

# 8985FSP/FS/PRC

SD/HD FRAME SYNC/PROC AMP

## Instruction Manual

SOFTWARE VERSION 1.2.0

071843101  
SEPTEMBER 2006



Affiliate with the N.V. KEMA in The Netherlands

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*the most watched worldwide*

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# *Preface*

## **About This Manual**

This manual describes the features of the 8985FSP module series and the corresponding rear modules in the GeckoFlex frame. As part of this family of modular products, it is subject to the Safety and Regulatory Compliance information described in the *GeckoFlex Frames Instruction Manual*.

This manual also has instructions for using the 8900GEN-SM submodule. For more detailed information, refer to the *8900GEN-SM GeckoFlex Genlock Submodule Instruction Manual* available online on the Thomson Grass Valley web site.

When using any of the fiber optic options, refer to the laser compliance information in the *GeckoFlex Frames Instruction Manual* for safety information.





# *8985FSP/FS/PRC SD/HD Frame Sync/Proc Amp Modules*

## **Introduction**

This manual covers installation, configuration, and operation for the 8985FSP SD/HD Frame Sync Proc Amp, 8985FS SD/HD Frame Sync, and 8985PRC SD/HD Proc Amp modules.

## **Module Features**

The three versions of the 8985 module provide various degrees of frame synchronization and video processing for environments utilizing SD and HD signals in both broadcast and ProAV applications. These environments require video signals to be synchronized with other video sources and processed for video quality.

The following features are available with this module series.

- 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.
- An optional Genlock submodule (8900GEN-SM) mounted on the 8985FSP/FS circuit board accepts an external reference (NTSC/PAL color black or Tri-Level Sync) and manages Local reference or two separate frame buses can be enabled when the submodule is installed on the modules in slots 1 and 3 of the frame.
- A fiber optic submodule option provides optical input/output interfaces for all models. One of three different types of single-mode fiber optic submodules can be used:
  - 1310NM-DTL – provides two optical outputs (TX 1 and TX 2)
  - 1310NM-DRL – provides two optical inputs (RX 1 and RX 2).
  - 1310NM-TRL – provides one optical input (RX 2) and one optical output (TX 1).

- 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.
- Configuration of modules can be done using local front edge controls or with an 8900NET module in the frame, using a web browser or the Newton Control Panel.
- SNMP and product health monitoring is supported through the 8900NET module with applications such as NetCentral.
- Software updating using the NetConfig Networking application.

### **8985FSP Module**

The 8985FSP provides the full spectrum of frame synchronization and video processing with the following list of features:

- Frame Sync (Genlock submodule required).
- Full-featured video processing amplifier allows component level (Y, Cr, Cb) adjustments of video gain and offset, plus phase control (hue), and color saturation adjustment.
- Color correction controls adjust RGB gain and offset and gamma correction.
- Two auto-tracking outputs to allow synchronization of audio modules to the Genlock reference.

### **8985FS Module**

The 8985FS provides the same frame synchronization features as the full spectrum model without the processing amplifier or color correction.

### **8985PRC Module**

The 8985PRC offers the full-spectrum of video processing controls described above to correct colors and avoid illegal signal levels for applications not requiring a timed signal.

# Software Requirements

8985FSP software version 1.2.0 requires the presence of an 8900NET Network Interface module running software version 4.0.2 or later for configuration and proper operation. There are no longer local front edge controls for this module.

Check the software version of your 8900NET module by navigating to the Frame Status web page ([Figure 11 on page 29](#)) and noting the software version given below the frame graphic.

The latest 8900NET module software update is available at the following URL:

<http://gvg.custhelp.com>

This will take you to the Grass Valley Customer Service FAQ data base. To download the latest 8900NET software, do the following:

1. Navigate to the FAQ site and click on the first FAQ, DOWNLOAD THE LATEST SOFTWARE?
2. Select the 8900 Series link.
3. Select the link to the latest 8900NET Interface module software.
4. If you are updating from version 3.2.0 or higher to version 4.0.2, you may use either the .fld or .bin file.

If you are updating from an earlier version than 3.2.0, use the .bin file and the FTP Server procedure described in detail in the *8900NET Instruction Manual* available on-line.

5. You may also use the NetConfig Networking Application option to update from version 3.2.2 to version 4.0.2 with the .fld file as described in the 8900NET Release Notes documentation.

**Note** If you cannot find the 8900NET software on the FAQ site, software may also be downloaded directly from the Public folder on the Grass Valley ftp site at <ftp://ftp.thomsongrassvalley.com/pub>

# Installation

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

**Note** These modules can only be installed in a GeckoFlex frame. However, older 8900 legacy modules can be installed in this frame and require either an 8900V-R or 8900A-R rear module.

Installation of the 8985 module set is a process of:

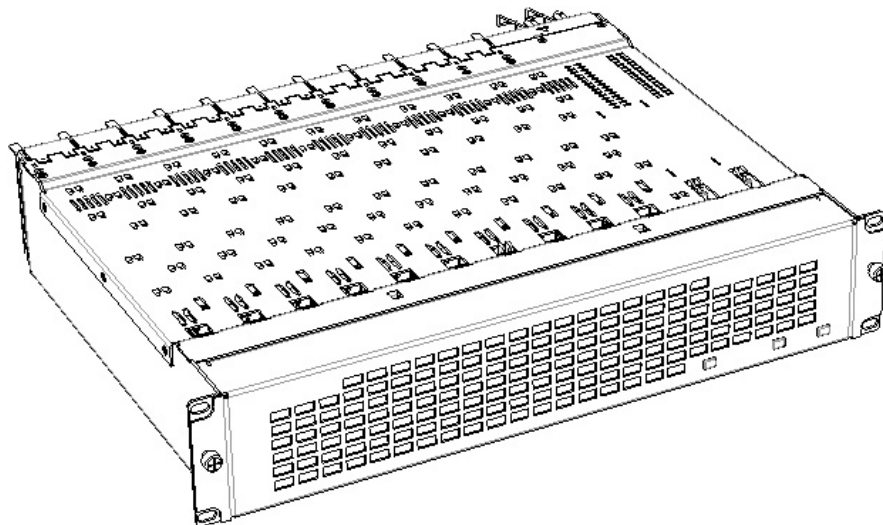
1. Determining the placement of the 8985 module based on genlock timing configuration,
2. Placing the 8900GFR-R rear module in a rear frame slot,
3. Installing the Genlock submodule option on the front module,
4. Placing the front module in the corresponding front slot,
5. Installing the optional SFP Fiber Optic submodule, and
6. Cabling the signal ports.

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



## 8985FSP/FS Module Placement For Genlock Timing

Before installing the 8985FSP or FS module, you will first need to determine if and how you want to use a genlock reference or the available frame reference buses. The genlock timing from an 8900GEN-SM submodule can be utilized in several ways. Refer to the *8900GEN-SM GeckoFlex Genlock Instruction Manual* available online for a complete overview of using the genlock reference.

This manual is at the following URL on the Thomson Grass Valley web site:

<http://www.thomsongrassvalley.com/docs/>

From this link, select **Broadcast Products**, then **Modular Products** from the Documentation table. Scroll down to the **GeckoFlex Flexible Frame Supporting Audio/Video Module** heading and locate the 8985FSP/FS and the 8900GEN-SM GeckoFlex Genlock submodule links.

In addition to the capability of providing a local external reference to this specific 8985FSP/FS module with an 8900GEN-SM submodule installed, slots 1 and 3 of the GeckoFlex frame have been specifically designed to distribute an independent frame bus reference transmitted from the 8900GEN-SM submodule mounted on an 8985FSP/FS module (or other GeckoFlex module with this capability) configured for this purpose. The external reference connected to the corresponding Genlock Loop BNCs can be distributed to other modules in the frame that accept a genlock reference.

If another 8985FSP/FS module has already been configured and installed for frame bus distribution, you may configure this module's output timing to lock to the Frame Bus 1 or Frame Bus 2 reference from the other 8985FSP/FS module. In this case, the 8985FSP/FS does not require the use of an additional 8900GEN-SM submodule.

The use of the genlock reference is determined by the setting of the Output Timing on the System Config web page of the module and module placement in the frame and jumper configuration as summarized below.

- Local Reference – the 8985FSP/FS with an 8900GEN-SM submodule can have a local external reference connected to one of the corresponding Genlock Loop BNCs. This external timing reference will be fed to this specific 8985FSP module only.
- Frame Reference 1 or 2 – when an 8985FSP/FS with an 8900GEN-SM submodule is installed in Slot 1 and/or Slot 3, a frame timing bus can be enabled to distribute the external reference connected to the corresponding Genlock Loop BNCs on the rear module to all modules in the frame that can accept a genlock reference. Slot 1 provides Frame Bus 1 and Slot 3 provides Frame Bus 2.
- Input Video – when no 8900GEN-SM submodule is installed on the 8985FSP/FS, the Output Timing can be set to Input so the output timing will follow the input to the module.

## Rear Module Installation

Each 8900GFR-R rear module or blank rear adapter cover is held in place by two retainer strips as shown in [Figure 2](#). To install a rear module into the frame, follow these steps:

1. Loosen (but do not remove completely) the two screws holding each retainer strip to the frame with a 2 mm (5/64") hex screwdriver. Pull up on the retainer to remove it, leaving the screws in place.

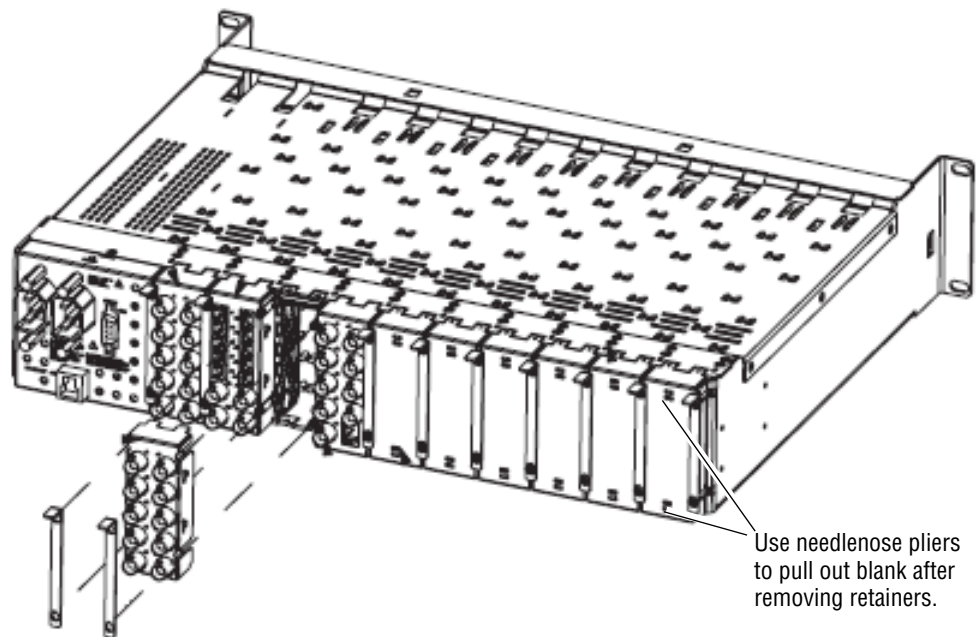
**CAUTION** Be careful to leave the screws in place as they can be easily lost or fall into equipment below the frame creating a shorting hazard.

2. Remove the blank rear adapter cover by inserting needlenose pliers into the slots in the top and bottom of the blank and pulling it off.

**Note** To remove a rear module already installed, follow the same steps. It is helpful to first remove the front module so the rear can be pulled out more easily.

3. Insert the rear module into the empty slot.
4. Replace each retainer strip over the two screws on both sides of the module and push down to seat the retainer.
5. Tighten the screws for each retainer just until they are snug. Do not force or torque the screws too tightly.

