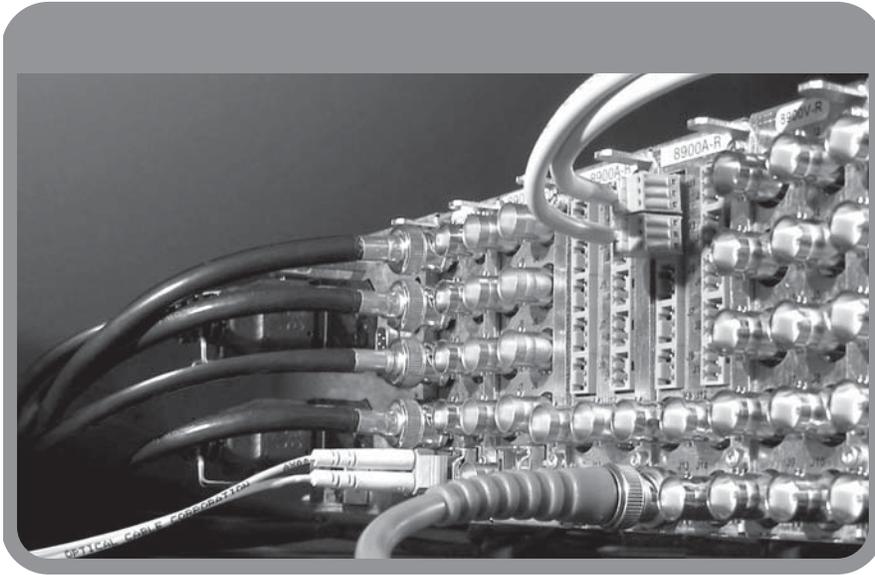


8945EDA/-D

SD/HD EQUALIZING DA MODULE



Instruction Manual
Software Version 1.3.0



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8945EDA/-D

SD/HD EQUALIZING DA MODULE

Instruction Manual

Software Version 1.3.0

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Preface

About This Manual

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

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

www.grassvalley.com/docs/modular

8945EDA and 8945EDA-D SD/HD Equalizing DA

Introduction

The 8945EDA or 8945EDA-D Wideband Front Equalizing DA provides basic equalization and distribution of a standard definition or high definition signal up to eight outputs over 75 ohm coaxial cable in SD/ASI or HD. The two models, 8945EDA (single) and 8945EDA-D (dual) must be installed in a GeckoFlex frame.

These devices can be utilized in broadcast centers, video production facilities, OB vans and production trucks. The main application of those products is the distribution of the incoming SD/ASI or HD-SDI signals to the video processing devices (routers, switchers, tape recorder, monitoring devices, etc.). Usually, those devices are located in the area of the reception transmission signal.

Features

The features of the 8945EDA and 8945EDA-D include:

- Auto cable equalization for up to 330m of cable in the case of SD-SDI and ASI signals and for up to 125m of cable in the case of HD-SDI signals,
- Accepts a wide range of standard definition or high definition input signal on one electrical input (two electrical inputs for the 8945EDA-D),
- Non-inverted outputs allow distribution of compressed signals for handling such as DVB-ASI,
- Eight HD or SD/ASI electrical outputs,
- Provides a bypass mode for non-supported signal rates,
- Provide alarm (signal presence detection) and status management,
- Supports SNMP MIB reporting basic board alarms, and
- Remote control and monitoring support: web pages, Newton control panel, NetConfig management system.

Installation

The front and the rear modules are delivered together as a set: 8945EDA front module with the 8900WE-R rear module or 8945EDA-D front module with 8900WE-R rear module.

The front modules can be plugged in and removed from a GeckoFlex frame with power on, without disrupting operation on adjacent running modules. When power is applied to the module, LED indicators reflect the initialization process (see [Power Up on page 18](#)).

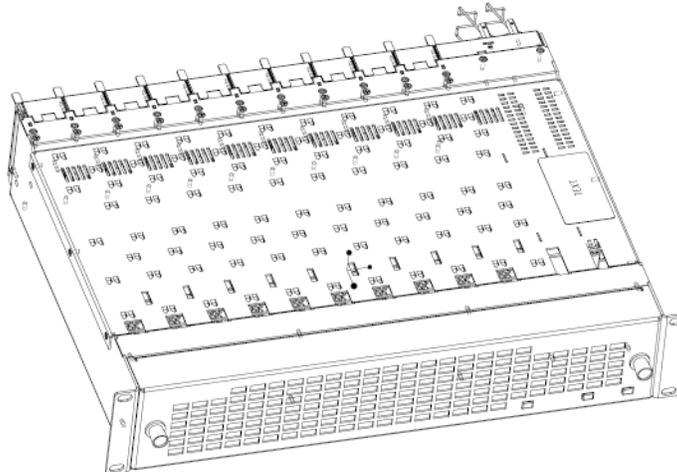
Installation of the 8945EDA module set is a process of:

1. Placing the 8900WE-R rear module in a rear frame slot,
2. Configuring the local on-board settings if not using an 8900NET (Net Card) (see [Local Configuration on page 13](#)),
3. Placing the front module in the corresponding front slot.

Module Placement in the GeckoFlex Frame

There are ten front and rear cell locations in the 2 RU GeckoFlex frame ([Figure 1](#)) to accommodate either audio, analog and digital video modules. The 8945EDA module set may be plugged into any one of the available GeckoFlex frame slots. It requires a single rear slot.

