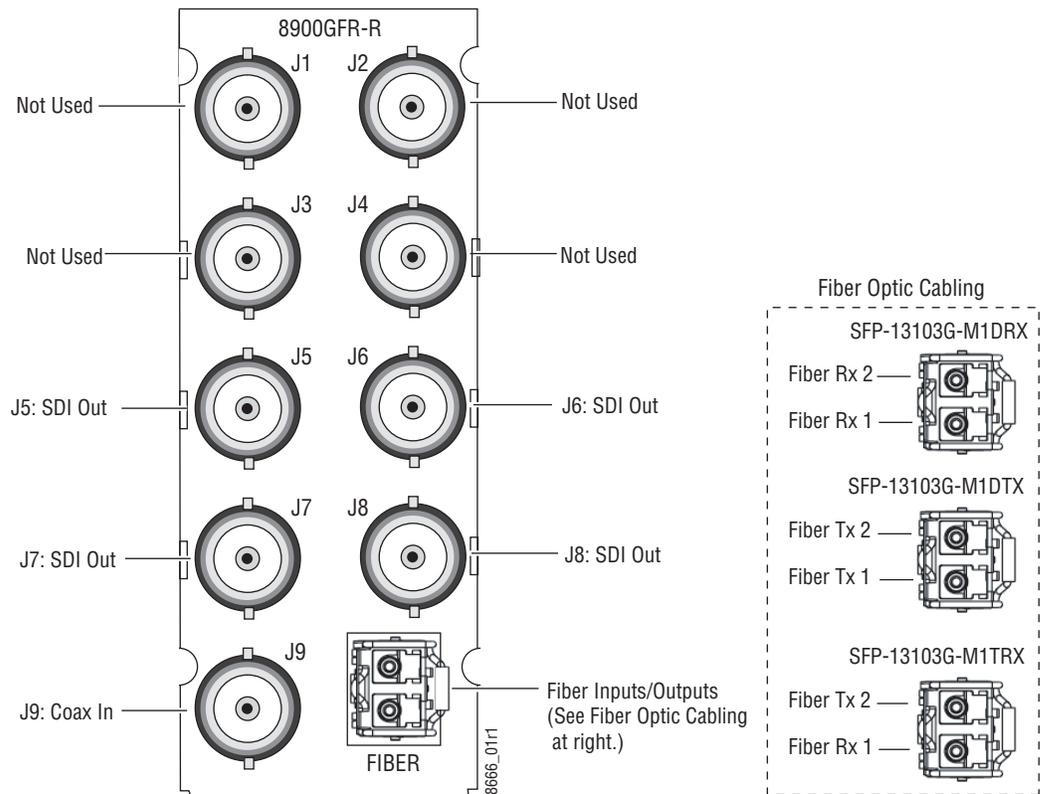
### Removing an SFP Submodule

If you need to remove an SFP submodule, uncable the fiber optic connection on the rear module first. Then snap the handle out and pull the submodule slowly out of the metal cage.

## Cabling

Cabling is done on the rear BNCs of the 8900GFR-R module illustrated in [Figure 5](#). Inputs and outputs are also illustrated on the I/O Config web page ([I/O Config Web Page on page 32](#)).

Figure 5. 8900GFR-R Rear Module



## Video Inputs

Connect an HD or SD digital video signal to the Coax input at BNC J9, and/or to one or both of the fiber inputs at fiber connector J10 (depending on the type of fiber submodule installed).

**Note** Refer to [Table 3 on page 47](#) for important video input and external genlock reference input video frame rate compatibility information.

For fiber optic inputs, a Dual Receiver or Transceiver SFP optical submodule must be installed. Fiber inputs must be enabled with remote controls. Only one video input can be used at a time and must also be selected with remote controls.

## **Video Outputs**

There are four electrical coax video outputs at BNCs J5, J6, J7, and J8.

If a Transceiver SFP optical submodule is installed, one fiber optic output (TX2) is also available. If a Dual Transmitter SFP optical submodule is installed, two fiber optic outputs (TX1 and TX2) are also available. Each fiber optic output must be enabled using remote controls. All coax and fiber optic outputs can be active at the same time.

## **J1 – J4 BNCs**

These BNCs are not used on the 8985PRC module. BNCs J1 and J3 are looping inputs that support the optional Genlock submodule on the 8985FSP/FS modules with an external genlock reference. BNCs J2 and J4 output an auto tracking delay signal on the 8985FSP/FS that can be fed to audio modules to synchronize the audio to the Genlock reference.

# Power Up

The front LED indicators and configuration switches are illustrated in [Figure 6](#). 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. The on-board configuration switches are not used on this module even though they may be present on the module.

**Note** When a media module is first plugged into a GeckoFlex frame, the 8900NET module (if present) may report a momentary fault. This will clear once the media module has booted up.

## Operation Indicator LEDs

With factory default configuration and a valid input signal connected, the green PWR and (Figure 6) on the top side of the module front edge should illuminate (refer to [Table 2 on page 20](#) to see the possible operating indicator combinations).

Figure 6. Front Panel LED Indicators

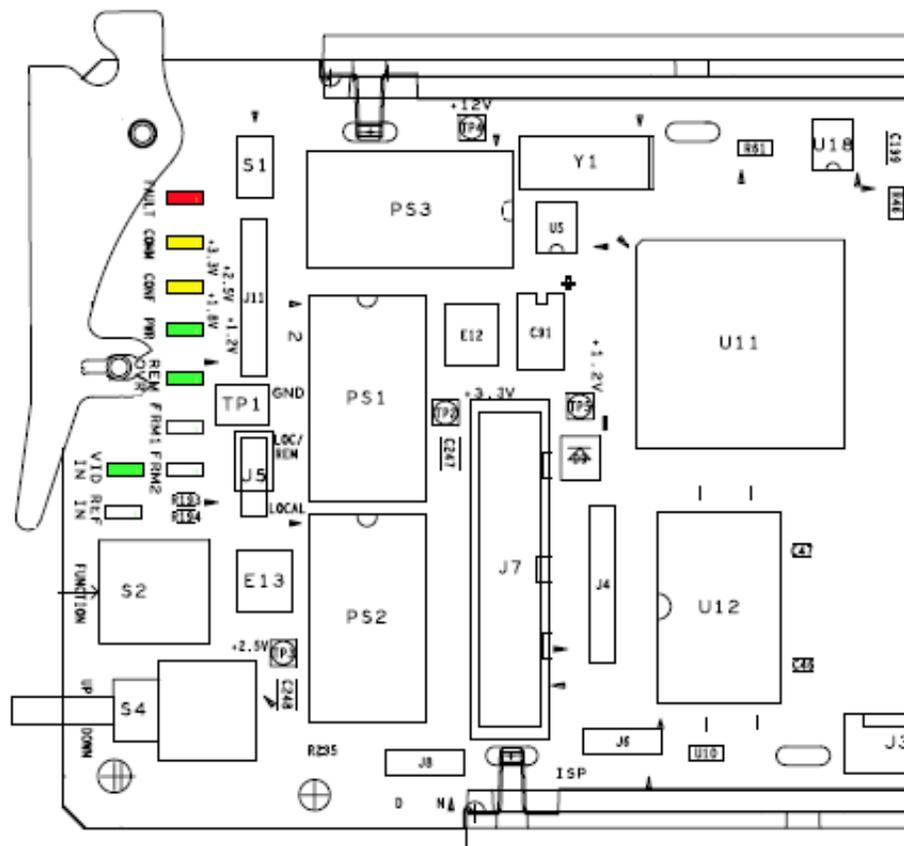


Table 2. Board Front Edge LED Names and Meaning

LED	Indication	Condition
<b>FAULT (red)</b>	Off	Normal operation.
	On continuously	Module has detected an internal fault.
	Flashing	Indicates a warning condition such as configuration problems or missing video. Check inputs and configuration settings.
<b>COMM (yellow)</b>	Off	No activity on frame communication bus.
	3 Quick Pulses	Locate Module command received by the module from a remote control system.
	Short flash	Activity present on the frame communication bus.
<b>CONF (yellow)</b>	Off	Module is in normal operating mode.
	On continuously	Module is initializing, changing operating modes or programming hardware.
	3 Quick Pulses	Locate Module command received by the module from a remote control system.
<b>PWR (green)</b>	Off	No power to module or module's DC/DC converter failed.
	On continuously	Normal operation, module is powered.
<b>REM OVR (green)</b>	Off	Not used on this module.
	On	
<b>FRM1 (green)</b>	Off	Not used on this module.
	On	
<b>FRM2 (green)</b>	Off	Not used on this module.
	On	
<b>VID IN (green)</b>	Off	Indicates no valid input signal is being detected.
	On	Indicates a valid input signal is being detected.
<b>REF IN (green)</b>	On	Not used on this module.
	Off	

# Configuration

The 8985PRC module can only be configured remotely using the 8900NET network interface GUI or a networked Newton control panel. An 8900NET module running software version 4.3.0 is required. (See [Software Requirements on page 10](#) for instructions for upgrading this software.)