Figure 2. Installing Rear Module



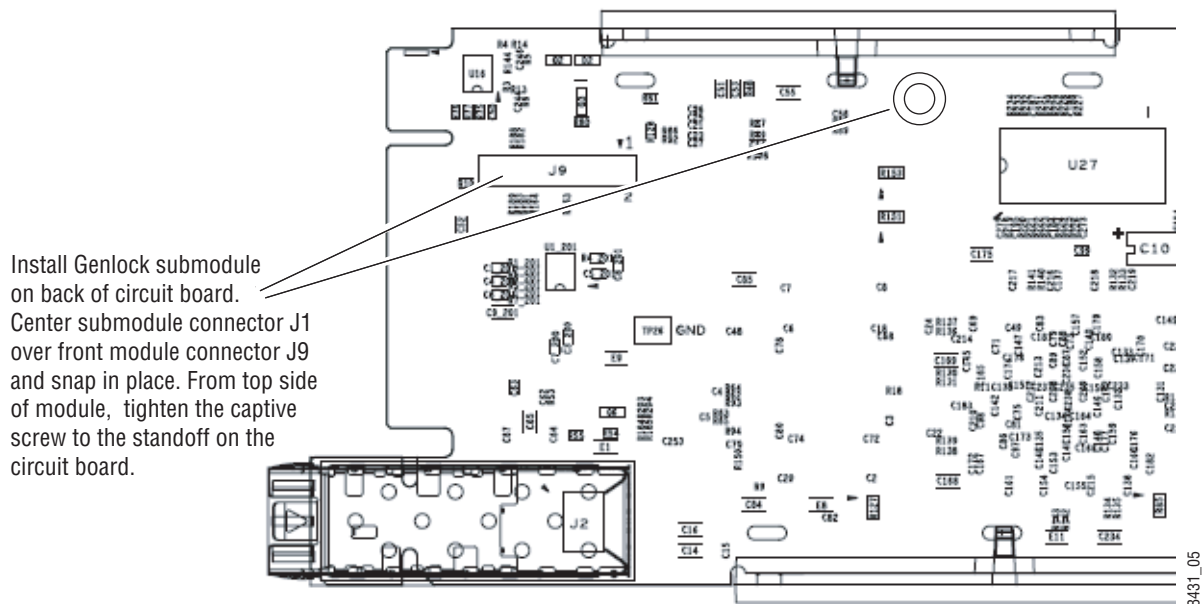
## Genlock Submodule Installation

The Genlock submodule will ship separately and must be mounted on the 8985FSP/FS module. Refer to [8985FSP/FS Module Placement For Genlock Timing on page 13](#) and the *8900GEN-SM GeckoFlex Genlock Submodule Installation Manual* available online for frame timing configuration information and determining the position of the module(s) in the frame.

To install a submodule onto the main circuit board, follow the instructions below:

1. Locate the Genlock connector J9, on the back side of the 8985FSP circuit board ([Figure 3](#)).
2. Line up the connector J1, on the submodule, with J9 on the back side of front module and snap the submodule into place making sure the holes in each circuit board line up.
3. To hold the submodule in place, attach the captive screw provided from the top of the front module to the standoff on the front module circuit board.
4. To remove the submodule, loosen the captive screw and carefully pull the submodule off the circuit board.

Figure 3. Install Genlock Submodule on Back of 8985FSP Circuit Board



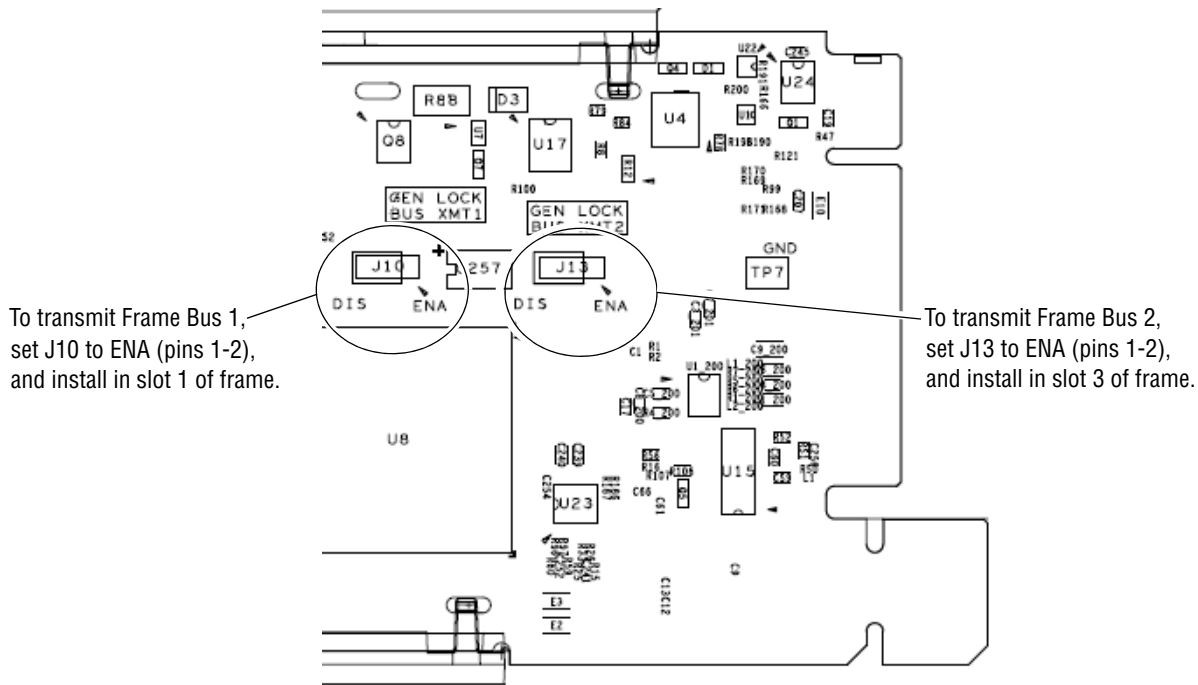
## Frame Bus Jumpering

If you will be using this 8985FSP/FS to distribute Frame Bus 1 (slot 1) or Frame Bus 2 (slot 3), you must set a jumper on the front module circuit board for this purpose before installing the module.

- Frame Bus 1 – to transmit the reference connected to the Genlock Loop BNC on the corresponding rear module on Frame Bus 1, set jumper J10 shown in [Figure 3](#) to **ENA** (pins 1-2). This module must be installed in Slot 1 of the frame and configured on the Genlock web page (see [Genlock Web Page on page 57](#)) for **Auto** in the Drive Frame Reference Bus pull-down.
- Frame Bus 2 – to transmit the reference connected to the Genlock Loop BNC on the corresponding rear module on Frame Bus 2, set jumper J13 to **ENA** (pins 1-2). This module must be installed in Slot 3 of the frame and configured on the Genlock web page (see [Genlock Web Page on page 57](#)) for **Auto** in the Drive Frame Reference Bus pulldown.

**Note** Both jumpers may be enabled. The module in slot 1 will only read the status of jumper, J10. The module in slot 3 will only read the status of jumper, J13.

Figure 4. Setting Frame Bus Jumpers





## Front Module Installation

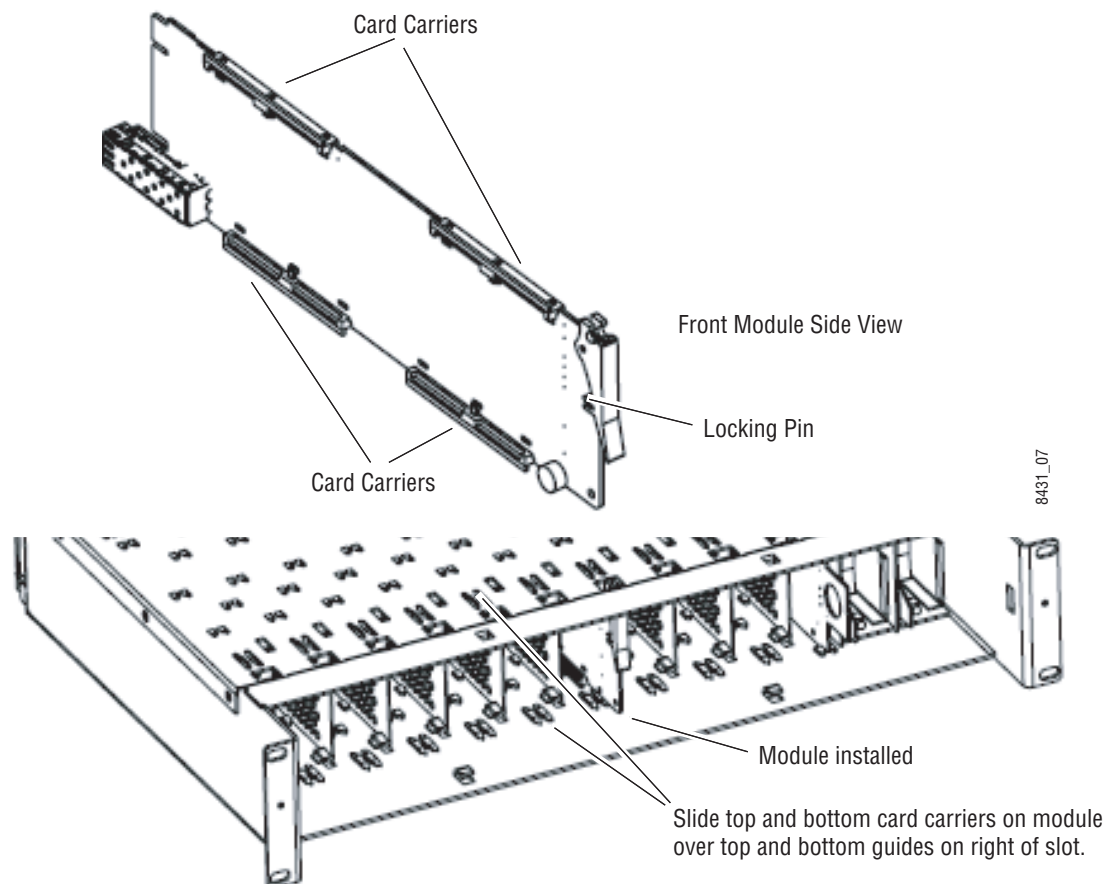
After installing the rear module, the Genlock submodule on the front module if required, and setting the Frame bus jumper if necessary, install the front module as follows:

**Note** If using a fiber optic submodule, install it through the rear module according to [Fiber Optics Submodule Installation on page 18](#).

1. Remove the front cover of the frame if required.
2. Locate the corresponding front slot.
3. 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 5](#)).
4. Carefully slide the module into the rear connector.
5. 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 5. Front Module Installation



## Fiber Optics Submodule Installation

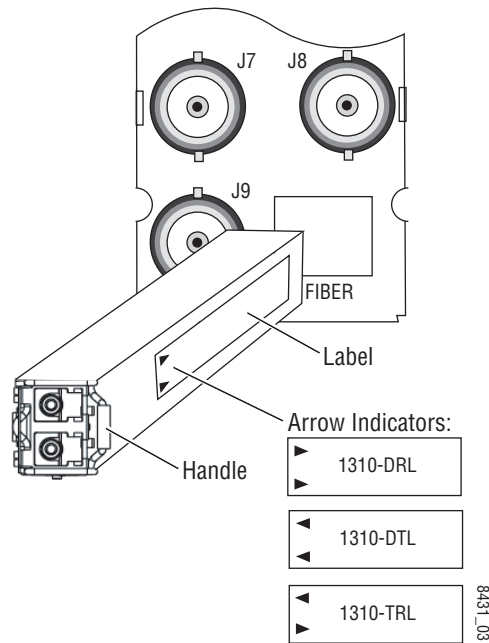
**CAUTION** The Fiber Optic submodule is static sensitive. Use static handling precautions when installing or removing the submodule.

After the front and rear modules have been installed, if required, install the SFP Fiber Optic submodule option into the rear module metal cage labeled FIBER (Figure 6). The SFP submodule is hot-pluggable and may be installed or removed with power applied to the module.

**Note** The submodule type is identified by name on the label or can be identified by the direction of the two arrow indicators on the label.

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 19](#) and [Video Outputs on page 20](#).

Figure 6. Installing Fiber Optics Submodule



### Removing an SFP Submodule

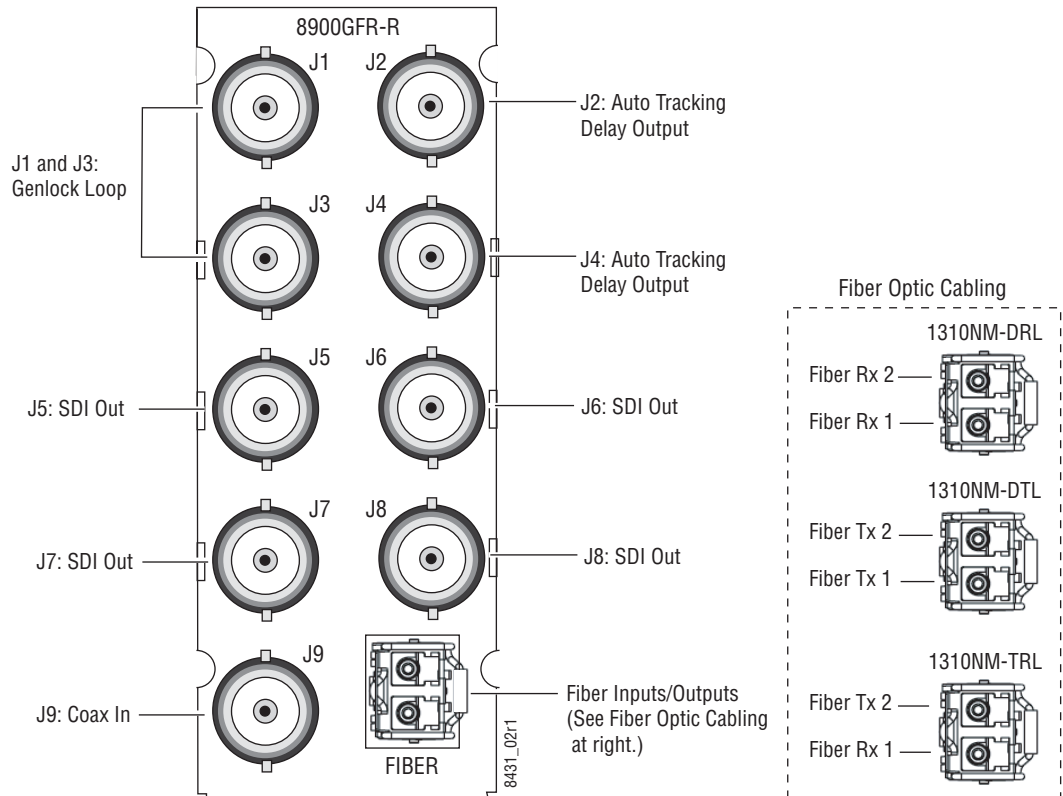
If you need to remove an SFP submodule, snap the handle out and pull the submodule slowly out of the metal cage.