Figure 1. GeckoFlex Frame



Module Installation Precautions

Please read and follow the precautions listed below before installing the front and rear modules:

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

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

- Make every effort to leave the screws holding the retainer clips in place (do not remove them completely). They are very small and can easily drop into other equipment causing a shorting hazard. (Two turns of the screw should be enough to loosen the screws, 3 turns or more will remove it.)
- When installing a rear module, tighten the screws on the retainer clips just until snug. Do not apply more force than is necessary to seat the rear module. Refer to the **Mechanical** specifications given in [Table 5 on page 33](#).

Rear Module Installation

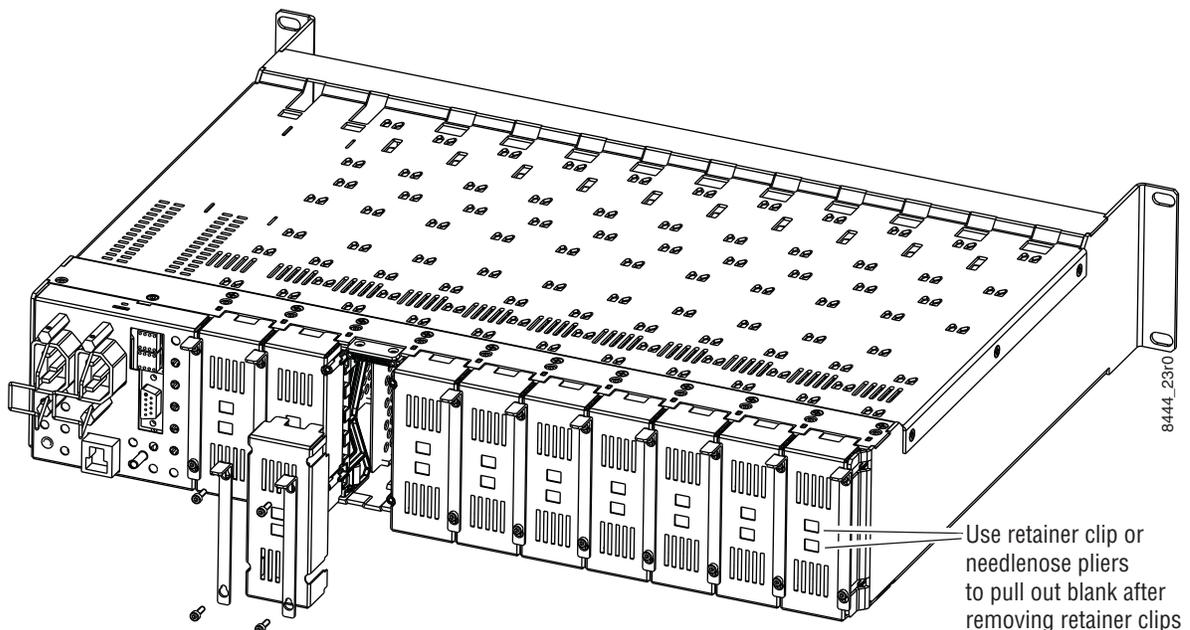
1. To remove a blank rear adapter cover (or a rear module already present), manually loosen the two screws holding each retainer clip on the rear adapter cover or rear module to the frame with the retainer clip tool provided inside the front cover of the frame (751- model frames only) or a 2 mm (5/64") hex screwdriver.

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.

1. After loosening the retainer clip screws, pull up on each retainer and completely remove it, leaving the screws in place.
2. Remove the blank rear adapter cover by inserting the retainer clip tool or needlenose pliers into the slots in the blank cover and pulling it off (Figure 2).
3. Insert the rear module into the empty slot, guiding it carefully into place.
4. Replace each retainer clip over the two screws on both sides of the module and push down to seat the retainer clip.
5. Tighten the two screws on each retainer clip just until they come into contact with the retainer clip then tighten about a 1/4 turn more (maximum torque is 4-5 inch-lb/0.45-0.6Nm). Do not force or torque the screws too tightly. The clips should not bend or be bowed.