Refer to the following sections for configuration instructions:

- Configuration Overview ([page 21](#))
- Remote Control and Monitoring ([page 23](#))
- Configuration Parameter Summary ([page 53](#))

Operation of these control types is explained in detail in their respective sections of this manual.

## Configuration Overview

This section provides a brief overview of all parameters that can be configured on the 8985PRC module. Use this section in conjunction with the specific configuration method instructions for each configuration type. [Table 6 on page 53](#) provides a summary in table format of all parameters and their ranges, default values, and remote web page and Newton control panel function names and locations for setting each value.

## Video Input Selection

Set the type of input connection from a coaxial electrical input or, if an optional SFP Fiber Optic submodule is installed, one of the fiber optic inputs.

## System Configuration

System configuration is required for the input type and line rate and allows enabling of the colorbars test signal.

## Split Screen Control

A Split Screen function can be enabled for comparing the unprocessed input to the processed output. This function is very useful when using the color correction or video processor controls. The Split Screen orientation can be set vertically or horizontally and can be adjusted for the amount of video to be displayed (10-90%). Interactive Split Screen controls are present on the System Config, Video Processing, and Color Correction web pages.

## Color Correction

Color correction controls are provided for making RGB gain, offset and gamma correction adjustments. Each color channel can be adjusted separately or a total gain or total gamma can be applied to all channels.

Gamma controls brighten and darken the gray intensity of the signal. Raising the gamma above 1.0, brightens the gray intensity. Lowering the gamma below 1.0, darkens the gray intensity.

## Video Processing Adjustments

Component level (Y, Cr, Cb) adjustments are provided in the Video processor for video gain and offset, chroma gain, phase control (hue), and color saturation. Each color component can be adjusted separately or the total gain can be adjusted.

## User Settings

Module default parameters and default signal names can be recalled at any time for the entire module or subsets of parameters such as the color corrector or video processor.

On the web pages, a **Defaults** button at the bottom of each applicable web page is available to return the parameters on that page to the factory defaults.

Save and load module configuration to/from a file are also provided on the web pages.

## Video Outputs

When there is a Dual Transmitter (2 outputs) or Transceiver (1 output) fiber optic submodule installed, one or both fiber outputs must be enabled for operation.

The SD or HD horizontal video output delay can also be set in pixels.

## Remote Configuration and Monitoring

8985PRC module configuration and monitoring must be performed remotely using a web browser GUI interface or a networked Newton Control Panel when the 8900NET Network Interface module is present in the GeckoFlex frame. Each of these interfaces is described below.

**Note** The local configuration switches are present but not active on this module.

### 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 GeckoFlex frame network.

**Note** The 8900NET module in the GeckoFlex frame must be running software version 4.3.0 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 GeckoFlex frame over the local network. Refer to the documentation that accompanies the Newton Modular Control System for installation, configuration, and operation information.

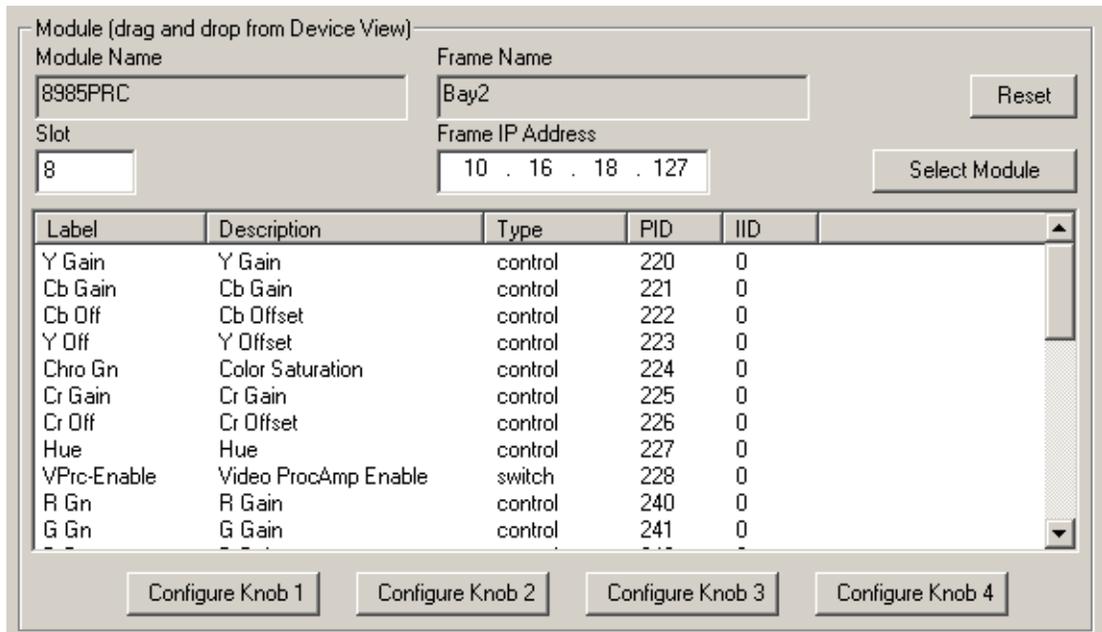
Control panel access offers the following considerations for module configuration and monitoring:

- 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 E-MEM and factory default recalls. The available control panel controls for the 8985PRC module are listed in [Table 6 on page 53](#).

An example of the Newton Configurator is shown in [Figure 7 on page 24](#).

Figure 7. 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 8](#). The 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 menu displays 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. Displays 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 Windows XP and an 8900NET module with software version 4.3.0.

For information on status and fault monitoring and reporting shown on the Status page, refer to [Status Monitoring Summary on page 49](#).

Figure 8. GeckoFlex 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

**Frame**

- [Status](#)
- [Configuration](#)
- [Connections](#)
- [Frame Alarm Reporting](#)
- [LED Reporting](#)
- [SNMP Reporting](#)
- [Power Supply/Demand](#)
- [1 8995UDX+GEN](#)
- [2 Media Slot 2](#)
- [3 8995UDX+GEN](#)
- [4 Media Slot 4](#)
- [5 Media Slot 5](#)
- [6 Media Slot 6](#)
- [7 8985FSP](#)
- [8 8985PRC](#)
- [9 8985FS+GEN](#)
- [10 Media Slot 10](#)
- [11 8900NET](#)
- [12 Power Supply 1](#)
- [13 Power Supply 2](#)

**Status**

Model: 8900FFN Description: [Module Frame](#)  
 Frame Location: [not assigned](#)  
 Frame Health Alarm [WARN](#) Temperature Status [PASS](#)  
 Power Status [PASS](#)

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

Front Cover [No Cover](#)

**Properties**

Vendor	Thomson, Grass Valley	Software Version	4.3.0
Media Slots	10	Network Config	<a href="#">Network configuration stored on frame</a>

8431\_08/3

## Web Page Operations and Functional Elements

The following conventions and functional elements (shown at left) are used in GeckoFlex web page operations. (The examples shown throughout this manual represent 8900NET software version 4.3.0 and later):

Pulldown Menus **Locate Module**



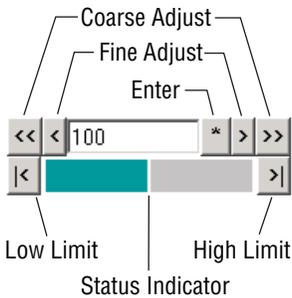
Button — **Default**



Radio button —  525  625

Check box —  Report Error

Refresh button —



Entry Field

Name:

Status LED — 8341\_13

- Pulldown menus allow you to choose selections from a list.
  - Clicking on a button performs an immediate action such as recall of defaults, clearing of states, learning configurations, and selecting all or none of a selection.
  - Radio buttons are used to make a choice of one parameter in a group.
  - Check boxes are used when a selection can be enabled or included in a group. Multiple check box selections or enables can be made for some parameters.
  - A **Refresh** button (circular arrow) is provided at the top of each web page for manual refresh to view recently changed parameters.
  - Each numerical adjustment control has a **Coarse** adjust button (left and right top double arrows) which increases or decreases the step value by a factor of 10. The **Fine** adjust button (left and right inside single arrows) increases or decreases the step value by 1.
- To change a value, use the arrow button controls or enter a value into the number field and select the **Enter** button (\*) or use the **Enter** key on your keyboard. The Status Indicator bar will follow the value selected.
- Use the **Low** and **High Limit** buttons to go directly to the lowest and highest limits for the parameter.
- An entry field allows naming of various module functions such as input or output signals, asset tag, and slot identification.
  - The **Status** LED icon indicates module status and is a link to the module Status web page where status is reported.

Status LED colors indicate:

- Green = Pass – no problems detected
- Yellow = Configuration error warning
- Red = Fault condition detected

## Web Page Headers

Each configuration web page has a Status and Identification Header as shown in [Figure 9](#).

Figure 9. 8985PRC Web Page Header

### **Video Input**

Model: [8985PRC](#) Description: [HD/SD Proc Amp](#)

Frame Location: [not assigned](#) , Slot: [8](#)

Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input : Present](#)

Output Timing Source: [Input](#) Split Screen: [Disabled](#)

Fiber Module Type: [Not Installed](#)

The header information on each web page of the 8985PRC module includes the following:

- **Model** and **Description** are read-only generated by the module.
- **Frame Location** is defined on the 8900 Series GeckoFlex Frame Configuration web page.
- **Slot** number reports the module's location in the frame.
- **Input Video Standard** reports the input video type and rate selected on the System Config web page.
- **Input Video** reports the status of the video input to the module.
- **Output Timing Source** reports the output timing source. This module has no frame sync controls and will always report **Input**.
- **Split Screen** status is reported (**Enabled** or **Disabled**) as set on the System Config, Color Correction, or Video Proc Amp web pages.
- **Fiber Module Type** is reported on the Video Input and Video Output web page headers only on this module.

Defaults

Web pages with configuration parameters each have a **Defaults** button at the bottom of the page to allow resetting of default parameters for only that page. Default values for all parameters are listed in [Table 6 on page 53](#).

## Web Page Links

The web interface GUI provides the following links and web pages for the 8985PRC module (see links at left):

- Status – reports input and output signal status, frame bus communication status, module status and information, warnings and errors ([page 29](#)),
- I/O Config – shows a graphic representation of inputs and outputs of the module and allows naming of each input and enabling and disabling of signal reporting ([page 32](#)),
- Video Input – allows selection of the video input source and provides the status of all sources, including fiber optic submodule option inputs ([page 33](#)),
- System Config – set input video rate and line standard, enable colorbars test signal, and controls for the Split Screen functions ([page 34](#)),
- Color Correction – provides RGB gain, offset and gamma correction adjustments and controls for the Split Screen functions ([page 36](#)),
- Video Proc – provides overall video processing for the HD or SD signal and a control for Split Screen functions ([page 38](#)),
- User Settings – allows recalling of factory defaults for all module parameters or factory signal names, and provides a save/load configuration file function ([page 40](#)),
- Video Out – enable and disable the fiber optic outputs when a fiber module is installed and set SD or HD horizontal video output delay ([page 43](#)), and
- Slot Config – provides Locate Module, Slot Identification, and Slot Memory functions along with links to the 8900NET SNMP, LED Reporting, and Frame Alarm configuration web pages ([page 44](#)).

A summary table of all module parameters including defaults, ranges, and Newton Control panel controls is given in [Table 6 on page 53](#).

## Status Web Page

Use  
this  
link

- [8 8985PRC](#)
- [Status](#)
- [I/O Config](#)
- [Video Input](#)
- [System Config](#)
- [Color Correction](#)
- [Video Proc](#)
- [User Settings](#)
- [Video Out](#)
- [Slot Config](#)

The Status web page ([Figure 10 on page 31](#)) reports information and status about the front media and rear modules and any submodules present (if applicable for the module) in both graphical (using color to indicate status) and textual formats. It also reports the status of the input and reference video signals to the module and submodules, and the Frame Bus status. Video and reference signal reporting can be enabled and disabled at the module level on the I/O Config web page ([page 32](#)).

In general, graphics and text colors used for status indication are 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.



**Note** Always refresh the page first with the **Refresh** button at the top of the page (shown at left) to update the current status of the web page.

### Web Page Header

The content of the web page header for the module is described in detail in [Web Page Header on page 29](#).

### Module Physical Structure

Status is reported for the front, rear, and optional submodules as follows:

- Rear Module – the presence, name, and internal status of the rear module is reported in the graphic on the left. If the rear module is the wrong type or missing, the graphic will indicate the status by color and text within the graphic.
- Front Processing Module – the presence, name, and internal status of the front processing module is reported in the graphic on the right. The graphic will indicate the status of the front module by color and text within the graphic.
- Fiber Module – the optional fiber optic submodule status will be shown in the box on the front module graphic. When a fiber optic submodule is installed, the type will be reported in the top header and the Status text below the graphic on the right.
- Genlock Submodule – the 8900GEN-SM submodule is not used on this module.

Status is reported for each of the following video or reference signals:

- Video In – indicates the status of the video input to the module from the coax BNC, or one of two possible fiber optic inputs (depending on the type of fiber optic connector installed).
- Video Out – (gray) not monitored in this application.
- Genlock Ref In – (gray) not applicable so not monitored on this module.
- Frame Bus – indicates the status of the communication bus between the 8900NET module and the module.

### **Warning/Fault/Message Reporting**

Faults, warnings, and informational messages from the module are displayed between the double bars below the graphic.

**Note** Many of these warnings are informational only and concern frame rate compatibility. Pay close attention to the frame rate compatibility explanations and tables in this manual.

### **Module Status**

Module status for the front and rear modules (and any submodules if applicable) are reported as PASS, WARNING, ERROR, or EMPTY on the right at the bottom of the display.

### **Front Module Information**

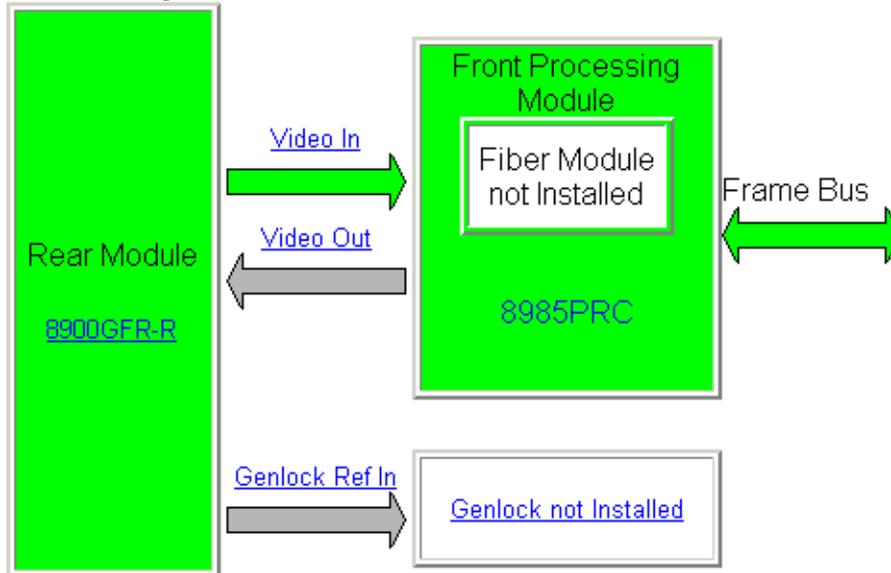
Information about the module, such as part number, serial number, hardware revision and software, firmware, and boot versions, and asset tag number (assigned on the [Slot Config Web Page on page 44](#)) are given on the left at the bottom of the display.