## Cabling

Cabling is done on the rear BNCs of the 8900GFR-R module illustrated in [Figure 7](#). Inputs and outputs are also illustrated on the I/O Config web page ([I/O Config Web Page on page 38](#)).

**Note** It is recommended to clean the fiber optic cable connectors with a lint-free, anti-static cloth before making a connection to the fiber optic submodule.

Figure 7. 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 2 on page 45](#) for important video input and external genlock reference input video frame rate compatibility information.

For fiber optic inputs, the 1310-DRL or 1310-TRL 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 1310-TRL SFP optical submodule is installed, one fiber optic output is also available. If a 1310-DTL SFP optical submodule is installed, two fiber optic outputs are also available. Each fiber optic output must be enabled using local or remote controls. All coax and fiber optic outputs can be active at the same time.

## Genlock Loop

BNCs J1 and J3 are looping inputs to support the optional Genlock submodule on the 8985FSP/FS module with an external genlock reference (NTSC/PAL color black or Tri-level sync). Refer to [Table 3 on page 59](#) for a table of compatible frame rates for installing the external genlock reference.

Connect an external reference to J1 or J2 and loop the other input to another device or terminate the unused input.

## Auto Tracking Delay Outputs

BNCs J1 and J3 output an auto tracking delay signal that can be fed to audio modules to synchronize the audio to the Genlock reference from the 8985 module.

# Power Up

The front LED indicators and configuration switches are illustrated in [Figure 8](#). 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.

**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 8) on the top side of the module front edge should illuminate (refer to [Table 1 on page 22](#) to see the possible operating indicator combinations).

Figure 8. Front Panel LED Indicators

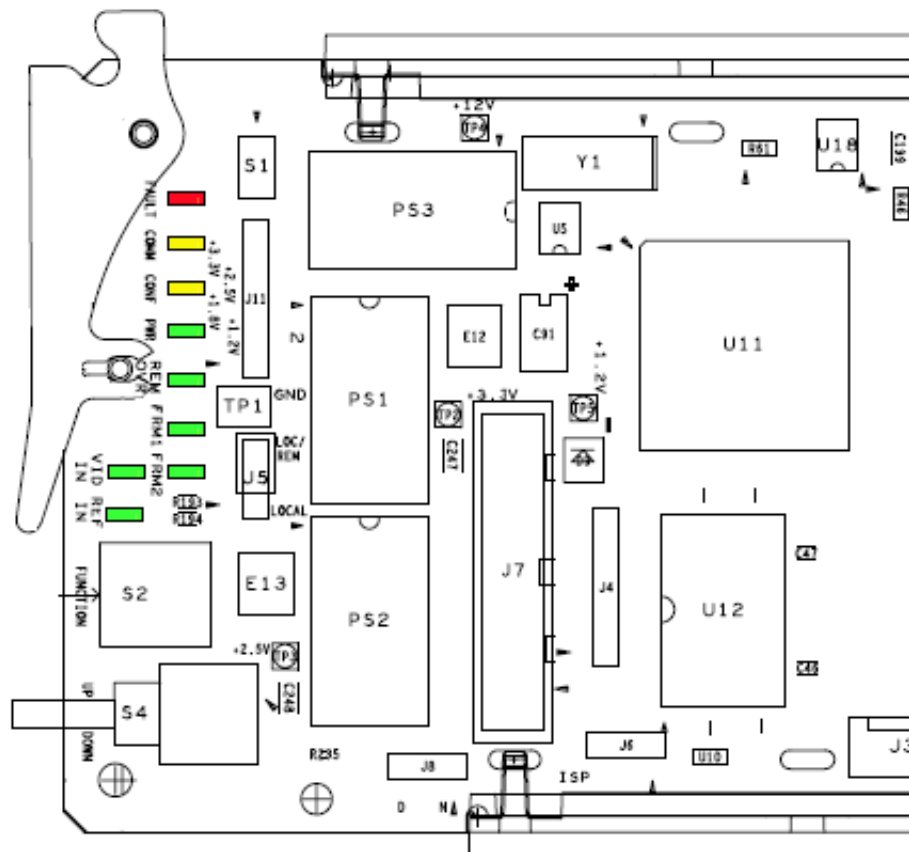


Table 1. Board Front Edge LED Names and Meaning

LED	Indication	Condition
<b>FAULT (red)</b>	Off	Normal operation.
	On continuously	Module has detected an internal fault.
	Flashing	Configuration problems. Check inputs and settings. Missing video.
<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.
	Flashing	Indicates rate of change of paddle controlled setting.
<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 if present.
	On	
<b>FRM1 (green)</b>	Off	Reference frame bus is disabled to frame on Genlock web page or no Genlock submodule is installed in slot 1.
	On	Reference frame bus is enabled on Genlock web page and Genlock submodule is installed in slot 1.
<b>FRM2 (green)</b>	Off	Reference frame bus is disabled to frame on Genlock web page or no Genlock submodule is installed in slot 3.
	On	Reference frame bus is enabled on Genlock web page and Genlock submodule is installed in slot 3.
<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	Indicates no valid reference signal is being detected or signal is not locked.
	Off	Indicates a valid reference signal is present and locked.

# Configuration

The 8985 module can only be configured remotely using the 8900NET network interface GUI or a networked Newton control panel. The 8900NET module must be running software version 4.0.2 or later. (See [Software Requirements on page 11](#) for instructions for upgrading this software.)

Refer to the following sections for configuration instructions:

- Configuration Overview ([page 23](#))
- Remote Control and Monitoring ([page 26](#))
- Configuration Parameter Summary ([page 75](#))

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 8985 module. Use this section in conjunction with the specific configuration method instructions for each configuration type. [Table 6 on page 75](#) 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 selection of the output timing source when the Frame Sync option is enabled.

### 8000GEN-SM Reference Timing

When an 8900GEN-SM submodule is installed as either a local reference to the host module or configured to output frame buses from host modules in slot 1 and slot 3, the genlock timing can be adjusted to match reference timing.

## 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%).

## Video Timing and Loss of Signal Controls

On a 8985FSP/FS module with Frame Sync, the following timing adjustments are available:

- Horizontal Timing – adjusts the horizontal delay of the channel output in pixels
- Vertical Timing – adjusts vertical delay in line increments

Also available on the 8985FSP with Frame Sync are the following controls for setting the output condition when there is a loss of input signal:

- Auto Blue – when Auto Blue is enabled on a channel, the output will automatically freeze to a blue screen when the input signal is lost on the input.
- Auto Freeze – when Auto Freeze is enabled on a channel, the output will automatically freeze on the last valid field when the input signal is lost on the input.
- A Manual freeze can be performed at any time with the following two choices:
  - Frame
  - Field

**Note** A field freeze provides less resolution and no motion artifacts in the output. In frame mode, the resolution is higher since both fields are present, but the presentation of the two fields can cause motion artifacts.

## 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 1310NM-DTL (2 outputs) or 1310NM-TRL (1 output) fiber optic submodule installed, one or both fiber outputs must be enabled for operation.

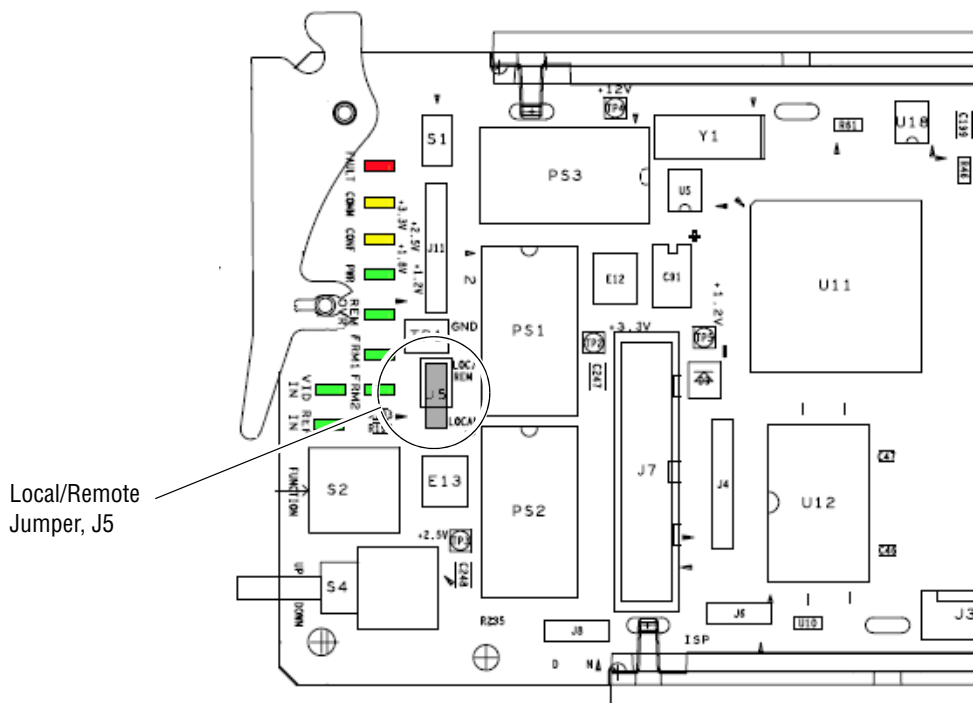
## Remote Configuration and Monitoring

8985 module 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 GeckoFlex frame. Each of these interfaces is described below.

### Local/Remote Jumper

The on-board jumper Local/Remote jumper, J5, must be set for local and remote operation (LOC/REM position, pins 2-3) or to lock out remote control (LOCAL position, pins 1-2).

Figure 9. Module Configuration Switches and LEDs



## 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.

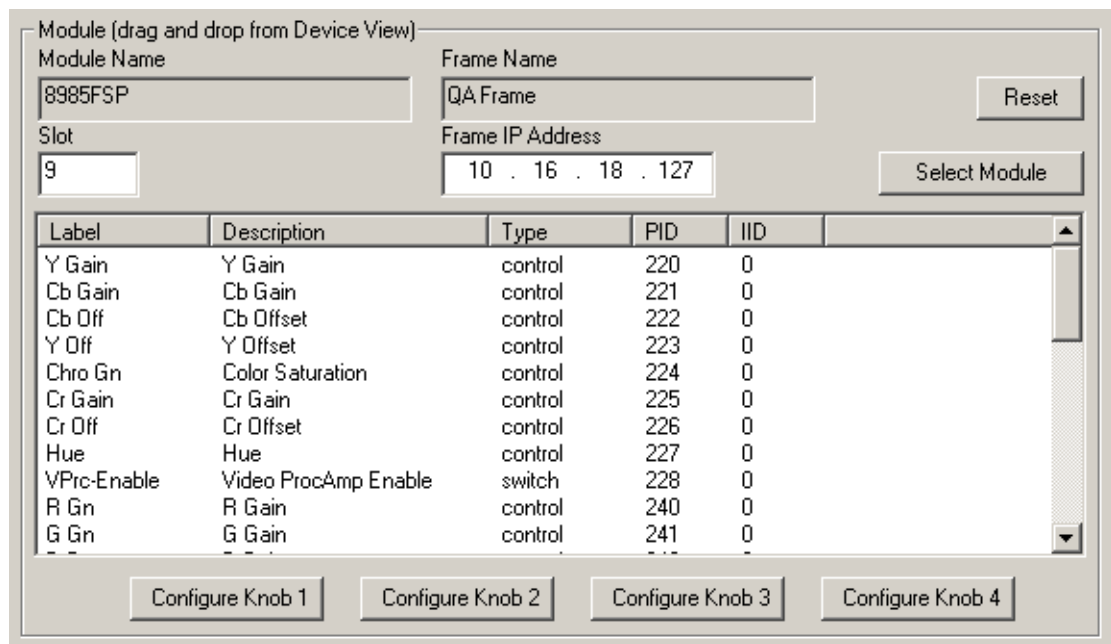
Control panel access offers the following considerations for module configuration and monitoring:

- 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 8985 module are listed in [Table 6 on page 75](#).