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

Figure 2. Installing Rear Module



Front Module Installation

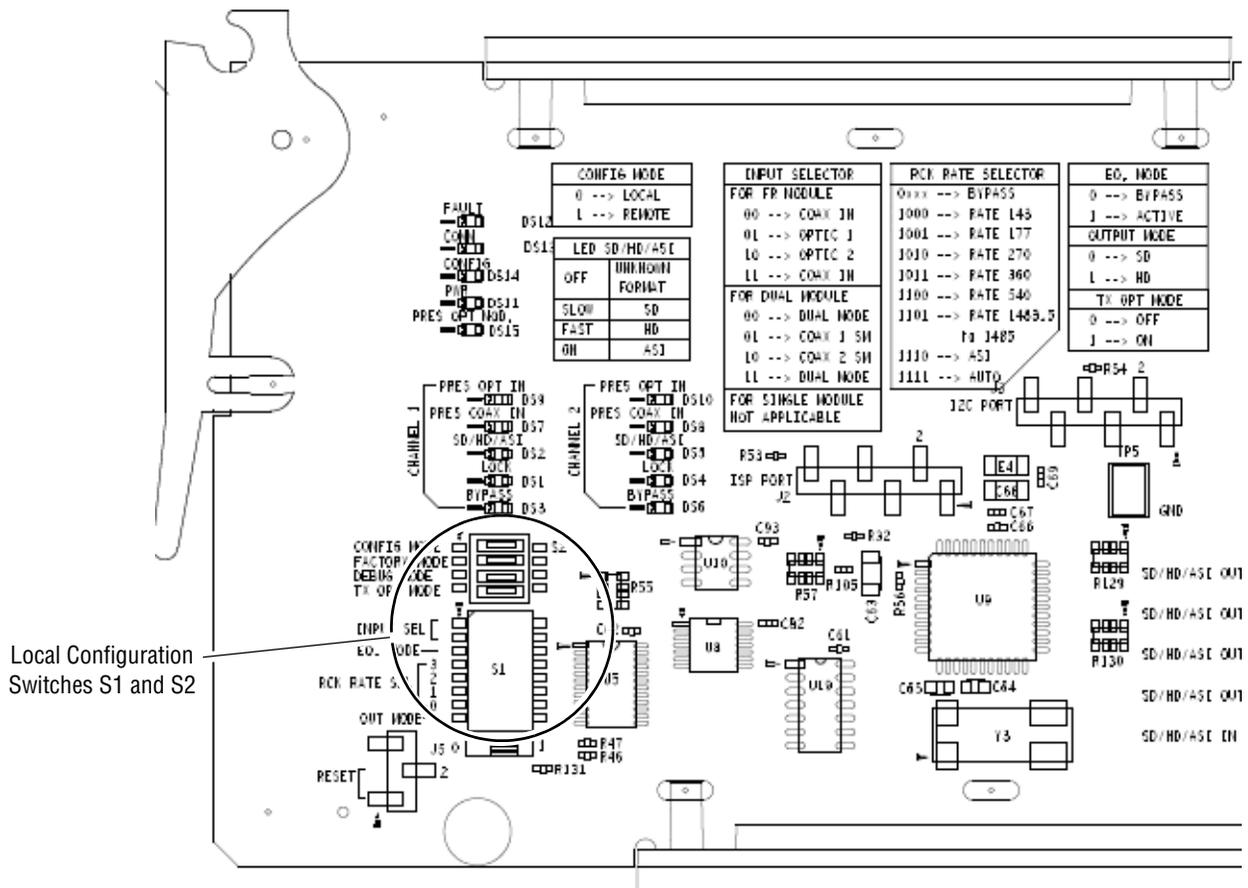
If you have an 8900NET module (Net Card) in your frame and will be configuring the module remotely with a web browser or the Newton Control Panel, install it as described in *Front Module Installation* on page 15.

If you do not have an 8900NET (Net Card) module in the GeckoFlex frame for remote monitoring and configuration, you will need to configure the module using the local onboard controls before installing it in the frame as described below.

Local Configuration

Local configuration of either model 8945EDA consists of two DIP switches (S1 and S2) highlighted in the lower left corner of [Figure 3](#). Refer to [Table 1](#) on page 14 for configuring the 8945EDA/-D with the onboard switches.

Figure 3. Configuration Switches on 8945EDA/-D Modules

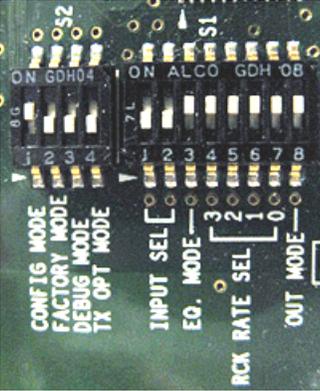


Configuration Switches S1 and S2

Table 1 gives the parameters set with the onboard switches S1 and S2 on the 8945EDA and 8945EDA-D module circuit boards. Parameters may also be set using the web page or Newton Control panel controls when the 8900NET (Net Card) module is installed in the GeckoFlex frame. Refer to the Configuration Summary table, Table 7 on page 41, for a complete list of defaults and parameters for each control type.

Note Remote control settings made with the web interface will override local settings. To lock out remote control, set the Config Mode to Off (LOCAL).