Figure 10. 8985PRC Status Web Page



Model: [8985PRC](#) Description: [HD/SD Proc Amp](#)  
 Frame Location: [not assigned](#) , Slot: [8](#)  
 Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input : Present](#)  
 Output Timing Source: [Input](#) Split Screen: [Disabled](#)

**Module Physical Structure**



[Fiber Module is not installed](#)  
[Genlock Module is not installed](#)

**Status:**  
 Front Module: [PASS](#)  
 Rear Module: [PASS](#)  
 Genlock Module: [EMPTY](#)  
 Fiber Module: [EMPTY](#)

**Front Module:**  
 Part Number: [691-0079----](#)  
 Serial Number: [-----](#)  
 Hardware Revision: [---](#)  
 Firmware Image 1 Version: [inactive](#)  
 Firmware Image 2 Version: [1.4.5](#)  
 Firmware Image 3 Version: [inactive](#)  
 Firmware Image 4 Version: [inactive](#)  
 Software Version: [1.1.0](#)  
 Boot Version: [2.0.1](#)  
 Asset Tag:

## I/O Config Web Page

- Use this link
- [8 8985PRC](#)
  - [Status](#)
  - [I/O Config](#)
  - [Video Input](#)
  - [System Config](#)
  - [Color Correction](#)
  - [Video Proc](#)
  - [User Settings](#)
  - [Video Out](#)
  - [Slot Config](#)

Use the I/O Config web page (Figure 11) for the following:

### Rear Connectors

All of the input and output connectors on the corresponding 8985PRC rear module are illustrated on the I/O Config web page. BNCs J1, J2, J3, and J4 are not used for this module.

The inputs can be configured with the following controls:

- **Signal Naming** – type the desired input name (up to 11 characters) into the corresponding boxes for each input. Each signal has a default name. To recall default factory names, refer to *Recall Factory Defaults and Names on page 40*. The status of each input is indicated by the color of the display.
- **Reporting Enabling** – status reporting of each input type can be enabled or disabled by selecting or deselecting the corresponding checkbox in the **Reporting Enabled** column for each input type. You may disable reporting for inputs not being used if desired to avoid error messages. The **Reporting Enabled** column is also used when an SNMP monitoring application such as NetCentral is installed.

Refer to [on page 48](#) for an explanation of the color coding and using an SNMP monitoring application.

**Note** Outputs are not monitored in this application.

Figure 11. 8985PRC I/O Config Web Page

**I/O Config**

Model: 8985PRC Description: HD/SD Proc Amp  
 Frame Location: not assigned , Slot: 8  
 Input Video Standard: 1080i/59.94 Input Video: Coax Input : Present  
 Output Timing Source: Input Split Screen: Disabled

**Rear Connections**

Signal Names	Reporting Enabled					Reporting Enabled	Signal Names
Ref Input	<input checked="" type="checkbox"/>	Genlock Ref In Loop	J1		J2		
			J3		J4		
		Output	J5		J6		
		Output	J7		J8		
Coax Input	<input checked="" type="checkbox"/>	COAX Video Input	J9		Fiber	<input checked="" type="checkbox"/>	Fiber 2
						<input checked="" type="checkbox"/>	Fiber 1

**Legend:**

- Present
- Not Present
- Not Monitored

## Video Input Web Page

- Use this link
- [8 8985PRC](#)
  - [Status](#)
  - [I/O Config](#)
  - [Video Input](#)
  - [System Config](#)
  - [Color Correction](#)
  - [Video Proc](#)
  - [User Settings](#)
  - [Video Out](#)
  - [Slot Config](#)

Use the Video Input web page (Figure 12) to select and monitor the video input source to the module with the following:

### Video Input Selection

This section provides the following for the video input signal:

- **Select Input Video** – select the input source from the rear module from one of the following:
  - **Coax** – corresponds to BNC input J9.
  - **Fiber RX 1** – will be present when either a Dual Receiver or Transceiver fiber optic submodule is installed, or
  - **Fiber RX 2** – will be present when a Dual Receiver submodule is installed.
- **Signal Name** – the signal name defined on the I/O Config web page will appear in each field.
- **Signal State** – this field reports the status of the input video signal as **Present**, **Not Present**, or **Not Supported** (no fiber submodule installed).

Figure 12. Video In Web Page



Model: [8985PRC](#) Description: [HD/SD Proc Amp](#)  
 Frame Location: [not assigned](#) , Slot: [8](#)  
 Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input : Present](#)  
 Output Timing Source: [Input](#) Split Screen: [Disabled](#)  
 Fiber Module Type: [Not Installed](#)

### Video Input Selection

	Select Input Video	Signal Name	Signal State
Coax	<input checked="" type="radio"/>		<a href="#">Present</a>
Fiber RX1	<input type="radio"/>		<a href="#">Not Supported</a>
Fiber RX2	<input type="radio"/>		<a href="#">Not Supported</a>

[Defaults](#)

## System Config Web Page

- Use this link
- [8 8985PRC](#)
  - [Status](#)
  - [I/O Config](#)
  - [Video Input](#)
  - [System Config](#)
  - [Color Correction](#)
  - [Video Proc](#)
  - [User Settings](#)
  - [Video Out](#)
  - [Slot Config](#)

Use the System Config web page (Figure 14 on page 35) to set the following system configuration parameters for the module:

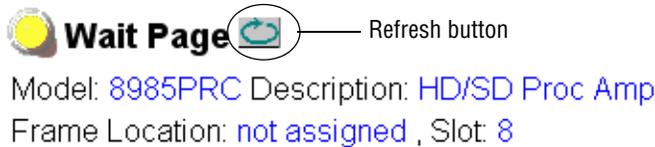
### Input Video

Use the following controls to set the video input type and rate. Refer to Table 6 on page 53 for a complete list of available input types and rates.

- **Input Type** – select the radio button corresponding to the input type.
- **Input Rate** – select the desired input rate from the pull-down.

Pressing the **Defaults** button or changing the Input Type from HD to SD on the System Config web page or with an E-MEM recall will cause the module to reboot. It will take approximately 30 seconds to re-initialize. During this time a Wait Page (Figure 13) will appear. Wait for the operation to complete then select the **Refresh** button to update the web page.

Figure 13. Wait Page



## Please Wait for Operation to complete

### Test Output

An internally generated colorbars test signal may be enabled on the output of the module by checking the **Enabled** checkbox. Be sure to disable this output before going on-air.

### Split Screen

Use a horizontal or vertical split screen to compare the unprocessed input video (top or right) to the processed output video (bottom or left). This control is duplicated and tied together with the Split Screen controls on the Color Correction and Video Proc web pages. Changes made on any one of the Split Screen controls will control all three screens.

- **Split Enable** – enable the split screen by checking the **Split Enabled** checkbox.
- **Orientation** – select the orientation of the split screen with the **Vertical** or **Horizontal** radio button.



## Color Correction Web Page

- Use  
this  
link
- [8 8985PRC](#)
  - [Status](#)
  - [I/O Config](#)
  - [Video Input](#)
  - [System Config](#)
  - [Color Correction](#)
  - [Video Proc](#)
  - [User Settings](#)
  - [Video Out](#)
  - [Slot Config](#)

Use the Color Correction web page ([Figure 15 on page 37](#)) to make RGB gain, offset and gamma correction adjustments and control the Split Screen function.

The Color Correction processing must be enabled before adjustments can be made. Select the **VCC Enable** checkbox to enable these controls.

### Color Correction

The Color Correction section provides the following RGB controls:

- **Gain Adjustments** – set the gain from 0 to 200% for the R, G, and/or B channel with the corresponding control or adjust all of the gains together by adjusting the **Total Gain** control.
- **Offset Adjustments** – set the offset from  $\pm 100\%$  for the R, G, or B channel with the corresponding control or adjust all of the offsets together by adjusting the **RGB Offset** control.
- **Gamma Correction** – set gamma correction with the **R Gamma Correction**, **G Gamma Correction**, and/or **B Gamma Correction** or adjust all channels together using the **Total Gamma Correction** control. Raising the gamma above 1.0, brightens the gray intensity. Lowering the gamma below 1.0, darkens the gray intensity.