An example of the Newton Configurator is shown in [Figure 10](#).

Figure 10. 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 11 on page 29](#). 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 8900NET software version 4.0.2 required for this module.

For information on status and fault monitoring and reporting shown on the Status page, refer to [Status Monitoring on page 68](#).

Figure 11. 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

**Gecko Flex**

- [Status](#)
- [Configuration](#)
- [Connections](#)
- [Frame Alarm Reporting](#)
- [LED Reporting](#)
- [SNMP Reporting](#)
- [Power Supply/Demand](#)
- [1 8985FSP+GEN](#)
- [2 8925DMB-B](#)
- [3 8995UPC+GEN](#)
- [4 Media Slot 4](#)
- [5 8985FSP](#)
- [6 8925EMB-U](#)
- [7 8995DNC](#)
- [8 Media Slot 8](#)
- [9 Media Slot 9](#)
- [10 Media Slot 10](#)
- [11 8900NET](#)
- [12 Power Supply 1](#)
- [13 Power Supply 2](#)

**Status**

Model: 8900FFN Description: Module Frame  
 Frame Location: QA - BAY9  
 Frame Health Alarm **ALARM** Temperature Status **PASS**  
 Power Status **PASS**

**WARNING - Module Data or Config Errors**

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

Front Cover [No Cover](#)

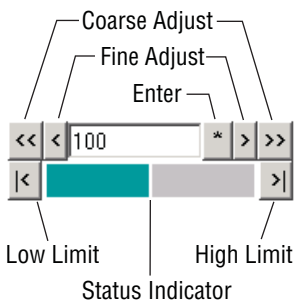
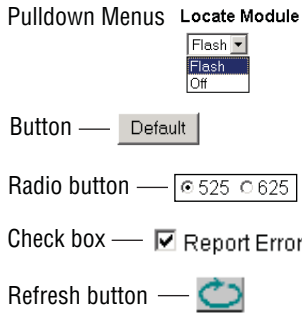
**Properties**

Vendor	Thomson, Grass Valley	Software Version	4.0.2
Media Slots	10	Network Config	Network configuration stored on frame

8431\_08r1

### 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 4.0.2 and later):



- 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 reports communication status for the frame slot and is a link to the module Status web page where Warnings and Faults are displayed.

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 12](#) for the 8985FSP, [Figure 13](#) for the 8985FS, and [Figure 14](#) for the 8985RPRC module.

Figure 12. 8985FSP Status/ID Header



Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)  
 Frame Location: [BAY 2](#) , Slot: [1](#)  
 Input Video Standard: [480i/59.94](#) Input Video: : [Present](#)  
 Output Timing Source: [Local](#) Split Screen: [Disabled](#)

Figure 13. 8985FS Status /ID Header



Model: [8985FS+GEN](#) Description: [HD/SD Frame Sync](#)  
 Frame Location: [BAY 2](#) , Slot: [8](#)  
 Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input](#) : [Present](#)  
 Output Timing Source: [Input](#)

Figure 14. 8985PRC Status /ID Header



Model: [8985PRC](#) Description: [HD/SD Proc Amp](#)  
 Frame Location: [BAY 2](#) , Slot: [9](#)  
 Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input](#) : [Present](#)  
 Output Timing Source: [Input](#) Split Screen: [Disabled](#)

When the 8985FSP or FS module has an 8900GEN Genlock submodule installed, the header shows the addition of the Genlock with + GEN ([Figure 15](#)).

Figure 15. 8985UDX + GEN Status Web Page



Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)  
 Frame Location: [not assigned](#) , Slot: [1](#)  
 Input Video Standard: [480i/59.94](#) Input Video: : [Present](#)  
 Output Timing Source: [Ref Bus 1](#) Split Screen: [Disabled](#)

The header information on each web page 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 (Frame Reference or Input) chosen on the System Config web page.
- **Split Screen** status is reported (**Enabled** or **Disabled**) as set on the System Config, Color Correction, or Video Proc Amp web pages on the 8985FSP and 8985PRC modules. Not present on the 8985FS 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 75](#).

### Web Page Links

The web interface GUI provides the following links and web pages for the 8985FSP/FS/PRC modules ([Figure 16 on page 33](#)):

- **Status** – reports input video and reference signal status, presence of Fiber Optic and Genlock option submodules, and module information ([page 34](#)),
- **I/O Config** – shows a graphic representation of inputs and outputs to the module and allows naming of each input and enabling and disabling of signal reporting ([page 38](#)),
- **Video Input** – allows selection of the video input source and provides the status of all sources, including fiber optic submodule option inputs ([page 40](#)),
- **System Config** – set input video rate and line standard, set output timing source and control Split Screen function ([page 41](#)),
- **Frame Sync** – provides horizontal and vertical timing and loss of signal controls for the 8985FSP module ([page 46](#)),
- **Color Correction** – provides RGB gain, offset and gamma correction adjustments and a control for the Split Screen function ([page 50](#)),
- **Video Proc** – provides overall video processing for the HD or SD signal ([page 52](#)),



- User Settings – allows recalling of factory defaults for all module parameters or factory signal names, and provides a save/load configuration file function (page 54),
- Genlock – appears only on the 8985FSP and FS module links when the optional 8900GEN-SM submodule is installed on the module. This is also reflected in the web page header as shown in Figure 16 on page 33. Provides status reporting for the external genlock reference and controls for enabling the Genlock, matching the reference input to a selection standard, and setting reference signal delay (page 57),
- Video Out – enable and disable the fiber optic outputs when a fiber module is installed (page 61), and
- Slot Config – provides Locate Module and Slot Memory functions along with links to the 8900NET SNMP, LED Reporting, and Frame Alarm configuration web pages (page 62).

Figure 16. 8985FSP/FS/PRC Web Page Links

<u>1 8985FSP+GEN</u>	<u>10 8985FS</u>	<u>2 8985PRC</u>
<a href="#"><u>Status</u></a>	<a href="#"><u>Status</u></a>	<a href="#"><u>Status</u></a>
<a href="#"><u>I/O Config</u></a>	<a href="#"><u>I/O Config</u></a>	<a href="#"><u>I/O Config</u></a>
<a href="#"><u>Video Input</u></a>	<a href="#"><u>Video Input</u></a>	<a href="#"><u>Video Input</u></a>
<a href="#"><u>System Config</u></a>	<a href="#"><u>System Config</u></a>	<a href="#"><u>System Config</u></a>
<a href="#"><u>Frame Sync</u></a>	<a href="#"><u>Frame Sync</u></a>	<a href="#"><u>Color Correction</u></a>
<a href="#"><u>Color Correction</u></a>	<a href="#"><u>User Settings</u></a>	<a href="#"><u>Video Proc</u></a>
<a href="#"><u>Video Proc</u></a>	<a href="#"><u>Video Out</u></a>	<a href="#"><u>User Settings</u></a>
<a href="#"><u>User Settings</u></a>	<a href="#"><u>Slot Config</u></a>	<a href="#"><u>Video Out</u></a>
<a href="#"><u>Genlock</u></a>		<a href="#"><u>Slot Config</u></a>
<a href="#"><u>Video Out</u></a>		
<a href="#"><u>Slot Config</u></a>		

## Status Web Page

Use  
this  
link

[1 8985FSP+GEN](#)  
[Status](#)  
[I/O Config](#)  
[Video Input](#)  
[System Config](#)  
[Frame Sync](#)  
[Color Correction](#)  
[Video Proc](#)  
[User Settings](#)  
[Genlock](#)  
[Video Out](#)

The Status web page ([Figure 17 on page 35](#) for the 8985FSP, [Figure 18 on page 36](#) for the 8985FS, and [Figure 19 on page 37](#) for the 8985PRC modules) shows the input signal status of each of the video and the reference inputs and outputs. It also provides status reporting for the optional 8900GEN-SM and Fiber Optic submodules. Color coding of the display and the Status LED indicates the signal status. Refer to [Status Monitoring on page 68](#) for a complete explanation of the color coding.

### Module Physical Structure

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 – not monitored in this application.
- Genlock Ref In (8985FSP/FS) – indicates the status of the external genlock reference signal at BNCs J1 and J3 (Genlock Loop).
- Local Ref (8985FSP/FS) – indicates the status of the internally generated genlock reference signal from the 8900GEN-SM submodule to the front module.
- Frame Bus – indicates the status of the communication bus to the 8900NET module.
- Ref 1 and Ref 2 In (From Frame) – the Ref 1 arrow will be present when Frame Bus 1 has been enabled on the module in slot 1. The Ref 2 arrow will be present when Frame Bus 2 has been enabled on the module in slot 3 of the frame.

When the module detects an error, a warning messages, such as signal or reference not present, will appear between the lines below the status graphic as illustrated in [Figure 17 on page 35](#). Refer to the [I/O Config Web Page on page 38](#) for information on disabling the status reporting.

**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.

The installation status of the Genlock Module or Fiber Optic submodule will also be reported here as well as being shown in the graphic.

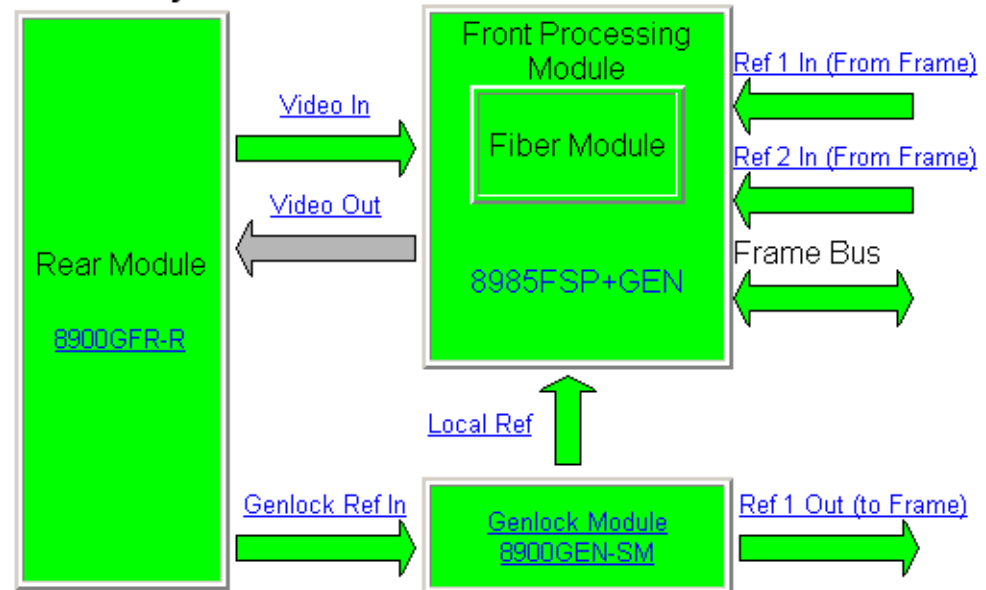
Information about the module, such as part number, serial number, hardware revision and software and firmware versions, and asset tag number (assigned on the Slot config web page) are given in a read-only section at the bottom of the display.