Table 1. Switch S1 and S2 Settings

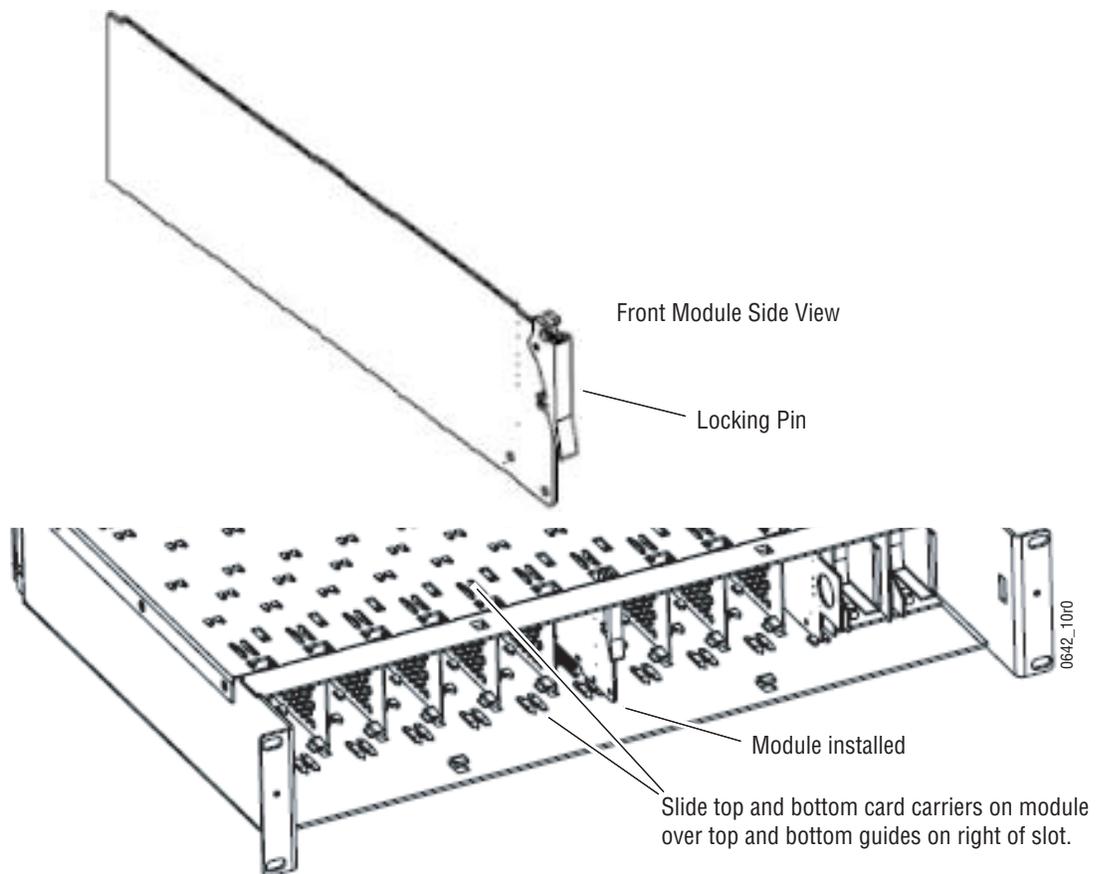
Switches S1 and S2	Function	Pin	0 (Left/Off)	1 (Right/On)		
	Switch S2					
	Config Mode	1	LOCAL (Remote control locked out)	LCL&REM (Local and Remote)		
	Factory Mode	2	Off	Factory use only		
	Test Mode	3	Off	Factory use only		
	Tx Opt Mode	4	Not used on the 8945EDA/-D			
	Switch S1					
	Input Select		Coax In 1 J9	Coax In 2 J10	Coax In 1 J9 (single)	Coax In 2 J10 (single)
		1	0	1	1	0
		2	0	1	0	1
	Coax Outputs		J1, J3, J5, J7	J2, J4, J6, J8	J1, J2, J3, J4, J5, J6, J7, J8	J1, J2, J3, J4, J5, J6, J7, J8
	Eq. Mode	3	Bypass		Active	
	Rck Rate Sel (Reclocking rate selection)					
		4	Not used on the 8945EDA/-D			
		5				
		6				
	7					
Out Mode	8	SD/ASI		HD		

Front Module Installation

After installing the rear module, install the front module as follows:

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 4).
4. Carefully slide the module into the rear connector.
5. Lock the front module ejector tab into the locking pin.

Figure 4. Front Module Installation



Cabling

Cabling to the 8945EDA or 8945EDA-D module is done on the BNCs on the 8900WE-R rear module. Refer to [Figure 5 on page 17](#) for a detailed illustration of the rear connections referenced below. The 8945EDA or 8945EDA-D will accept any of the video standards listed in the Input specifications in [Table 5 on page 33](#).

Inputs and Outputs

The 8945RDA has one input and eight outputs. Refer to [Table 2](#) and [Figure 5 on page 17](#) for cabling information.

The 8945RDA-D has two inputs each with four outputs. Refer to [Table 2](#) and [Figure 6 on page 17](#) for cabling information. It may also be configured as a single DA (see [Local Configuration on page 13](#) or [Settings Web Page on page 27](#)).

The 8945EDA or 8945EDA-D inputs conform to the video standards listed in the input specifications in [Table 5 on page 33](#).

Table 2. Cabling Inputs and Outputs

Model Number	Inputs	Outputs
8945EDA	J9 (J10 is not used)	J1, J2, J3, J4, J5, J6, J7, J8
8945EDA-D (Dual Mode)	J9 (DA 1)	J1, J3, J5, J7
	J10 (DA 2)	J2, J4, J6, J8
8945EDA-D (Single Mode)	J9 or J10 set for single mode	J1, J2, J3, J4, J5, J6, J7, J8