### Split Screen

Use a horizontal or vertical split screen to compare the unprocessed input video (top or right) to the processed output video (bottom or left). This control is duplicated and tied together with the Split Screen controls on the System Config and Video Proc web pages. Changes made on any one of the Split Screen controls will control all three screens.

- **Split Enable** – enable the split screen by checking the **Split Enabled** checkbox.
- **Orientation** – select the orientation of the split screen with the **Vertical** or **Horizontal** radio button.
- **Position** – use this control to set the amount of horizontal or vertical split (10 to 90%) of unprocessed video to appear on the screen.

Figure 15. Color Correction Web Page

 **Color Correction** 

Model: [8985PRC](#) Description: [HD/SD Proc Amp](#)

Frame Location: [not assigned](#) , Slot: [8](#)

Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input](#) : [Present](#)

Output Timing Source: [Input](#) Split Screen: [Disabled](#)

**Color Correction**

VCC Enable: <input checked="" type="checkbox"/> Enable		
<p>R Gain (%)</p> <p>&lt;&lt; &lt; 100 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>R Offset (%)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>R Gamma Correction</p> <p>&lt;&lt; &lt; 1.00 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>
<p>G Gain (%)</p> <p>&lt;&lt; &lt; 100 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>G Offset (%)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>G Gamma Correction</p> <p>&lt;&lt; &lt; 1.00 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>
<p>B Gain (%)</p> <p>&lt;&lt; &lt; 100 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>B Offset (%)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>B Gamma Correction</p> <p>&lt;&lt; &lt; 1.00 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>
<p>Total Gain</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>RGB Offset (%)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>Total Gamma Correction</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>

Defaults

**Split Screen**

Split	<input type="checkbox"/> Enabled
<p>Orientation</p> <p><input checked="" type="radio"/> Vertical</p> <p><input type="radio"/> Horizontal</p>	<p>Position (%)</p> <p>&lt;&lt; &lt; 50 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>

## Video Proc Web Page

- [8 8985PRC](#)
- [Status](#)
- [I/O Config](#)
- [Video Input](#)
- [System Config](#)
- [Color Correction](#)
- [Video Proc](#)
- [User Settings](#)
- [Video Out](#)
- [Slot Config](#)

Use  
this  
link

The Video Proc web page ([Figure 16 on page 39](#)) provides overall video processing for the HD or SD signal for the 8985PRC module.

### Video Processing Controls

The Video Proc controls must be enabled by checking the **VPA Enable** checkbox.

The following controls are provided for video processing:

- **Y/Cb/Cr Gain** – set the gain for the Y, Cb, or Cr channel from 0 to 200% with the corresponding control or adjust all gains together by using the **Total Gain** control.
- **Y/Cb/Cr Offset** – set the offset  $\pm 100\%$  for the Y, Cb, and Cr channels with the corresponding control.
- **Color Saturation** – adjust the percentage of color saturation relative to 100%.

### Split Screen

Use a horizontal or vertical split screen to compare the unprocessed input video (top or right) to the processed output video (bottom or left). This control is duplicated and tied together with the Split Screen controls on the System Config and Color Correction web pages. Changes made on any one of the Split Screen controls will control all three screens.

- **Split Enable** – enable the split screen by checking the **Split Enabled** checkbox.
- **Orientation** – select the orientation of the split screen with the **Vertical** or **Horizontal** radio button.
- **Position** – use this control to set the amount of horizontal or vertical split (10 to 90%) of unprocessed video to appear on the screen.

Figure 16. Video Proc Web Pager



Model: [8985PRC](#) Description: [HD/SD Proc Amp](#)  
 Frame Location: [not assigned](#) , Slot: [8](#)  
 Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input : Present](#)  
 Output Timing Source: [Input](#) Split Screen: [Disabled](#)

**Video Processing Controls**

VPA Enable:  Enable

<p>Y Gain (%)</p> <p>&lt;&lt; &lt; 100 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>Cb Gain (%)</p> <p>&lt;&lt; &lt; 100 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>Cb Offset (%)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>Y Offset (%)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>
<p>Color Saturation (%)</p> <p>&lt;&lt; &lt; 100 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>Cr Gain (%)</p> <p>&lt;&lt; &lt; 100 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>Cr Offset (%)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>	<p>Hue (Deg)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>
<p>Total Gain</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>			

Defaults

**Split Screen**

Split	<input type="checkbox"/> Enabled
<p>Orientation</p> <p><input checked="" type="radio"/> Vertical</p> <p><input type="radio"/> Horizontal</p>	<p>Position (%)</p> <p>&lt;&lt; &lt; 50 * &gt; &gt;&gt;</p> <p> &lt; [ ] &gt; </p>

## User Settings Web Page

- [8 8985PRC](#)
- [Status](#)
- [I/O Config](#)
- [Video Input](#)
- [System Config](#)
- [Color Correction](#)
- [Video Proc](#)
- [User Settings](#)
- [Video Out](#)
- [Slot Config](#)

Use  
this  
link

The User Settings web page (Figure 17) provides a save/load function for configuration files and a way to recall factory defaults parameters and signal names for the entire module.

### Recall Factory Defaults and Names

Use the two buttons at the bottom of the web page to do the following:

- **Set Factory Defaults** – select the **Set Factory Defaults** button to recall factory settings to the module. Defaults for all module parameters are listed in [Table 6 on page 53](#).
- **Set Factory Names** – select the **Set Factory Names** button to recall factory signal names to the module. Defaults for all signal names are displayed on the I/O Config web page shown in [Figure 11 on page 32](#).

Figure 17. User Settings Web Page



Model: [8985PRC](#) Description: [HD/SD Proc Amp](#)  
Frame Location: [not assigned](#) , Slot: [8](#)  
Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input : Present](#)  
Output Timing Source: [Input](#) Split Screen: [Disabled](#)  
Fiber Module Type: [Not Installed](#)

### File Operations

<input type="button" value="Save to..."/>	<input type="button" value="Load from..."/>
-------------------------------------------	---------------------------------------------

- |                                                     |                         |
|-----------------------------------------------------|-------------------------|
| <input type="button" value="Set Factory Defaults"/> | Recall factory settings |
| <input type="button" value="Set Factory Names"/>    | Recall factory names    |

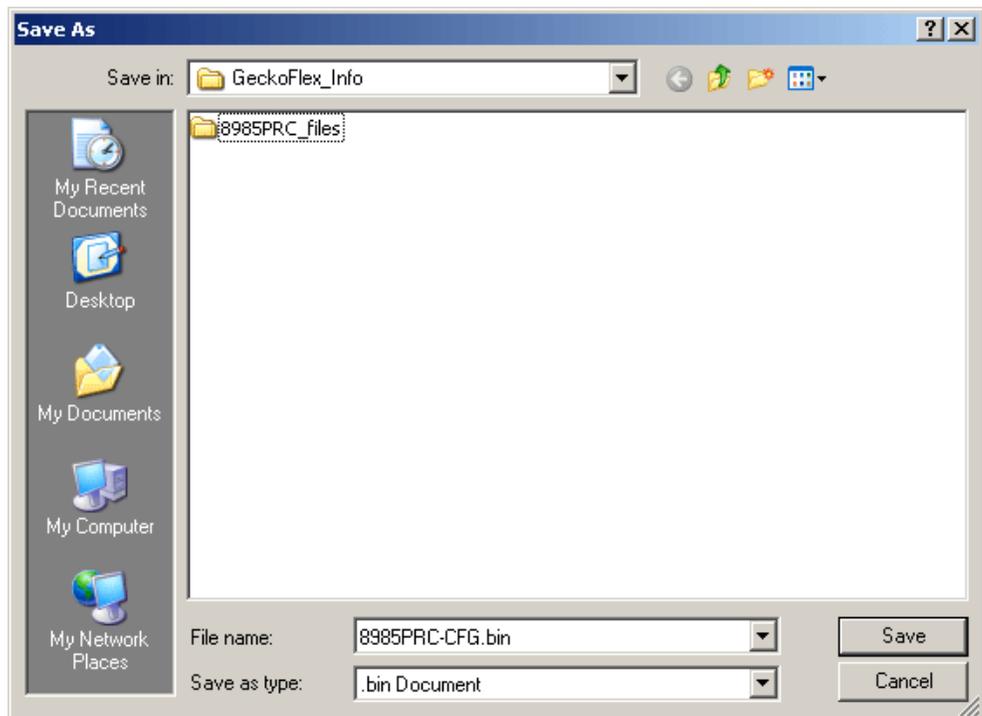
## File Operations

Configuration files from the 8985PRC module may be saved to a file and stored offline for later recall.