Figure 17. 8985FSP Status Web Page



Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)  
 Frame Location: [QA Bay 2- test](#) , Slot: [1](#)  
 Input Video Standard: [480i/59.94](#) Input Video: [Coax Input : Present](#)  
 Output Timing Source: [Ref Bus 1](#) Split Screen: [Disabled](#)

**Module Physical Structure**



Fiber Video Input Signal Not Detected

**Status:**

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

**Front Module:**

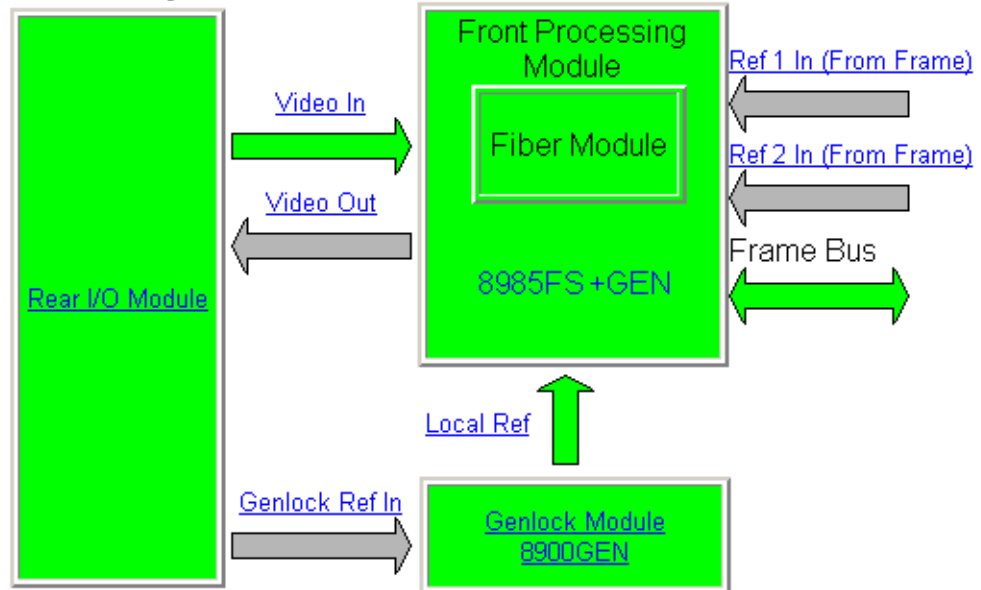
Part Number: [671-6724-00](#)  
 Serial Number: [CM060500203](#)  
 Hardware Revision: [00](#)  
 Firmware Image 1 Version: [inactive](#)  
 Firmware Image 2 Version: [1.1.9](#)  
 Firmware Image 3 Version: [inactive](#)  
 Firmware Image 4 Version: [inactive](#)  
 Software Version: [1.2.0](#)  
 Boot Version: [1.0.3](#)  
 Asset Tag:

Figure 18. 8985FS Status Web Page



Model: [8985FS](#) Description: [HD/SD Frame Sync](#)  
 Frame Location: [BAY 2](#) , Slot: [8](#)  
 Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input : Present](#)  
 Output Timing Source: [Input](#)

**Module Physical Structure**



**Status:**

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

**Front Module:**

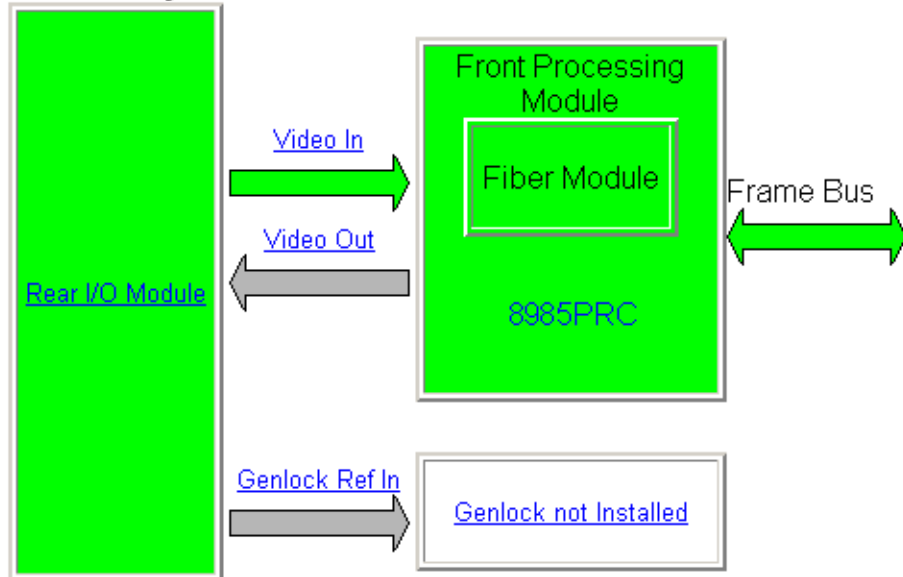
Part Number: [671-6724-00](#)  
 Serial Number: [CM060500208](#)  
 Hardware Revision: [00](#)  
 Firmware Image 1 Version: [0.1.8](#)  
 Firmware Image 2 Version: [inactive](#)  
 Firmware Image 3 Version: [inactive](#)  
 Firmware Image 4 Version: [inactive](#)  
 Software Version: [1.0.0](#)  
 Boot Version: [1.0.0](#)  
 Asset Tag:

Figure 19. 8985PRC Status Web Page

**Status**

Model: [8985PRC](#) Description: [HD/SD Proc Amp](#)  
 Frame Location: [BAY 2](#) , Slot: [9](#)  
 Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input : Present](#)  
 Output Timing Source: [Input](#) Split Screen: [Disabled](#)

**Module Physical Structure**



[Genlock Module is not installed](#)

**Status:**

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

**Front Module:**

Part Number: [671-6724-00](#)  
 Serial Number: [CM060500203](#)  
 Hardware Revision: [00](#)  
 Firmware Image 1 Version: [0.1.8](#)  
 Firmware Image 2 Version: [inactive](#)  
 Firmware Image 3 Version: [inactive](#)  
 Firmware Image 4 Version: [inactive](#)  
 Software Version: [1.0.0](#)  
 Boot Version: [1.0.0](#)  
 Asset Tag:

## I/O Config Web Page

Use  
this  
link

[1 8985FSP+GEN](#)

[Status](#)

[I/O Config](#)

[Video Input](#)

[System Config](#)

[Frame Sync](#)

[Color Correction](#)

[Video Proc](#)

[User Settings](#)

[Genlock](#)

[Video Out](#)

Use the I/O Config web page ([Figure 20 on page 39](#)) for the following:

### Rear Connectors

All of the input and output connectors on the corresponding 8985FSP rear module are illustrated on the I/O Config web page. 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. 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 [Status Monitoring on page 68](#) for an explanation of the color coding and using an SNMP monitoring application.

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

Figure 20. 8985FSP I/O Config Web Page

**I/O Config**











Model: 8985FSP+GEN Description: HD/SD FS Proc Amp

Frame Location: BAY 2 , Slot: 9

Input Video Standard: 480i/59.94 Input Video: Coax Input : Present

Output Timing Source: Local 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		Audio Tracking Delay
			J3			J4		Audio Tracking Delay
		Output	J5			J6		Output
		Output	J7			J8		Output
Coax Input	<input checked="" type="checkbox"/>	COAX Video Input	J9			Fiber	<input checked="" type="checkbox"/>	Fiber Video In/Out 2 Fiber 2
							<input checked="" type="checkbox"/>	Fiber Video In/Out 1 Fiber 1

**Legend:**

Present
Not Present
Not Monitored

## Video Input Web Page

Use  
this  
link

- [1 8985FSP+GEN](#)
- [Status](#)
- [I/O Config](#)
- [Video Input](#)
- [System Config](#)
- [Frame Sync](#)
- [Color Correction](#)
- [Video Proc](#)
- [User Settings](#)
- [Genlock](#)
- [Video Out](#)
- [Slot Config](#)

Use the Video Input web page (Figure 21) 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 the 1310NM-DRL or 1310NM-TRL submodule is installed, or
  - **Fiber RX 2** – will be present when the 1310NM-DRL 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 21. Video In Web Page



Model: [8985FS+GEN](#) Description: [HD/SD Frame Sync](#)  
 Frame Location: [BAY 2](#) , Slot: [9](#)  
 Input Video Standard: [1080i/59.94](#) Input Video: [Coax Input : Present](#)  
 Output Timing Source: [Local](#)  
 Fiber Module Type: [RX/TX](#)

### Video Input Selection

	Select Input Video	Signal Name	Signal State
Coax	<input checked="" type="radio"/>	<a href="#">Coax Input</a>	<a href="#">Present</a>
Fiber RX1	<input type="radio"/>	<a href="#">Fiber 1</a>	<a href="#">Not Supported</a>
Fiber RX2	<input type="radio"/>	<a href="#">Fiber 2</a>	<a href="#">Present</a>

[Defaults](#)



## System Config Web Page

- Use this link
- [1 8985FSP+GEN](#)
  - [Status](#)
  - [I/O Config](#)
  - [Video Input](#)
  - [System Config](#)
  - [Frame Sync](#)
  - [Color Correction](#)
  - [Video Proc](#)
  - [User Settings](#)
  - [Genlock](#)
  - [Video Out](#)
  - [Slot Config](#)

Use the System Config web page ([Figure 23 on page 44](#)) 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 75](#) for a complete list of available input types and rates.

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

**Note** The input video must be set to the same frame rate (or compatible frame rate as listed in [Table 2 on page 45](#)) as the reference input when the input video is associated with the reference input in the Output Timing controls for proper genlocking.

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 22](#)) will appear. Wait for the operation to complete then select the **Refresh** button to update the web page.

Figure 22. Wait Page



Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)  
 Frame Location: [QA Bay 2- test](#) , Slot: [1](#)

## *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.

### Output Timing

Select the Primary and Secondary output timing source for the module as either **Local** (external reference from the 8900GEN-SM submodule mounted on this module), **Ref Bus 1** (8900GEN-SM submodule is mounted on module in slot 1 and jumpered for outputting a Ref 1 frame bus), **Ref Bus 2** (8900GEN-SM submodule is mounted on module in slot 3 and jumpered

for outputting a Ref 2 frame bus), or **Input**, the reference is taken from the input video. The signal and genlock status of each reference source will be reported in the Status and Genlock columns.

When a Secondary reference source is selected that is different than the Primary, the module can be configured to switch automatically to the Secondary selected if the Primary is lost or becomes unlocked or invalid. If you do not want this action of switching to a secondary, set the Primary and Secondary sources to the same source or set the Switch to Primary control below to **Manual**.

Refer to [8000GEN-SM Reference Timing on page 23](#) for an overview of using the 8900GEN-SM submodule for reference timing. Also refer to the *8900GEN-SM Installation Manual* available online for complete details for using this submodule for timing applications.

### Reference Restore

If the Primary source has failed and a Secondary source is selected and valid, the following controls allow you to set the module to switch back to the Primary automatically or manually and determine the amount of time before the Primary is restored.

- **Switch to Primary** – set this control to **Manual** if you wish to manually return to the Primary reference when it becomes valid or locked again or **Auto** to allow the module to switch back to the Primary reference.
- **Reference Switchback Delay** – when the control above is set for **Auto**, set the amount of time to allow between switching from the Secondary reference back to the restored Primary. The switchback time has a minimum recovery time of 30 seconds to assure that the Primary is locked and valid before the module switches back to this source.

### Primary – Secondary Phase Difference

This graphic is provided to show the total phase difference between the Primary and Secondary reference signals. When the bar is green and remains in the area before the horizontal indicator, the two references are in a range where switching between the two will show no measurable disturbance in the output video (approximately 72 nS).

When the phase difference is larger than the recommended amount, the bar will indicate by showing a second red bar. This indicates that the phase difference is now such that switching between the two references will show a disturbance in the output video. This can be caused by a loss of one of the references or a mis-adjustment in the reference output delay of either reference. The total phase error shown in this graphic represents approximately 1 uS.

If the red bar appears, check the System Config page for the presence and lock status of both the Primary and Secondary references. If there is a timing difference, use the Genlock web page timing controls to bring the two references into the green bar range. Refer to the [Genlock Web Page on page 57](#).

### 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.
- **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 23. System Config Web Page

**System Config**

Model: 8985FSP+GEN Description: HD/SD FS Proc Amp

Frame Location: QA Bay 2- test , Slot: 1

Input Video Standard: 480i/59.94 Input Video: Coax Input : Present

Output Timing Source: Ref Bus 1 Split Screen: Disabled

### Input Video

Input Type	Input Rate
<input type="radio"/> HD 59.94	480i ▾
<input checked="" type="radio"/> SD	
<input type="radio"/> HD 50	
<input type="radio"/> HD 24	

### Output Timing

Source Selection	Primary	Secondary	Status	GenLock
Local	<input type="radio"/>	<input type="radio"/>	Present	Locked
Ref Bus 1	<input checked="" type="radio"/>	<input type="radio"/>	Present	Locked
Ref Bus 2	<input type="radio"/>	<input checked="" type="radio"/>	Present	Locked
Input Video	<input type="radio"/>	<input type="radio"/>	Present	NA

### Test Output

Colorbars  Enabled

### Reference Restore

Switch to Primary Auto ▾

Reference Switchback Delay (Seconds)

### Primary - Secondary Phase Difference

**Split Screen**

Split  Enabled

Orientation	Position (%)
<input checked="" type="radio"/> Vertical	<input type="button" value="&lt;&lt;"/> <input type="button" value="&lt;"/> <input style="width: 50px; text-align: center;" type="text" value="50"/> <input type="button" value="*"/> <input type="button" value="&gt;"/> <input type="button" value="&gt;&gt;"/>
<input type="radio"/> Horizontal	<input type="button" value=" &lt;"/> <input style="width: 100px; background-color: #00a0a0;" type="text"/> <input type="button" value="&gt; "/>

Defaults

Table 2. Input Video and Frame Reference Compatibility

Video Input Standard	Reference Detected	Mismatch Warning
<b>480i</b>	NTSC	None
	1080i 59.94 TLS	None
	720p 59.94	Yes <sup>1</sup>
<b>576i</b>	PAL	None
	1080i 50 TLS	None
	720p 50 TLS	Yes <sup>1</sup>
<b>1080i 59.94</b>	1080i 59.94 TLS	None
	NTSC	None
	720p 59.94 TLS	Yes <sup>1</sup>
<b>720p 59.94</b>	720p 59.94 TLS	None
	NTSC	None
	1080i 59.94 TLS	Yes <sup>1</sup>
<b>1080i 50</b>	1080i 50 TLS	None
	PAL	None
	720p 50 TLS	Yes <sup>1</sup>
<b>720p 50</b>	720p 50 TLS	None
	PAL	None
	1080i 50 TLS	Yes <sup>1</sup>
<b>1080p 24</b>	1080ip 24 TLS	None
	1080sf 24 TLS	None
	PAL	Yes <sup>1</sup>
	1080i 50 TLS	Yes <sup>1</sup>
	720p 50 TLS	Yes <sup>1</sup>
<b>1080sf 24</b>	1080isf 24 TLS	None
	1080p 24 TLS	None
	PAL	Yes <sup>1</sup>
	1080i 50 TLS	Yes <sup>1</sup>
	720p 50 TLS	Yes <sup>1</sup>

<sup>1</sup> A warning will be generated on both the Status and Genlock web pages when this condition occurs.