Figure 5. 8945EDA Rear Cabling

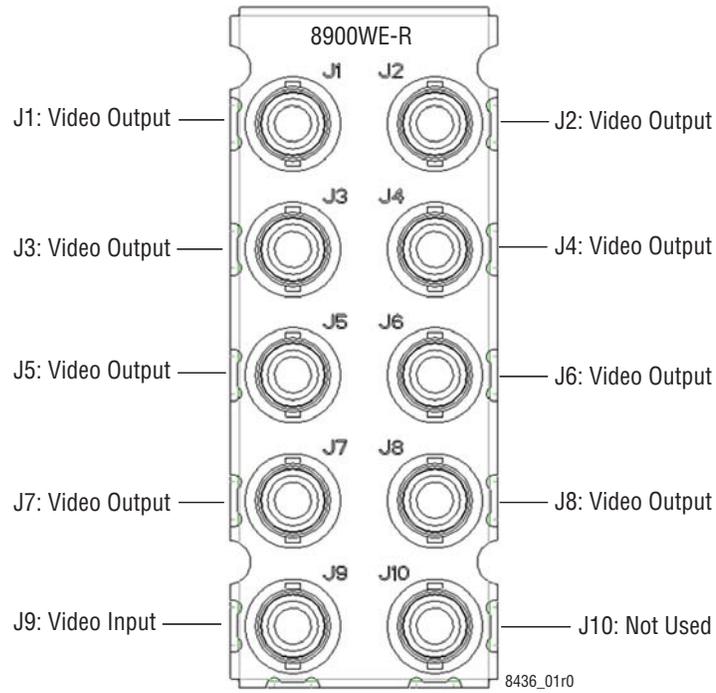
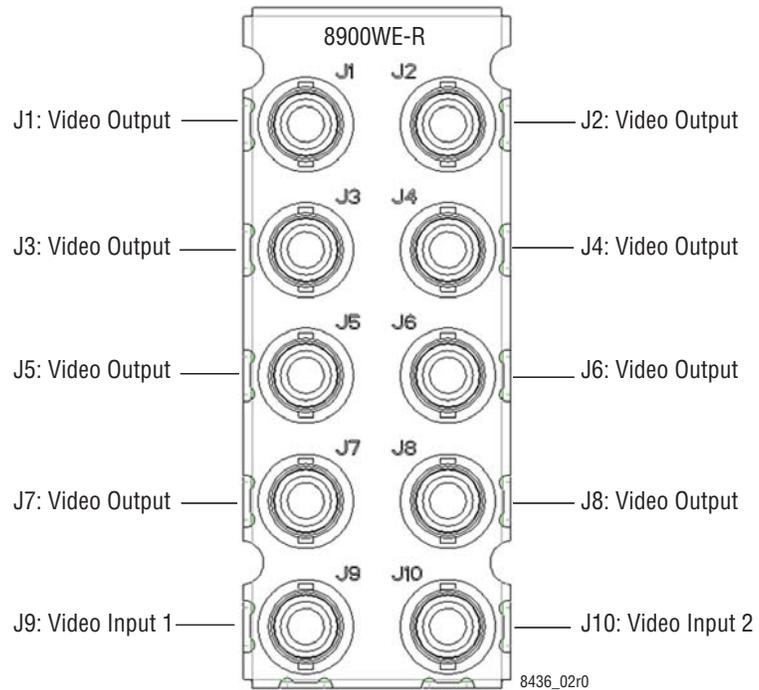


Figure 6. 8945EDA-D Rear Cabling



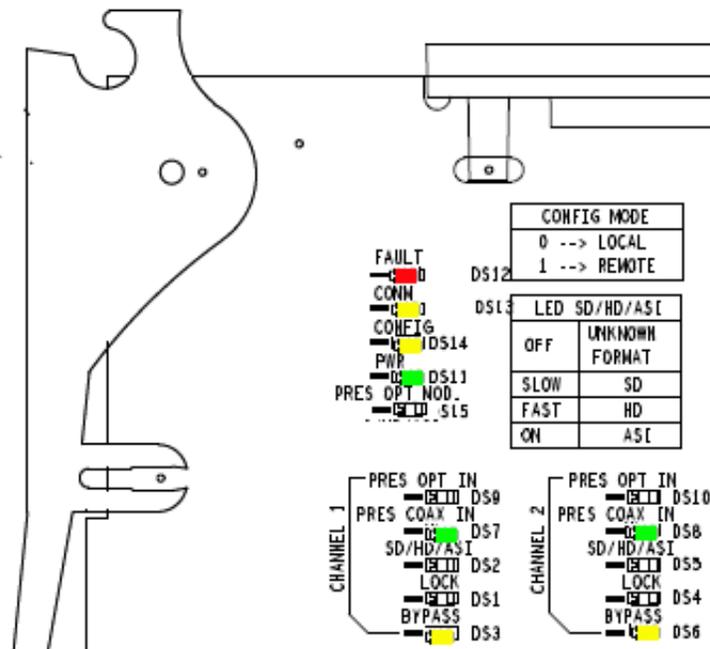
Power Up

The on-board LED (DS11) indicators are illustrated in [Figure 7](#). Upon power-up, the green PWR LED should light and the CONFIG, FAULT, and COMM LEDs should illuminate for the duration of module initialization.

Operation Indicator LEDs

With a valid input signal connected, the green on-board PWR LED, PRES IN LED should be on. Refer to [Table 3 on page 19](#) to see a complete list of possible operating conditions and the resulting indicator status.

Figure 7. LEDsIndicators



The following LEDs are not used on the 8945EDA and 8945EDA-D modules:

- PRES OPT IN,
- PRES OPT MOD,
- SD/HD/ASI, and
- LOCK.

A red FAULT LED indicates an error situation and, when noted with the other indicator LEDs, can indicate a specific problem area. [Table 3](#) describes signal output and LED indications for the various input/reference combinations.

Table 3. Indicator LEDs and Conditions Indicated

LED	Indication	Condition
FAULT (red)	Off	Normal operation
	On continuously	Module has detected internal fault
COMM (yellow)	Off	No activity on frame communication bus
	Long flash	Location Command received by the module from a remote control system
	Short flash	Activity present on the frame communication bus
CONFIG (yellow)	Off	Module is in normal operating mode
	On continuously	Module is initializing, changing operating modes or updating firmware
	Long flash	Location command received by the module from a remote control system
PWR (green)	Off	No power to module or module's DC/DC converter failed
	On continuously	Normal operation, module is powered
PRES COAX IN (green)	Off	Indicates no signal present on the coax input
	On continuously	Indicates signal present on the coax input
BYPASS (yellow)	Off	No bypass of the equalizer
	On continuously	Bypass of the equalizer

[Table 4](#) provides the possible input and output conditions that result from different input signals and conditions.

Table 4. Input and Output Conditions

Input Condition	Output Condition
Serial Digital Component (SDI)	Serial Digital Component (SDI)
HD Digital Component (SDI)	HD Digital Component (SDI)
Other carrier	Other carrier
No input	Passing

Remote Configuration

The 8945EDA and 8945EDA-D configuration and monitoring can also 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 (8900FFN). Each of these interfaces is described below.