To save a file, do the following:

1. Save the current configuration on the module to a file by selecting the **Save to...** button on the User Settings web page (Figure 17 on page 40) which will bring up the File Download screen (not shown).
2. In the File Download screen select **Save**.
3. This will bring up the Save As screen shown in Figure 18.
4. Enter a name in the **File name** field. This file is saved as a .bin type.

Figure 18. Save As Screen.



To load and recall a file, do the following:

1. Selecting the **Load From...** button on the User Settings web page (Figure 17 on page 40) which will bring up the Load Settings web page shown in Figure 19 on page 42.
2. Enter a path and file name or select **Browse...** to locate the directory where the files have been saved.

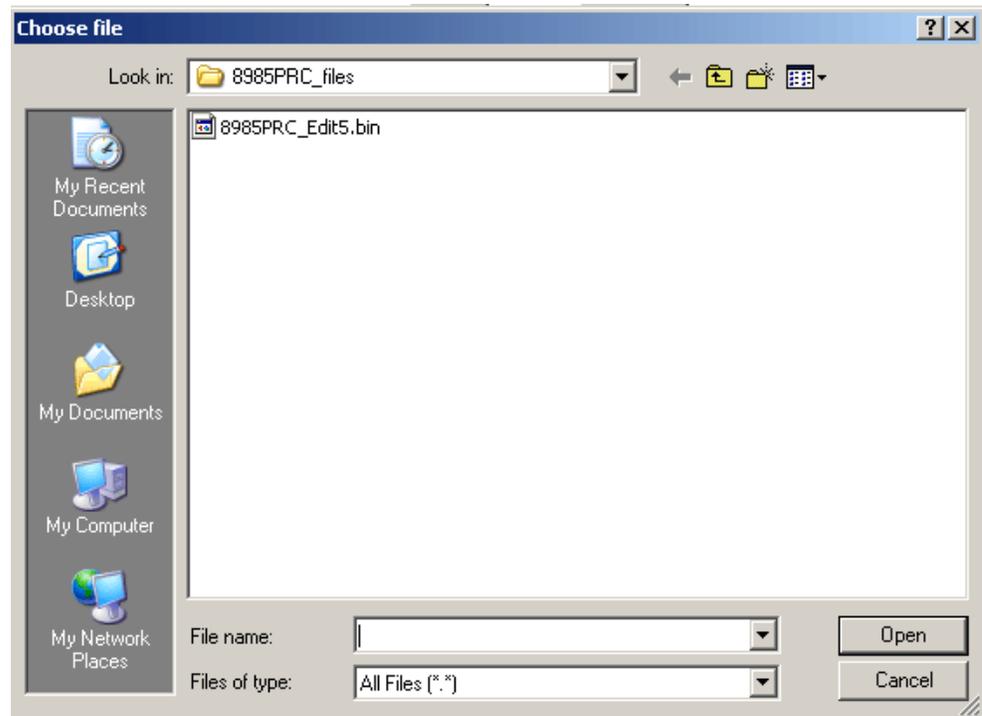
Figure 19. Load Settings Web Page.



3. This will bring up the Choose File screen shown in [Figure 20](#).
4. Select a file to load and then press **Open** to bring the file into the filename field.
5. Press the **Load** button in the Load Settings web page ([Figure 19](#)) to load the file to the module.

**Note** The parameters stored in this file will immediately be loaded to the module. This could change the status of the output so be sure to be aware of the changes or be off air before uploading a configuration file.

Figure 20. Choose File Screen



## Video Out Web Page

- [8 8985PRC](#)
  - [Status](#)
  - [I/O Config](#)
  - [Video Input](#)
  - [System Config](#)
  - [Color Correction](#)
  - [Video Proc](#)
  - [User Settings](#)
  - [Video Out](#)
  - [Slot Config](#)
- Use this link

Use the Video Out web page (Figure 21) to enable or disable the SFP Fiber Optic submodule outputs when present and set the horizontal video delay on the video output.

**Note** Fiber optic outputs will be present when either a Dual Transmitter (TX1 and TX2) or a Transceiver (TX2) Fiber Optic submodule is installed.

### Output Enables

This section provides the following for the video output signal:

- **Fiber TX1** – check the **Enabled** checkbox to enable the output (Dual Transmitter fiber optic submodule installed).
- **Fiber TX2** – check the **Enabled** checkbox to enable the output (Dual Transmitter or Transceiver fiber optic submodule installed).

### SD/HD Video Delay (pixels)

The horizontal video delay can be adjusted in 1.0 pixel steps for HD video and 0.5 pixel steps for SD video.

Figure 21. Video Output Web Page

**Video Out**

Model: 8985PRC Description: HD/SD Proc Amp  
 Frame Location: not assigned , Slot: 8  
 Input Video Standard: 1080i/59.94 Input Video: Coax Input : Present  
 Output Timing Source: Input Split Screen: Disabled  
 Fiber Module Type: Not Installed

### Output Enables

Fiber TX1	Fiber TX2
<input type="checkbox"/> Enabled	<input type="checkbox"/> Enabled

HD Video Delay (pixels)

## Slot Config Web Page

- [8 8985PRC](#)
- [Status](#)
- [I/O Config](#)
- [Video Input](#)
- [System Config](#)
- [Color Correction](#)
- [Video Proc](#)
- [User Settings](#)
- [Video Out](#)
- [Slot Config](#)

Use  
this  
link

Use the Slot Config web page shown in [Figure 22 on page 45](#) to perform the following functions on the module:

### Locate Module

Selecting **Flash** from the **Locate Module** pulldown flashes the yellow COMM and CONF LEDs 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.

An asset identification may be entered in the **Asset Tag** field. This will appear on the module Status web page and in the NetConfig inventory report.

### Slot Memory

The slot configuration for each media module is automatically polled and refreshed periodically (about every 50 minutes) by the 8900NET module when the **Always Slot Refresh** checkbox on the 8900NET Configuration web page (with version 4.3.0 software) and/or the **Restore upon Install** checkbox on any media module Slot Config web page ([Figure 22 on page 45](#)) is selected.

When the **Restore upon Install** checkbox on any media module Slot Config web page has been selected, the current configuration from that module is saved in slot memory on the 8900NET module. This allows the current module to be removed and when another module of the same type, part number, and software version is installed, the configuration saved to the 8900NET module will be downloaded to the new module. The **Restore upon Install** checkbox must be selected before the current module with the saved configuration is removed.

**Note** Make sure all modules of the same type are running the same software version and have the same part number silk-screened on the printed circuit board. Downloading a configuration to a module with a different software version or part number can produce unexpected results.

If a different type of module is installed in this slot, a warning message will state that the original module type has been replaced with another module type. In this case, a **Clear** button will appear allowing you to clear the stored configuration from the previous module.

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 no **Restore upon Install** checkboxes on any of the media module Slot Config web pages are selected and the **Always Slot Refresh** checkbox on the 8900NET Configuration web page is unchecked, the slot refresh polling function on the 8900NET module will be disabled. See the **Always Slot Refresh** checkbox description in the *8900NET (Net Card) Network Interface Instruction Manual* for more details.

**Note** Uncheck the **Restore Upon Install** button before downloading new software.

Figure 22. Slot Config Web Page



### **Frame Health Reports Link**

Select the Frame Health Reports link to open the 8900NET module Frame Alarm Reporting web page. This web page allows configuration of the alarms and warnings that are reported to the external Frame Health Alarm connector on the rear of the GeckoFlex frame.