## Frame Sync Web Page

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The Frame Sync web page ([Figure 24 on page 48](#) for Local or Reference Bus reference and [Figure 25 on page 49](#) for Input reference) provides horizontal and vertical timing and loss of signal controls for the 8985FSP module.

**Note** The controls available on the Frame Sync page depend on the Output Timing Source selected on the System Config web page.

### Minimum Delay Mode

A minimum delay can be enabled to bypass portions of the frame sync memory to allow an absolute minimum amount of delay through the module. To enable this mode, check the **Enabled** checkbox. Refer to the Electrical Length [Specifications on page 65](#) for notes on using this mode.

### Timing Adjustment

When the Frame Sync option is present and the **Local** output timing source is selected, horizontal and vertical timing adjustments can be made on the output video as required relative to the external reference with the following controls

- **H Timing (Pixels)** – the horizontal timing can be adjusted in pixels relative to the external reference.
- **V Timing (Lines)** – the vertical timing can be adjusted in lines relative to the external reference.
- **Multi-Frame Delay** – this control allows you to add up to 6 frames of delay. When the H and V Timing controls are set to maximum, the total delay of the module will be 8 frames (when **Minimum Delay Mode** is not selected).

### Loss of Signal Operation

Set the operation to be performed by the module upon loss of input signal when a Local external reference is present (**Auto Blue**, **Auto Freeze**, or **Pass**).

When there is no external reference (output timing set to Input), the module will default to pass the signal to the output.

### Manual Freeze Mode

Select one of the radio buttons (**Frame** or **Field**) to perform a manual freeze on the output.

## Delay Wrap Position

This indicator will display with a blue bar, the fraction of the final frame of actual video delay through the frame sync. It will not indicate if multiple frames have been selected with the Multi-Frame Delay control.

For example, with 1080i video and Minimum Delay Mode not selected, if 600 lines plus 5 frames of delay is entered by the user, that actual delay through the module will be anywhere from about 6 to 7 frames depending on the following conditions:

- a. If the module is in Delay (Input-Timed) Mode, the delay through the module will be about 6.5 frames, and the Delay Wrap Position will be at about 50% of full scale.
- b. If the module is in Frame Sync (Genlock) Mode, the delay through the module will be about 6.5 frames if the input video has zero delay with respect to the genlock reference frame position, and the Delay Wrap Position will be at about 50% of full scale. As this input video delay with respect to the genlock reference frame position is changed from -0.5 to +0.5 frame periods, the delay through the module will change from about 6 to 7 frame periods, with the Delay Wrap Position changing from about 0 to 100% of full scale.

In summary, the Electrical Length of the module can be estimated as the following:

- 1 frame minus 5 lines (Minimum Delay Mode not selected), or
- 150 pixels (Minimum Delay Mode selected) + Multi-Frame Delay + Delay Wrap Position (% of full scale) X (1 frame period).

Figure 24. Frame Sync Web Page – Local or Frame Bus Reference

### **Frame Sync**

Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)

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

Input Video Standard: [480i/59.94](#) Input Video: [Coax Input : Present](#)

Output Timing Source: [Ref Bus 1](#) Split Screen: [Disabled](#)


Minimum Delay Mode <input type="checkbox"/> Enabled	Loss of Signal Operation <input type="radio"/> Pass <input checked="" type="radio"/> Auto Freeze <input type="radio"/> Auto Blue
<b>Timing Adjustment</b> H Timing (pixels) [[ < 0 * > >>]  <  >	Manual Freeze Mode <input checked="" type="radio"/> None <input type="radio"/> Frame <input type="radio"/> Field
V Timing (lines) [[ < 600 * > >>]  <  >	
Multi-Frame Delay (frames) [[ < 0 * > >>]  <  >	
Defaults	

### Delay Wrap Position





Figure 25. Frame Sync Web Page – Input Reference

**Frame Sync** 

Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)  
 Frame Location: [QA Bay 2- test](#) , Slot: 1  
 Input Video Standard: [480i/59.94](#) Input Video: [Coax Input](#) : [Present](#)  
 Output Timing Source: [Input Video](#) Split Screen: [Disabled](#)

Minimum Delay Mode <input type="checkbox"/> Enabled	Loss of Signal Operation
<div style="border: 1px solid black; padding: 5px; text-align: center;">Timing Adjustment</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">                     H Timing (pixels)                      &lt;&lt; &lt; 0 * &gt; &gt;&gt;                       &lt; _____ &gt;                  </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">                     V Timing (lines)                      &lt;&lt; &lt; 0 * &gt; &gt;&gt;                       &lt; _____ &gt;                  </div> <div style="border: 1px solid black; padding: 5px;">                     Multi-Frame Delay (frames)                      &lt;&lt; &lt; 0 * &gt; &gt;&gt;                       &lt; _____ &gt;                  </div>	<div style="border: 1px solid black; padding: 5px; text-align: center; color: blue;">Pass</div>
<div style="border: 1px solid black; padding: 5px; text-align: center;">Manual Freeze Mode</div> <div style="border: 1px solid black; padding: 5px;"> <input checked="" type="radio"/> None  <input type="radio"/> Frame  <input type="radio"/> Field                 </div>	
<div style="border: 1px solid black; padding: 2px 10px;">Defaults</div>	

## Color Correction Web Page

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Use the Color Correction web page ([Figure 26 on page 51](#)) to make RGB gain, offset and gamma correction adjustments and control the Split Screen function for the 8985FSP and 8985PRC modules.

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 26. Color Correction Web Page

 **Color Correction** 

Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)

Frame Location: [BAY 2](#) , Slot: [9](#)

Input Video Standard: [576i/50](#) Input Video: [Coax Input](#) : [Present](#)

Output Timing Source: [Local](#) 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

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The Video Proc web page ([Figure 27 on page 53](#)) provides overall video processing for the HD or SD signal for the 8985FSP and 8985PRC modules.

### 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 27. Video Proc Web Pager

**Video Proc**

Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)

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

Input Video Standard: [480i/59.94](#) Input Video: [Coax Input](#) : [Present](#)

Output Timing Source: [Ref Bus 1](#) Split Screen: [Disabled](#)

**Video Processing Controls**

VPA Enable: <input type="checkbox"/> 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

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The User Settings web page (Figure 28) 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 75](#).
- **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 20 on page 39](#).

Figure 28. Set Factory Defaults Web Page

**User Settings**

Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)  
Frame Location: [BAY 2](#) , Slot: [9](#)  
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    |

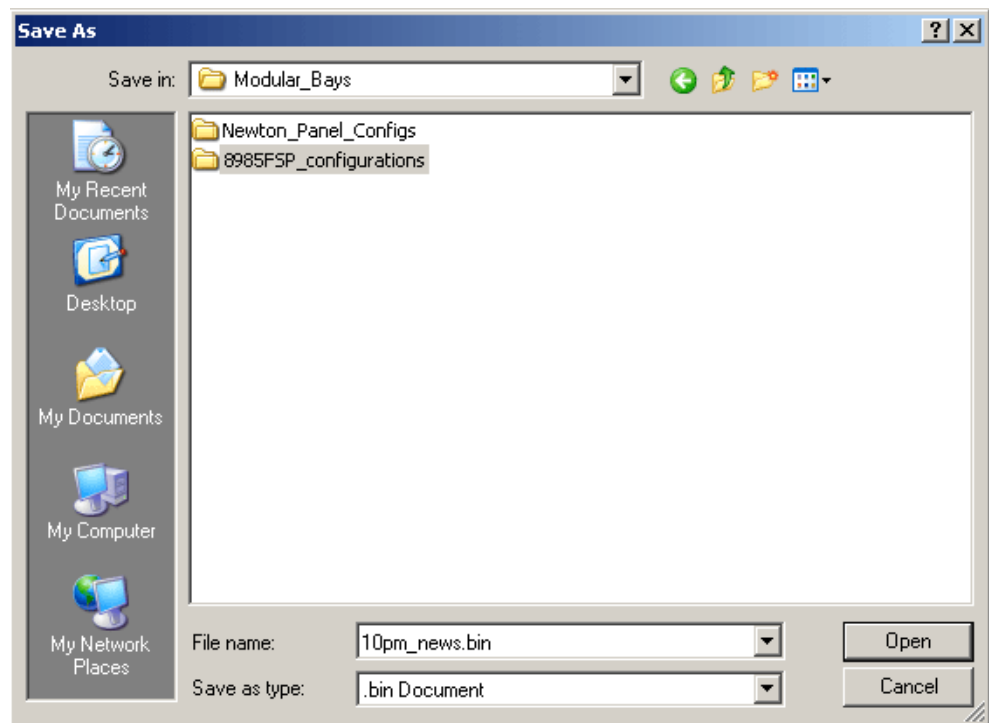
## File Operations

Configuration files from the 8985FSP 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 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 29](#).
4. Enter a name in the File name field. This file is saved as a .bin type.

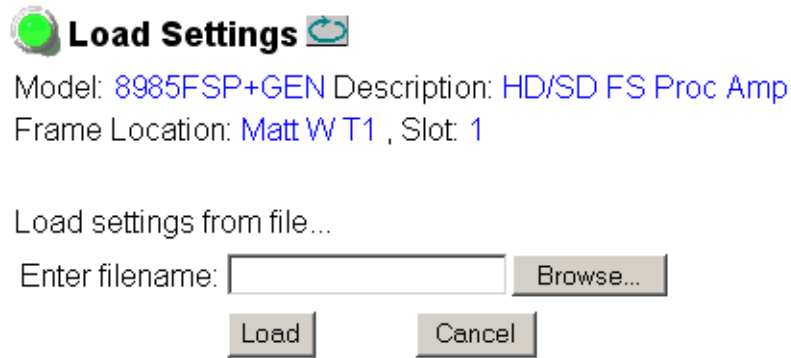
Figure 29. Save Module Configuration.



To load and recall a file, do the following:

1. Selecting the **Load From...** button on the User Settings web page ([Figure 28 on page 54](#)) which will bring up the Load Settings web page shown in [Figure 30 on page 56](#).
2. Enter a path and file name or select **Browse...** to locate the directory where the files have been saved.

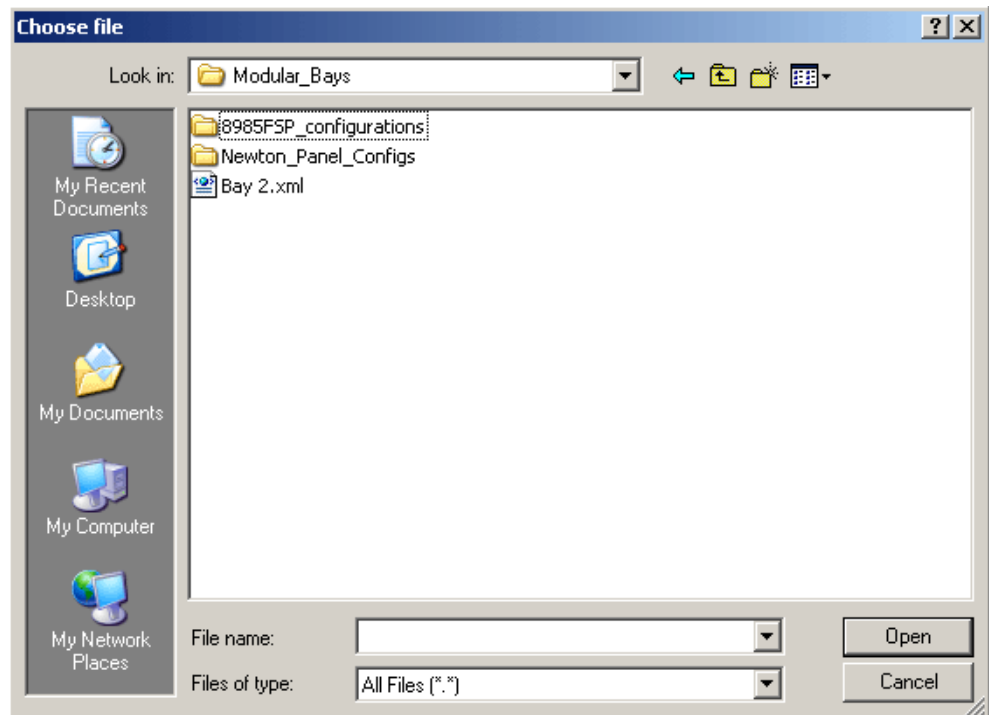
Figure 30. Load Module Configuration.