8900NET Module Information

Refer to the *8900NET Network Interface Module Instruction Manual* available online in PDF format for information on the 8900NET Network Interface Module and setting up and operating the GeckoFlex 8900 frame network.

Note Upgrade software and instructions for the 8900NET can be downloaded from the Grass Valley ftp site.

Newton Control Panel Configuration

A Newton Control Panel (hard and/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 factory default recalls.

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

Figure 8. Newton Configurator Example

The screenshot shows the Newton Configurator interface. At the top, there are fields for 'Module Name' (8945EDA-D), 'Slot' (9), 'Frame Name' (QA Ameiva\GeckoFlex), and 'Frame IP Address' (141 . 11 . 154 . 200). There are 'Reset' and 'Select Module' buttons. Below these fields is a table with columns: Label, Description, Type, PID, and IID. The table lists various modules like 'Rout Mod 1', 'InReport 1', 'Car Dtct 1', etc. At the bottom, there are four buttons labeled 'Configure Knob 1' through 'Configure Knob 4'.

Label	Description	Type	PID	IID
Rout Mod 1	Routing Mode DA 1	switch	802	1
Rout Mod 2	Routing Mode DA 2	switch	802	2
InReport 1	Input Reporting	switch	804	1
InReport 2	Input Reporting	switch	804	2
Car Dtct 1	Carrier Detect DA 1	switch	806	1
Car Dtct 2	Carrier Detect DA 2	switch	806	2
SgnFormat1	Signal Format DA 1	switch	810	1
SgnFormat2	Signal Format DA 2	switch	810	2
Equal 1	Equalizer Mode DA 1	switch	812	1
Equal 2	Equalizer Mode DA 2	switch	812	2

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:

- 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, and reporting status for SNMP and monitoring.

Refer to the Frame Status web page shown in [Figure 9 on page 22](#). The 8900 modules can be addressed by clicking either on a specific module icon in the frame status display or on a module name or slot number in the link list on the left.

Note The physical appearance of the graphics on the web pages shown in this manual represent the use of a particular platform, browser and version of 8900NET module software. They are provided for reference only. Web pages will differ depending on the type of platform and browser you are using and the version of the 8900NET software installed in your system. This manual reflects an 8900NET module with software version 4.3.0, using Internet Explorer, the recommended web browser, and Windows XP operating system.

For information on status and fault monitoring and reporting shown on the module Status page, refer to [Status Web Page on page 24](#).

Note Click on the **Refresh** button to update the web page after any changes.

Figure 9. Frame Status Web 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

Status

Model: 8900FFN Description: Module Frame

Frame Location: lab

Frame Health Alarm WARN Temperature Status PASS

Power Status PASS

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

Front Cover No Cover

Properties

Vendor Thomson, Grass Valley Software Version 4.3.0

Media Slots 10 Network Config Network configuration stored on frame

Frame

- [Status](#)
- [Configuration](#)
- [Connections](#)
- [Frame Alarm Reporting](#)
- [LED Reporting](#)
- [SNMP Reporting](#)
- [Power Supply/Demand](#)
- [1 8945EDA](#)
- [2 8947RDA-FR](#)
- [3 Media Slot 3](#)
- [4 8947RDA-D](#)
- [5 Media Slot 5](#)
- [6 Media Slot 6](#)
- [7 8945EDA-D](#)
- [8 Media Slot 8](#)
- [9 Media Slot 9](#)
- [10 Media Slot 10](#)
- [11 8900NET](#)
- [12 Power Supply 1](#)
- [13 Power Supply 2](#)

8436_03/0

8945EDA and 8945EDA-D Links and Web Pages

The 8900 GUI provides the following links and web pages for the 8945EDA modules (Figure 10):

- Status – reports input and output signals and frame bus communication status and module information (page 24),
- Settings – allows the configuration of the inputs and outputs (page 27),
- Slot Config – provides Locate Module and Slot Memory functions along with links to the SNMP, LED Reporting, and Frame Alarm configuration web pages (page 29).

Figure 10. 8945EDA and 8945EDA-D Web Page Links

<u>7 8945EDA</u>	<u>7 8945EDA-D</u>
<u>Status</u>	<u>Status</u>
<u>Settings</u>	<u>Settings</u>
<u>Slot Config</u>	<u>Slot Config</u>

Status Web Page

Use
this
link

[7 8945EDA-D](#)
[Status](#)
[Settings](#)
[Slot Config](#)

The Status web pages ([Figure 11 on page 25](#) for the 8945EDA and [Figure 12 on page 26](#) for the 8945EDA-D) shows the signal status of the input signal and communication status with the frame bus. Color coding of the display indicates the signal status.

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.

Under the **Status** title are given the model description, the Frame location, and the slot location of the module in the frame.

The graphic shows the input and output signals available for the module. Only input signal status is reported by color in this graphic. Outputs are not monitored (always gray). The input signal status reporting for CH1 and/or CH 2 can be disabled on the I/O Config web page.

Also shown is the rear and front module status. Information about the module, such as Part Number, Serial Number, Hardware Revision, Software Version, and Asset Tag number (assigned on the Slot Config web page) are given in table format at the bottom of the Status web page.