### **LED Reports Link**

Select the LED Reports link to open the 8900NET LED Reporting web page. Normally, every module in the frame will report to the 8900NET module any Fault, Signal Loss, Reference Loss, or Config Error conditions. These conditions will be reflected by the status LEDs on the 8900NET module. Using this web page, any of these conditions can be disabled from being reported to the 8900NET module for each individual module in the frame.

### **SNMP Trap Reports Link**

Select the SNMP Trap Reports link to open the 8900NET SNMP Reporting web page. This link will only be present when SNMP Agent software has been installed on the 8900NET module. This web page allows configuration of which alarms and warnings that are reported to the SNMP management software.

Refer to the *8900NET Instruction Manual* for complete details on using the 8900NET web pages.

## **Software Updating**

Software updating of the 8985PRC modules is done using the NetConfig Networking Application PC option. This application is available free of charge from the Grass Valley web site. Refer to the current *8985PRC Release Notes* for software updating instructions.

Software updating requires the presence of the 8900NET module running software version 4.3.0. Refer to [Software Requirements on page 10](#) for acquiring the latest version 8900NET software.

All modular product documentation can be found in PDF format on the Grass Valley web site at this link:

[www.grassvalley.com/docs/modular](http://www.grassvalley.com/docs/modular)

# Specifications

Table 3. 8985PRC Specifications

Parameter	Value
<b>Serial Digital Input</b>	
Number and type of input	1 non-isolated terminating BNC
Input impedance	75 ohm
Input return loss	> 15 dB from 5 MHz to 1.5 GHz
Input signal level	800 mV +/- 10%
Input DC tolerance	+/- 0.25 mV maximum
Serial mode hum voltage	1 V p-p to 60 Hz maximum
Common mode rejection ratio (CMMR)	N/A
Auto equalization	325 meters of Belden 1694A or 270 Mb/s 125 meters of Belden 1694A for 1.5 Gb/s
Reclocking	Yes
Input lock range	+/- 100 PPM
Input signal type	HD-SDI: <ul style="list-style-type: none"> <li>• 1080i 59.9 / 50</li> <li>• 1080p24/sF24</li> <li>• 720p 59.9 /50</li> </ul> SD-SDI: <ul style="list-style-type: none"> <li>• 480i59.9</li> <li>• 576i50</li> </ul>
<b>Serial Digital Outputs</b>	
Connector type	Coax BNC, optional fiber optic SFP
Number of outputs	4
Output impedance	75 ohm
Return loss	> 15 dB 5 MHz-270 MHz > 15 dB typical 270 MHz - 1.5 GHz
Output signal level	SDI 800 mV p-p, +/- 10%
Rise/fall time (20-80%)	140 ps for HD 500 ps for SD
Output jitter (in low jitter mode)	< 0.2 UI HD > 100 kHz < 1.0 UI HD 10 Hz-100 kHz < 0.2 UI SD < 1 kHz
<b>Electrical Length (Delay)</b>	
HD modes	104 pixels
SD mode	90 pixels
Precision	± 1 pixel
<b>Power</b>	
Power dissipation	< 8.0 W (with fiber optic submodule)

Table 3. 8985PRC Specifications - (continued)

Parameter	Value
<b>Mechanical</b>	
Frame type	GeckoFlex
Number of rear slots required	1 slot
Rear module type	8900GFR-R
Rear module retainer clip screw torque	4-5 inch-lb/0.45-0.60Nm
<b>Environmental</b>	
Frame temperature range	Refer to GeckoFlex Frames 8900FX/FF/FFN Signal Processing Systems Instruction Manual at: <a href="http://www.grassvalley.com/docs/modular">www.grassvalley.com/docs/modular</a>
Operating humidity range	
Non-operating temperature	

Table 4. SFP Receiver/Transceiver Fiber Optic Submodule Specifications

Model Number	SFP-13103G-M1DRX	SFP-13103G-M1TRX
Low wavelength	1260nm	1260nm
High wavelength	1620nm	1620nm
Receiver channels	2	1
Connector type	LC	
Fiber support	Single mode	
Data rate	50Mb/s to 3Gb/s	
Maximum distance @ 3Gb/s	10km	
Minimum distance	30km	

Table 5. SFP Transmitter/Transceiver Fiber Optic Submodule Specifications

Model Number	SFP-13103G-M1DTX	SFP-13103G-M1TRX
Wavelength 1	1310 nm	1310 nm
Wavelength 2	1310 nm	N/A
Transmit channels	2	1
Connector type	LC	
Fiber support	Single-mode	
Data rate	143 Mb/s to 2.97 Gb/s	
Power output	-5 to 0 dBm (-2dBm typical)	
Maximum distance	10 km <sup>1</sup>	
Maximum distance	20 km	

<sup>1</sup> The 1310 nm Dual Transmitter and Transceiver require no attenuation between fiber transmitter and receiver connections at any length.

# Status Monitoring Summary

There are a number of ways to monitor frame and module status. These methods are summarized here. For more detailed information, refer to the *8900NET (Net Card) Network Interface Module Instruction Manual* and the *8900 Gecko* or *8900 GeckoFlex Frame Instruction Manuals*.

All modular product documentation is available on-line in PDF format at this link:

[www.grassvalley.com/docs/modular](http://www.grassvalley.com/docs/modular)

The main status monitoring methods include the following:

- External frame alarm output on the rear of the 8900 frame with reporting from the Module Health Bus and other frame status alarm reports,
- LEDs on the Frame, 8900NET module, and individual frame media modules,
- Web browser status reporting for each frame component, and
- SNMP traps, captured by Grass Valley's NetCentral or another SNMP Manager Application.

**Note** SNMP trap information is only available when an SNMP Agent has been installed and configured.

## External Frame Alarm

An external Frame Alarm output is available on pins 8 and 9 of the RS-232 connector on the rear of the frame. The Frame Alarm outputs a voltage level indicating there is an alarm condition on the Module Health Bus or one of the other frame components reported to the Frame Monitor module in a Gecko 8900TF or GeckoFlex 8900FF frame or the 8900NET module in an 8900TFN and GeckoFlex 8900FFN frame.

- The Module Health bus is a separate line on the frame motherboard that provides a means for older or less capable modules (such as DAs with no microprocessor) that cannot communicate over the Frame (serial) bus to report warning and alarm conditions to the external Frame Alarm. All media modules in the frame report a voltage level to this line when a warning condition occurs on the module. The specific warning or module location is not reported, only an indication that an warning condition has occurred.
- Frame alarm reporting from other frame components can be enabled and disabled using DIP switches on the Frame Monitor and 8900NET module. For frames with an 8900NET module, the Frame Alarm Reporting web page allows configuration of the alarms and warnings that are reported to this external Frame Health Alarm.

## LED Reporting

LEDs on the front of media modules, the Frame Monitor or 8900NET modules, and the front covers of the 8900TF/TFN and GeckoFlex FF/FFN frames indicate status of the frame and the installed power supplies, fans in the front covers, and module status. (The 8900TX-V/A and GeckoFlex 8900FX frames have no LED indicators on the front cover.)

LED reporting from the modules in the frame to the 8900NET module is configurable using the 8900NET LED Reporting web page. LEDs for the 8900NET module are described in the *8900NET (Net Card) Network Interface Instruction Manual*.

The Status LEDs for this module are described in [Operation Indicator LEDs on page 19](#).

## Web Browser Interface

The 8900NET module controls a web browser GUI that indicates frame and module status on the following web pages:

- Frame Status web page – reports overall frame and module status in colored graphical and text formats. Refer to the [Figure 8 on page 25](#) for an example.
- Module Status web page ([Figure 8 on page 25](#)) – shows specific input and reference signal configuration error status to the module along with module status and information (part number, serial number, hardware version, software/firmware/boot versions, and Asset number (as assigned on the Slot Config web page)).
- A Status LED icon on each web page reflects the module status on the module Status web page where warnings and faults are displayed and is a link to the module Status web page.

## 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.

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.

# Service

The 8985PRC modules make extensive use of surface-mount technology and programmed parts to achieve compact size and adherence to demanding technical specifications. Circuit boards should not be serviced in the field unless directed otherwise by Customer Service.

## Power-Up Diagnostic Failure

If the module has not passed self-diagnostics, do not attempt to troubleshoot. Return the unit to Grass Valley (see [Module Repair](#)).