3. This will bring up the Choose File screen shown in [Figure 31](#).
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 From... web page 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 31. Choose File Screen





## Genlock Web Page

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The Genlock web page ([Figure 32 on page 58](#)) is present on 8985FSP + GEN and 8985FS + GEN modules when an 8900GEN-SM submodule is installed.

Refer to the *8900GEN-SM Installation Manual* available online for complete details for configuring the 8900GEN-SM submodule.

This web page provides reporting status for the following genlock status items:

- Genlock – reports status of Genlock function as **Enabled** or **Freerun**.
- Status – reports whether the reference input is **Locked** or **Not Locked**.
- Firmware Version – reports the firmware version of the 8900GEN-SM submodule installed on this 8985FSP module.
- Hardware Version – reports the hardware version of the 8900GEN-SM submodule installed on this 8985FSP module.
- Ref Input Standard – reports the reference input standard as detected by the 8900GEN-SM submodule that is connected to the Genlock Loop on the 8900GFR-R rear module.
- Ref Input Frame Rate – reports the frame rate of the reference input as detected by the submodule.
- Output Bus Frame Rate – reports the frame rate being output on the frame bus.
- Output Bus – reports the reference bus (Ref Bus 1 or Ref Bus 2) being output from the submodule.

### Genlock Control

The following controls are available for configuring the Genlock submodule:

- **Enable** or **Freerun** – select one of the radio buttons to enable the Genlock submodule or allow the reference to freerun.
- **Input Standard Selection** – use this control to set the input standard needed for the reference input. Refer to
- **Loop Bandwidth** – set this control for either fast locking (**Fast Lock**) to the reference or for the lowest jitter performance (**Low Jitter**) depending on the stability of the reference signal being used.

For example, if Low Jitter is selected and the Status is still **Invalid** after one minute has passed, the input reference has excessive wander that cannot be tracked in Low Jitter mode. Switch to **Fast Lock** and verify Status is **Locked** after about 10 seconds.

### Genlock Timing

Use the following controls to adjust the output timing of the genlock reference signal from this submodule:

- **Line Offset** – adjust the reference timing stream by standard definition line steps up to one full frame.
- **Coarse Offset** – provides coarse adjustment of the reference timing stream by 37 ns steps up to one line.
- **Fine Offset** – provides fine adjustment of the reference timing stream by steps up to 37 ns.

Figure 32. Genlock Web Page

**Genlock**

Model: [8900GEN-SM](#) Description: [GeckoFlex Genlock Submodule](#)  
 Genlock: [Enabled](#) Ref Input Standard: [NTSC](#)  
 Status: [Locked](#) Ref Input Frame Rate: [29.97](#)  
 Firmware Version: [64](#) Output Bus Frame Rate: [29.97](#)  
 Hardware Revision: [1](#) Output Bus: [Ref1](#)

### Genlock Control

Genlock: <input checked="" type="radio"/> Enable <input type="radio"/> Freerun
Input Standard Selection: <input type="text" value="NTSC"/>
Loop Bandwidth: <input type="radio"/> Low Jitter <input checked="" type="radio"/> Fast Lock

### Genlock Bus Timing

<p>Line Offset</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; &gt; </p>	<p>Coarse Offset (37ns)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; &gt; </p>
<p>Fine Offset (37ns/256)</p> <p>&lt;&lt; &lt; 0 * &gt; &gt;&gt;</p> <p> &lt; &gt; </p>	
<p>Drive Frame Reference Bus: <input type="text" value="Auto"/></p>	
<p><input type="button" value="Defaults"/></p>	

The external reference fed to the Genlock submodule must be configured to one of the frame rates in the reference Input Standard Selection pulldown on the Genlock web page. [Table 3](#) lists the available frame rates in the pulldown and the compatible reference inputs that will report a locked condition on the Genlock web page.

**Note** If the Input Selection Standard selected on the Genlock web page does not match the reference input exactly, a warning will be generated.

Table 3. Reference Frame Rate Compatibility

Input Standard Selection (Genlock web page)	Reference Detected	Mismatch Warning
<b>NTSC</b>	NTSC	None
	1080i 59.94 TLS	Yes <sup>1</sup>
	720p 59.94	Yes <sup>1</sup>
<b>PAL</b>	PAL	None
	1080i 50 TLS	Yes <sup>1</sup>
	720p 50 TLS	Yes <sup>1</sup>
<b>1080i 59.94 TLS</b>	1080i 59.94 TLS	None
	NTSC	Yes <sup>1</sup>
	720p 59.94 TLS	Yes <sup>1</sup>
<b>720p 59.94 TLS</b>	720p 59.94 TLS	None
	NTSC	Yes <sup>1</sup>
	1080i 59.94 TLS	Yes <sup>1</sup>
<b>1080i 50 TLS</b>	1080i 50 TLS	None
	PAL	Yes <sup>1</sup>
	720p 50 TLS	Yes <sup>1</sup>
<b>720p 50 TLS</b>	720p 50 TLS	None
	PAL	Yes <sup>1</sup>
	1080i 50 TLS	Yes <sup>1</sup>
<b>1080p 24 TLS</b>	1080p 24 TLS	None
	1080sf 24 TLS	Yes <sup>1</sup>
	PAL	Yes <sup>1</sup>
	1080i 50 TLS	Yes <sup>1</sup>
	720p 50 TLS	Yes <sup>1</sup>
<b>1080sf 24 TLS</b>	1080sf 24 TLS	None
	1080p 24 TLS	Yes <sup>1</sup>
	PAL	Yes <sup>1</sup>
	1080i 50 TLS	Yes <sup>1</sup>
	720p 50 TLS	Yes <sup>1</sup>
<b>AES 48K</b>	AES 48K	None
	AES 96K	Yes <sup>1</sup>
	Word Clock 48K	Yes <sup>1</sup>
	Work Clock 96K	Yes <sup>1</sup>

Table 3. Reference Frame Rate Compatibility

<b>Input Standard Selection (Genlock web page)</b>	<b>Reference Detected</b>	<b>Mismatch Warning</b>
<b>AES 96K</b>	AES 96K	None
	AES 48K	Yes <sup>1</sup>
	Word Clock 48K	Yes <sup>1</sup>
	Work Clock 96K	Yes <sup>1</sup>
<b>Word Clock 48K</b>	Word Clock 48K	None
	AES 48K	Yes <sup>1</sup>
	AES 96K	Yes <sup>1</sup>
	Work Clock 96	Yes <sup>1</sup>
<b>Word Clock 96K</b>	Word Clock 96K	None
	AES 48K	Yes <sup>1</sup>
	AES 96K	Yes <sup>1</sup>
	Work Clock 48K	Yes <sup>1</sup>

<sup>1</sup> This input standard will lock but will generate a Warning on both the Genlock and Status web pages but will not affect the locked condition.

## Video Out Web Page

[1 8985FSP+GEN](#)

[Status](#)

[I/O Config](#)

[Video Input](#)

[System Config](#)

[Frame Sync](#)

[Color Correction](#)

[Video Proc](#)

[User Settings](#)

[Genlock](#)

[Video Out](#)

[Slot Config](#)

Use  
this  
link

Use the Video Out web page ([Figure 33](#)) to enable or disable the SFP Fiber Optic submodule outputs when present and disable EDH insertion if desired.

**Note** Fiber optic outputs will be present when either the 1310NM-DTL or 1310NM-TRL 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 (1310NM-DTL submodule installed).
- **Fiber TX2** – check the **Enabled** checkbox to enable the output (1310NM-TRL or 1310NM-DTL submodule installed).

### EDH

To disable EDH insertion in the output, check the **Disable Insertion** checkbox.

Figure 33. Video Out Web Page

### Video Out

Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)

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

Input Video Standard: [480i/59.94](#) Input Video: [Coax Input](#) : [Present](#)

Output Timing Source: [Ref Bus 1](#) Split Screen: [Disabled](#)

Fiber Module Type: [Not Installed](#)

### Output Enables

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

### EDH

Disable Insertion

Defaults

## Slot Config Web Page

[1 8985FSP+GEN](#)

[Status](#)

[I/O Config](#)

[Video Input](#)

[System Config](#)

[Frame Sync](#)

[Color Correction](#)

[Video Proc](#)

[User Settings](#)

[Genlock](#)

[Video Out](#)

[Slot Config](#)

Use  
this  
link

Use the Slot Config web page shown in [Figure 34](#) to perform the following functions on the module:

- Locate Module
- Slot Identification
- Slot Memory
- Frame Health Reports
- LED Reports
- SNMP Trap Reports

Each of these functions is described in detail below.

Figure 34. Slot Config Web Page



Model: [8985FSP+GEN](#) Description: [HD/SD FS Proc Amp](#)

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

### Locate Module

▾

### Slot Identification

Name:

Asset Tag:

### Slot Memory

Restore upon Install

[Frame Health Reports](#)

[LED Reports](#)

[SNMP Trap Reports](#)

## 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 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 and software version 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.

Only the same module type, with the same version software should be installed in this slot. Inserting a similar module with a different version software can cause 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.

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

## 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.



# Specifications

Table 4. 8985FSP 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: 1080i 59.9 / 50 1080p24/sF24 720p 59.9 /50 SD-SDI: 480i59.9 576i50
<b>Reference Signal Input (8900GEN-SM Genlock Submodule Installed)</b>	
Signal Type:	
Analog color black	525i/59.9(NTSC); 625i/50(PAL-B); SMPTE318M (NTSC with 10 field AES ID)
Tri-level sync	720p59.94; 1080i59.94, 720p50, 1080i50, 1080p24, 1080sF/24
4 V composite sync	Not supported
Active video	Not supported due to effects on timing
Reference signal level	300 mV p-p +/- 6 dB
Reference signal to noise ration (S/N)	> 46 dB S/N
<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 (FS mode, in low jitter mode)	< 0.2 UI > 100KHz for HD < 1.0 UI 10 Hz-100KHz for HD < 0.2 UI 10 Hz and up for SD

Table 4. 8985FSP Specifications - (continued)

Parameter	Value
<b>Electrical Length</b>	
Input to output delay: Default with zero user input delay	
In delay mode or in genlock mode with zero input video delay with respect to genlock frame position (see Table 5 on page 67)	
Full-frame mode	1 frame periods in all formats
Minimum delay mode	~ 300 pixel periods in all formats
Input to output delay: User input delay in pixel steps ranging from 0 to 7 frames <sup>1</sup>	
In delay mode or in genlock mode with any input video delay with respect to genlock frame position	
Full-frame mode	1 frame minus 5 lines to 8 frames minus 5 lines <sup>2</sup>
Minimum delay mode	150 pixels to 7 frames <sup>3</sup>
<b>Optical Video Receiver/Transmitter (1310NM-DRL, 1310NM-DTL, and 1310NM-TRL)</b>	
Optical fiber interface	Compliant with SMPTE 291M-1998 and SMPTE 297M-2000
Input/Output configuration	2 inputs (DRL) or 1 input and 1 output (TRL) or 2 outputs (DTL)
Optical wavelength	1310 nm +/- 40 nm
Minimum/maximum output power (Tx)	-12 dBm < or equal to Pw TX < or equal to -7.5 dBm
Maximum reflected power	4 %
Transmission circuit fiber	Single mode
Minimum/maximum input power (Rx)	-12 dBm < or equal to Pw TX < or equal to -7.5 dBm
Detector threshold	+ 1 dBm
<b>Power</b>	
Power dissipation	< 8.0 W (with Genlock and fiber optic submodules)
<b>Environmental</b>	
Frame type	GeckoFlex
Frame temperature range	See GeckoFlex frame specification
Operating humidity range	
Non-operating temperature	

<sup>1</sup> The User input delay is specified as 0 to 6 full frames, plus one frame in pixels and lines. The Delay Wrap Position on the Frame Sync web page roughly indicates what fraction of that last frame of adjustable delay is being used. Because the input video delay with respect to genlock frame position can vary, the Delay Wrap Position with respect to User Input Delay will vary.

<sup>2</sup> Full Frame Mode always has at least 1 frame minus 5 lines of electrical length.

<sup>3</sup> Video distortion can occur with User Input Delay that gives ~150 pixels of electrical length. Increase the delay to give a total of ~300 pixels of delay for the optimum minimum delay setting.