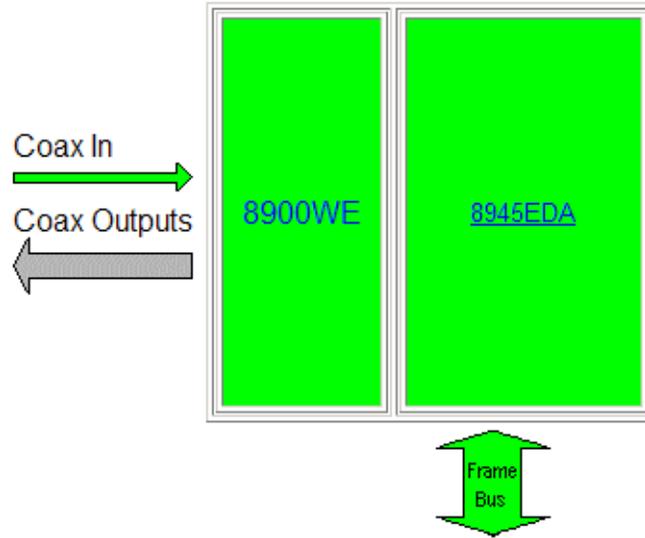
The area inside the double bars below the graphic will report warning messages reported from the module.

Figure 11. Status Web Page for 8945EDA Module



Model: [8945EDA](#) Description: [HD Equalizing DA](#)
Frame Location: [lab](#), Slot: 1

Gecko Flex Module Physical Structure



Part Number: 671-6696-30
Serial Number: RN05420102
Hardware Revision: A
Software Version: 1.3.0
Asset Tag:

Figure 12. Status Web Page for 8945EDA-D Module

 **Status** 
Model: [8945EDA-D](#) Description: [HD Dual EqualizingDA](#)
Frame Location: [lab](#), Slot: [7](#)

Gecko Flex Module Physical Structure



Part Number: 671-6696-40
Serial Number: RN05420098
Hardware Revision: B
Software Version: 1.3.0
Asset Tag:

Settings Web Page

Use
this
link

[7 8945EDA-D](#)
[Status](#)
[Settings](#)
[Slot Config](#)

The Settings web page for the 8945EDA (Figure 13 on page 27) and the 8945EDA-D (Figure 14 on page 28) provides configuration controls for the module.

- Coax In 1 J9 and Coax In 2 J10 – The 8945EDA has one input at J9 that feed all eight outputs. As shown in Figure 13 on page 27, the 8945EDA-D has two coax inputs that can be routed to different output sets.
- Signal Names (8945EDA only) – names for the inputs at J9 and J10 can be typed in for identification upstream in SNMP Trap reporting.

Note To return to the default name, clear the current characters and type **enter**.

- Input Reporting – Choose between **Enable** or **Disable**. The **Enable** parameter raises alarms towards 8900NET on the input signals (presence of signal). The color of arrows on the Status page will be automatically changed. The **Disable** parameter will change the color of arrows on the Status web page to grey to show they are not being monitored or reported to upper level control devices.
- Equalizer Mode – Select **Active** to enable the equalizer. Select **Bypass** to bypass the equalizer.
- Signal Format – Select the desired signal format between SD/ASI and HD. This parameter acts on the rise and fall time value.
- Carrier Detect – Indicates the input signal detection of DA1 or DA2 (for 8945EDA-D).

Figure 13. Settings Page for 8945EDA Module



Model: **8945EDA** Description: **HD Equalizing DA**
Frame Location: **lab**, Slot: **1**

DA	
DA Input : Coax In J9	DA Outputs : J1,J3,J5,J7,J2,J4,J6,J8
Input Reporting	Enable ▾
Equalizer Mode	Active ▾
Signal Format	<input type="radio"/> SD/ASI <input checked="" type="radio"/> HD
Carrier Detect	Present

Figure 14. Settings Page for 8945EDA-D Module

 **Settings** 

Model: 8945EDA-D Description: HD Dual EqualizingDA

Frame Location: lab, Slot: 7

	DA 1	DA 2
Routing Mode	DA Outputs J1,J3,J5,J7	DA Outputs J2,J4,J6,J8
Coax In 1 J9	<input checked="" type="radio"/>	<input type="radio"/>
Coax In 2 J10	<input type="radio"/>	<input checked="" type="radio"/>
Coax In 1 J9 Signal Name		<input type="text" value="Coax In1 J9"/>
Coax In 1 J10 Signal Name		<input type="text" value="Coax In2 J10"/>
Input Reporting	<input type="text" value="Enable"/> ▾	<input type="text" value="Enable"/> ▾
Equalizer Mode	<input type="text" value="Active"/> ▾	<input type="text" value="Active"/> ▾
Signal Format	<input type="radio"/> SD/ASI <input checked="" type="radio"/> HD	<input type="radio"/> SD/ASI <input checked="" type="radio"/> HD
Carrier Detect	Present	Present

Slot Config Web Page

Use
this
link

[7 8945EDA-D](#)
[Status](#)
[Settings](#)
[Slot Config](#)

Use the Slot Config web page shown in [Figure 15](#) to perform the following functions on the 8945EDA or 8945EDA-D module:

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

Each of these functions is described in detail below.

Figure 15. Slot Config Web Page



Locate Module

Off ▼

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 polled and refreshed periodically (about every 50 minutes) by the 8900NET module when the **Always Slot Refresh** checkbox on the 8900NET Configuration web page (with 4.3.0 software) and/or the **Restore upon Install** checkbox on any media module Slot Config web page is selected.

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

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

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

You may also select the **Learn Module Config** button at any time to save the current configuration for this slot. The configuration is saved on the 8900NET module. If the 8900NET module is removed or powered down, the stored configurations are not saved.