## Troubleshooting

### Electronic Circuit Breaker

An electronic circuit breaker on the module works during a fault condition or an overcurrent to cut off power to the module in place of a fuse.

If power has been cut off to module, remove the module and replace it in the frame to reset. If the problem persists contact Grass Valley Customer Service.

## Module Repair

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 Customer Service representative for depot locations.

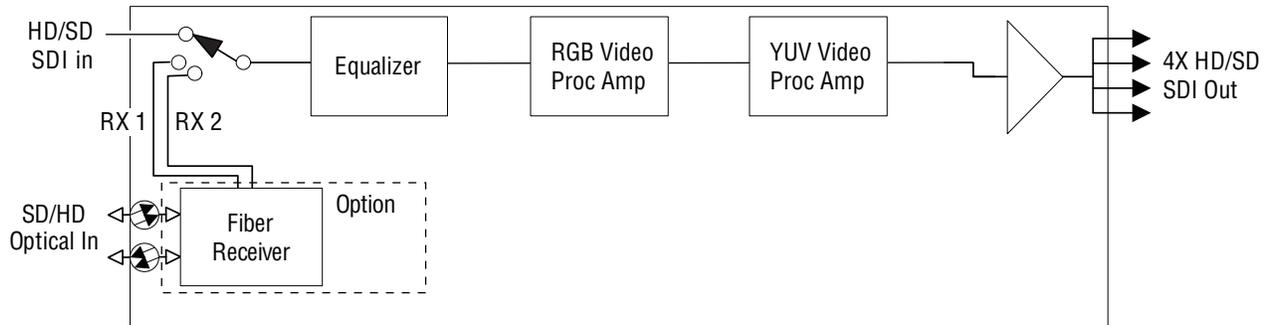
## Contacting Grass Valley

If you need to contact Grass Valley for any module issues, refer to *Contacting Grass Valley on page 4* at the front of this document for the Grass Valley Customer Service Information number.

## Functional Description

A block diagram of the 8985PRC module is shown in [Figure 23](#).

Figure 23. 8985PRC Block Diagram



# Configuration Parameter Summary

Table 6 provides a complete summary of the 8985PRC functions and a comparison of the functionality available with the web page and Newton control panel control type along with the ranges and default values for each parameter.

Table 6. Summary of 8985PRC Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Control Panel
Reference Signal Loss Reporting			N/A	
Coax Input Signal Loss Reporting	On	On or Off	I/O Config/ COAX In Reporting Enabled checkbox	N/A
Fiber Input 1 and 2 Signal Loss Reporting	On	On or Off	I/O Config/ Fiber Video in/Out 1 and 2 Reporting Enabled checkbox	N/A
Video Input Selection	COAX	COAX, Fiber RX 1, or Fiber RX 2	Video In/ Video Input Select Video Input Selection radio button	N/A
Input video type	HD 59.94	HD 59.94, SD, HD 50, or HD 24	System Config/ Input Video Input Rate radio button	N/A
Input video rate	1080i	HD 59.94: 1080i/59.94 or 720p/59.94 SD: 480i/59.94 or 576i/50 HD 50: 1080i/50 or 720p/50 HD 24: 1080s/24 or 1080p/24	System Config/ Input Video Input Type pull-down	N/A
Test Output Color Bars signal	Disabled	Enable or Disable	System Config/ Test Output Colorbars Enabled checkbox	ClrBars
Enable or disable split screen	Disabled	Enabled or Disabled	System Config/, or Color Correction/, or Video Proc/, or Split Screen Split: Enabled checkbox	SplitEn
Split screen orientation	Vertical	Horizontal or Vertical	System Config/, or Color Correction/, or Video Proc/, or Split Screen: Orientation: radio button	SSOrt
Split Screen position (% of unprocessed video)	50%	10 to 90% (1% steps)	System Config/, or Color Correction/, or Video Proc/, or Split Screen: Position (%)	SSPos

## Configuration Parameter Summary

Table 6. Summary of 8985PRC Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Control Panel
VCC (Video Color Correction) enable control	Enable	Enable or Disable	Color Correction/ VCC Enable Enable checkbox	CC-Enable
Adjust R gain	100%	0 to 200% (1% steps)	Color Correction/ R Gain (%)	R Gn
Adjust G gain	100%	0 to 200% (1% steps)	Color Correction/ G Gain (%)	G Gn
Adjust B gain	100%	0 to 200% (1% steps)	Color Correction/ B Gain (%)	B Gn
Adjust total gain	100%	0 to 200% (1% steps)	Color Correction/ Total Gain (%)	RGB Gn
Adjust R offset	0	± 100% (1% steps)	Color Correction/ R Offset (%)	R Off
Adjust G offset	0	± 100% (1% steps)	Color Correction/ G Offset (%)	G Off
Adjust B offset	0	± 100% (1% steps)	Color Correction/ B Offset (%)	B Off
Adjust total offset	0	0 to 200% (1% steps)	Color Correction/ Total Offset (%)	RGB Off
Adjust R gamma	1.0	0.25 to 4.00 (0.01 unit steps)	Color Correction/ R Gamma Correction	RGmC
Adjust G gamma	1.0	0.25 to 4.00 (0.01 unit steps)	Color Correction/ G Gamma Correction	GGmC
Adjust B gamma	1.0	0.25 to 4.00 (0.01 unit steps)	Color Correction/ B Gamma Correction	BGmC
Adjust total gamma	100	0.25 to 4.00 (0.01 unit steps)	Color Correction/ Total Gamma Correction	RGBGmC
Set Color Correction to unity	N/A	See Defaults column	Color Correction/ Defaults button	Unity-VCC
VPA (Video Proc Amp) enable control	On	On or Off	Video Proc/ VPA Enable Enable checkbox	VPrC-Enable
Adjust Y gain (contrast)	100%	0 to 200% (1% steps)	Video Proc/ Video Processing Controls Y Gain (%)	Y Gain
Adjust color saturation (chroma gain)	100%	0 to 200% (1% steps)	Video Proc/ Video Processing Controls Color Saturation (%)	Chro Gn
Adjust Cb gain	100%	0 to 200% (1% steps)	Video Proc/ Video Processing controls Cb Gain (%)	Cb Gain
Adjust Cr gain	100%	0 to 200% (1% steps)	Video Proc/ Video Processing Controls Cr Gain (%)	Cr Gain
Adjust Y Offset (brightness)	0	± 100% (1% steps)	Video Proc/ Video Processing Controls Y Offset (%)	Y Off
Adjust Cb offset	0	± 100% (1% steps)	Video Proc/ Video Processing Controls Cb Offset (%)	Cb Off
Adjust Cr offset	0	± 100% (1% steps)	Video Proc/ Video Processing Controls Cr Offset (%)	Cr Off

Table 6. Summary of 8985PRC Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Control Panel
Adjust hue	0	-180 to +179 degrees (1 degree steps)	Video Proc/ Video Processing Controls Hue (Deg)	Hue
Adjust total gain	0	0 to 200% (1% steps)	Video Proc/ Video Processing Controls Total Gain	VPA Gain
Reset VPA to unity	N/A	See Defaults column	Video Proc/ Default button	Unity-VPA
Recall factory default parameters	N/A	See Defaults column	User Settings/ Recall Factory Defaults Set Factory Defaults button	N/A
Recall factory default signal names	N/A	See <a href="#">8985PRC I/O Config Web Page</a> on page 32.	User Settings/ Recall Factory Names Set Factory Names button	N/A
Enable Fiber TX1 output (Dual Transmitter fiber optic submod- ule installed.)	Not Enabled	Enabled or Not Enabled	Video Output/ Fiber TX1 Enabled Checkbox	N/A
Enable Fiber TX2 output (Dual Transmitter or Transceiver fiber optic submodule installed.)	Not Enabled	Enabled or Not Enabled	Video Output/ Fiber TX2 Enabled Checkbox	N/A
SD/HD Video Delay (display follows SD or HD input stan- dard)	0	0 to 4094 pixels (SD: 0.5 pixel steps HD: 1 pixel steps)	Video Output/ SD/HD Video Delay (pixels) control	SD-Delay HD-Delay



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