The frame phase relationship between the SDI video stream and the analog reference signal is established according to SMPTE RP 168-2002. This defines the SDI video frame start occurring  $N$  pixel periods before the frame start of the analog video reference signal.  $N$  is defined for each video format in [Table 5](#).

Table 5. Frame Phase Relationship

<b>Format</b>	<b>Standard</b>	<b><math>N</math></b>
408i59.94	SMPTE 125M-1995	16
576i50	Rec. ITU-R BT.656-4	12
1080i59.94	SMPTE 274M-1998	88
720p59.94	SMPTE 296M-2001	110
1080i50	SMPTE 274M-1998	528
720p50	SMPTE 296M-2001	440
1080sF24	SMPTE 274-1998	638
1080p24	SMPTE 274-1998	638

## Software Updating

Software updating of the 8985 modules is done using the NetConfig Networking Application PC option. This application is available free of charge from the Thomson Grass Valley web site.

The procedure for updating software with NetConfig is given in the 8985FSP/FS/PRC Release Notes when software updates become available. Check the Thomson Grass Valley web site for update information. Refer to *Contacting Grass Valley on page 4* for more information.

## Status Monitoring

This section provides a summary of status monitoring and reporting for a GeckoFlex 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
- 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, and not available (no signal inputs).
- Reference input states including locked/valid (pass), not locked/invalid (warning), and not monitored.

## LEDs

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

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)
- 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 21](#). LEDs for the 8900NET module are described in the *8900NET Network Interface Instruction Manual*. The LED reporting can be disabled to the 8900NET module using the LED Reporting web page.

## Frame Alarm

A Frame Alarm connection is available on pins 8 and 9 of the RS-232 connector on the rear of GeckoFlex 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 web page – reports overall frame and module status in graphical and text formats.
- Module Status web page – shows specific input and reference signal status to the module along with 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.

# Service

The 8985FSP 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

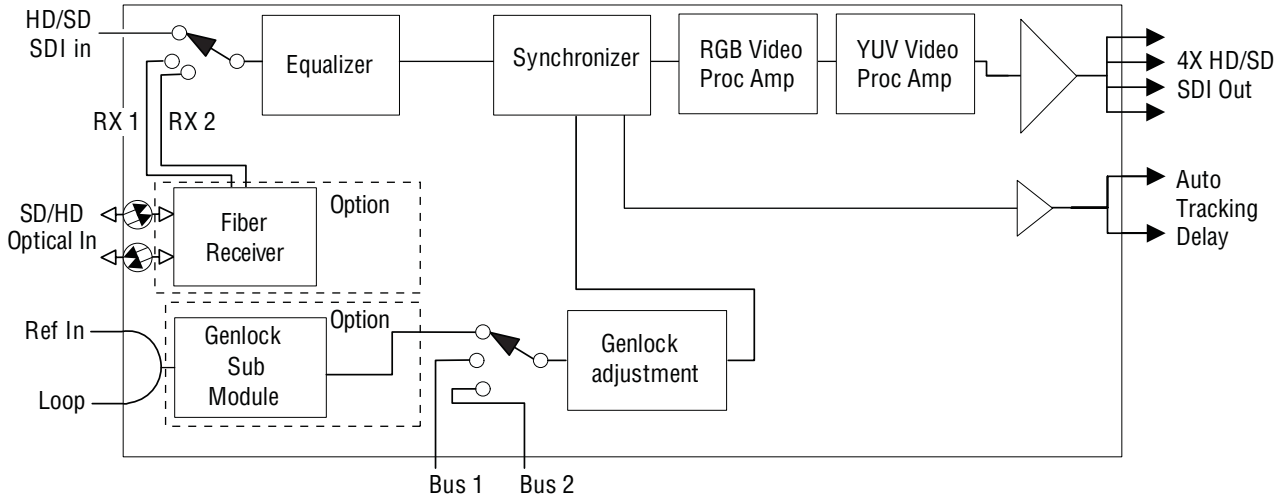
If the module is still not operating correctly, replace it with a known good spare and return the faulty module to a designated Grass Valley repair depot. Call your Grass Valley Customer Service representative for depot locations.

Refer to *Contacting Grass Valley on page 4* at the front of this document for the Grass Valley Customer Service contact information.

# Functional Description

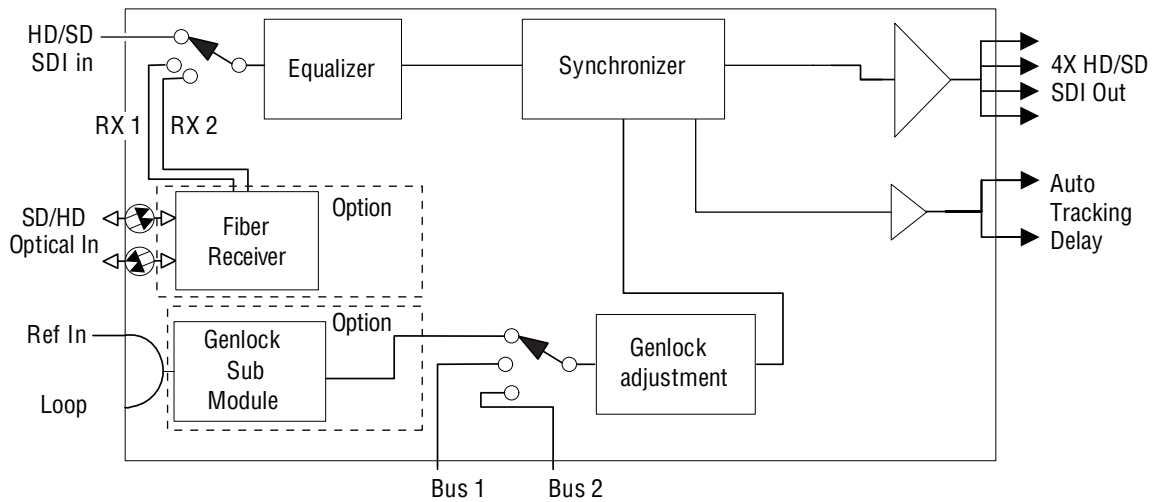
A block diagram of the 8985FSP module is shown in [Figure 35](#).

Figure 35. 8985FSP Block Diagram



A block diagram of the 8985FS module is shown in [Figure 36](#).

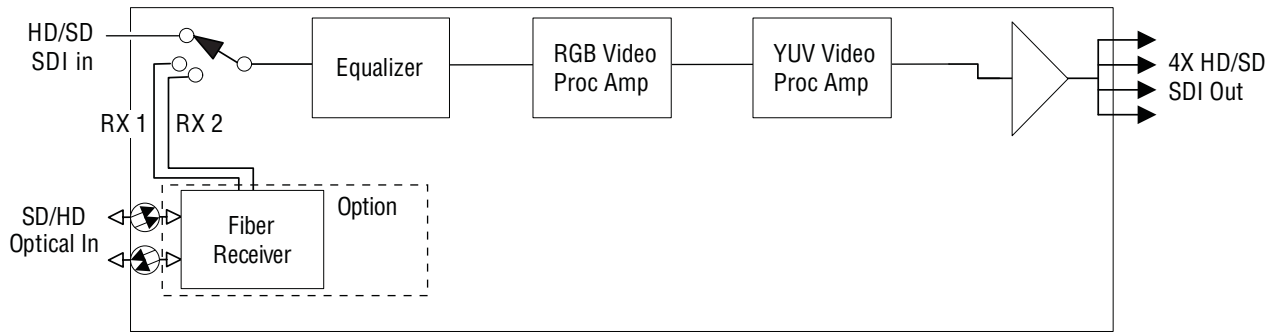
Figure 36. 8985FS Block Diagram





A block diagram of the 8985PRC module is shown in [Figure 37](#).

Figure 37. 898PRC Block Diagram





# Configuration Parameter Summary

Table 6 provides a complete summary of the 8985FSP 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 8985FSP Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Control Panel
Reference Signal Loss Reporting	On	On or Off	I/O Config/ Genlock Ref In Loop Reporting Enabled checkbox	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: 1080sf/24 or 1080p/24	System Config/ Input Video Input Type pull-down	N/A
Select primary output timing source	Local	Local, Ref 1, Ref 2, or Input	System Config/ Output Timing Primary Source Selection radio button	OutClk
Select secondary output timing source	Local	Local, Ref 1, Ref 2, or Input	System Config/ Output Timing Secondary Source Selection radio button	OutClk
Test Output Color Bars signal	Disabled	Enable or Disable	System Config/ Test Output Colorbars Enabled checkbox	ClrBars

## Configuration Parameter Summary

Table 6. Summary of 8985FSP Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Control Panel
Select switch to primary source method	Auto	Auto or Manual	System Config/ Reference Restore Switch to Primary pulldown	RefSwBk
Select amount of delay for switching back to primary	30 seconds	30 to 93.97 seconds	System Config/ Reference Restore Reference Switchback Delay (Seconds)	RefSwDly
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
Enable minimum delay mode	Disabled	Enabled or Disabled	Frame Sync/ Minimum Delay Mode Enabled checkbox	N/A
Horizontal Timing	0	0 - 857 pixels (525) 0 - 863 pixels (625) (1 pixel steps)	Frame Sync/ Timing Adjustment/ Horizontal Timing (pixels)	HTiming
Vertical Timing	0	0 - 524 lines (524) 0 - 624 lines (624) (1 line steps)	Frame Sync/ Timing Adjustment Vertical Timing (lines)	VTiming
Multi-Frame Delay control	0	0 to 6 Frames	Frame Sync/ Timing Adjustment Multi-Frame Delay (Frames)	N/A
Minimum Delay Mode enable	Disabled	Enable or Disable	Frame Sync/ Minimum Delay Mode Enable checkbox	N/A
Loss of signal operation	AutoBlue	Pass Auto Freeze, or Auto Blue	Frame Sync/ Loss of Signal Operation radio button	LOS Oper
Manual freeze mode	None	None, Frame, or Field	Frame Sync/ Manual Freeze Mode radio button	ManFrzMode
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

Table 6. Summary of 8985FSP Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Control Panel
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
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

## Configuration Parameter Summary

Table 6. Summary of 8985FSP Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Control Panel
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 <i>I/O Config Web Page on page 38.</i>	User Settings/ Recall Factory Names Set Factory Names button	N/A
Genlock enable control	Enable	Enable or Freerun	Genlock/ Genlock Control Enable or Freerun radio button	GLEnable
Genlock input standard selection	1080i 59.94	NTSC, PAL, 1080i 59.94 720p 59.94 1080i 50 720p 50 1080p 24, 1080sF 24, AES 46K, AES 96K, Word Clock 46K, or Word Clock 96K	Genlock/ Genlock Control Input Standard Selection pulldown	GLInSel
Set loop bandwidth	Low Jitter	Low Jitter or Fast Lock	Genlock/ Genlock Control Loop Bandwidth radio button	GLLoopBW
Set line offset (SD standard settings)	0 lines	NTSC: 0 to 524 lines PAL: 0 to 624 lines 1080i 59.94: 0 to 524 lines 720p 59.94: 0 to 524 lines 1080i 50: 0 to 624 lines 720p 50: 0 to 624 lines 1080p 24: 0 to 624 lines 1080sf 24: 0 to 624 lines AES 48K: 0 to 624 lines AES 96K: 0 to 624 lines Word Clock 48K: 0 to 624 lines Word Clock 96K: 0 to 624 lines	Genlock/ Genlock Bus Timing Line Offset control	GLLineOff

Table 6. Summary of 8985FSP Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Control Panel
Set coarse offset	0	NTSC: 0 to 1715 PAL: 0 to 1727 1080i 59.94: 0 to 1715 720p 59.94: 0 to 1715 1080i 50: 0 to 1727 720p 50: 0 to 1727 1080p 24: 0 to 1727 1080sf 24: 0 to 1727 AES 48K: 0 to 1727 AES 96K: 0 to 1727 Word Clock 48K: 0 to 1727 Word Clock 96K: 0 to 1727	Genlock/ Genlock Bus Timing Coarse Offset control (37 ns)	GLcors
Set fine offset	0	All Formats: 0 to 255	Genlock/ Genlock Bus Timing Fine Offset control	GLfine
Set reference source to drive frame bus	Off	Off or Auto	Genlock/ Drive Frame Reference Bus: pulldown	GLBusDrv
Enable Fiber TX1 output (1310NM-TRL or 1310NM-DTL fiber optic submodule installed).	Not Enabled	Enabled or Not Enabled	Video Output/ Fiber TX1 Enabled Checkbox	N/A
Enable Fiber TX2 output (1310NM-TRL or 1310NM-DTL fiber optic submodule installed).	Not Enabled	Enabled or Not Enabled	Video Output/ Fiber TX2 Enabled Checkbox	N/A

## *Configuration Parameter Summary*



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