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

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

Frame Health Reporting

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. Refer to *8900NET Instruction Manual* for more details.

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 and other components (power supplies, fans) in the frame

SNMP Trap Reports Link

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

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

Software Updating

Software updating any of the 8945EDA modules is done using the Net-Config Networking Application PC option. The NetConfig application is available free of charge from the Grass Valley web site.

The procedure for updating software is given in the specific 8945EDA Release Notes when software updates become available for field updating. Check the Grass Valley web site for update information. Refer to *Contacting Grass Valley on page 4* for more information.

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

www.grassvalley.com/docs/modular

Specifications

Table 5. 8945EDA and 8945EDA-D Specifications

Parameter	Value
Input	
Number and type of inputs	1 or 2 BNCs (DA1: J9, DA2: J10)
Input impedance	75 ohm
Input signal type	Serial digital component conforming to the following formats: <ul style="list-style-type: none"> • SMPTE 292M • SMPTE 259M (143 Mbps, 177 Mbps, 270 Mbps, 360 Mbps) • SMPTE 344M (540 Mbps) • 4 Mbps to 1.5 Gbps with PN20 pseudonoise sequence, maximum ratio of 19/1 • DVB-ASI
Signal level	SDI 800 mV p-p \pm 10% max
Return loss	<ul style="list-style-type: none"> • >15 dB 5 to 270MHz • >10 dB to 1.5 GHz
Equalization	Auto equalizing: HD signals up to 125 m Belden 1694a SD signals up to 330 m of Belden 1694a
Outputs	
Number and type of outputs	8 BNCs
Output impedance	75 Ohm
Signal type	Serial digital component conforming to the following formats: <ul style="list-style-type: none"> • SMPTE 292M • SMPTE 259M (143 Mbps, 177 Mbps, 270 Mbps, 360 Mbps) • SMPTE 344M (540 Mbps) • 4 Mbps to 1.5 Gbps with PN20 pseudonoise sequence, maximum ratio of 19/1 • DVB-ASI
Signal level	SDI 800 mV p-p \pm 10%
Return loss	<ul style="list-style-type: none"> • >15 dB 5 to 270MHz • >10 dB to 1.5 GHz
Error Checking	Transparent to embedded EDH
Signal polarity	Non-inverted
Power	
Input power maximum 8945EDA 8945EDA-D	2.6 W 2.9 W
Mechanical	
Frame Type	GeckoFlex
Number of frame slots	One slot
Rear module type	8900WE-R
Rear module retainer maximum screw torque	4-5 inch-lb./0.45-0.6Nm

Table 5. 8945EDA and 8945EDA-D Specifications - (continued)

Parameter	Value
Environmental	
Frame temperature range	Refer to GeckoFlex Frames 8900FX/FF/FFN Signal Processing Systems Instruction Manual at: www.grassvalley.com/docs/modular
Operating humidity range	
Non-operating temperature	
MTBF at 40°C 8945EDA 8945EDA-D	1 512 700 1 395 000

Status Monitoring

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

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

www.grassvalley.com/docs/modular

The main status monitoring methods include the following:

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

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

External Frame Alarm

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

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

LED Reporting

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

- LED reporting from the modules in the frame to the 8900NET module is configurable using the 8900NET LED Reporting web page.
- The Status LEDs for this module are described in *Operation Indicator LEDs on page 18*. LEDs for the 8900NET module are described in the *8900NET (Net Card) Network Interface Instruction Manual*.

Web Browser Interface

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

- Frame Status web page – reports overall frame and module status in colored graphical and text formats. Refer to [Figure 9 on page 22](#) for an example.
- Module Status web page ([page 24](#)) – shows specific input and reference signal configuration error status to the module along with module status and information (part number, serial number, hardware version, software/firmware/boot versions, and Asset number (as assigned on the Slot Config web page).
- A Status LED icon on each web page reflects the module status on the module Status web page where warnings and faults are displayed and is a link to the module Status web page.

SNMP Reporting

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

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

Service

The 8945EDA modules make extensive use of surface-mount technology and programmed parts to achieve compact size and adherence to demanding technical specifications. Circuit modules should not be serviced in the field unless otherwise directed by Customer Service.

Power-up Diagnostics Failure

If the module has not passed self-diagnostics, do not attempt to troubleshoot. Return the unit to Grass Valley (see [Module Repair on page 37](#)).

Troubleshooting

Electronic Circuit Breaker

The electronic circuit breaker works during a fault condition or an overcurrent which stops the module.

Remove the module and replace it in the frame. If the problem persists, please refer to the 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 representative for depot location.

Refer to [Contacting Grass Valley on page 4](#) at the front of this document for the Grass Valley Customer Service Information number.

Alarms Table

The table below describes the different type of alarms:

Table 6. List of Alarms

Alarm degree	Description	LED Indicator	WEB page comments	Query status towards Netcard&SNMP
High	Hardware failure: no application code	Fault red on	Boot status page: Only this page is visible, software is downloading	
High	Bad rear module: if optical rear type on EDA and EDA-D	Fault: flashing	Status page: bad rear module PID_RES_DEVICE_STATUS: rear module in yellow color (green if OK)	YES
High	Electrical signal detect on DA 1 (DUAL or single mode2) only when electric selected	PRES COAX IN 1	STATUS PAGE: elec input arrow is green/red/yellow SETTING page: carrier detect : present / not present	YES
High	Electrical signal detect on DA 2(DUAL or single mode1) only when electric selected	PRES COAX IN 2	STATUS PAGE: elec input arrow are green/red/yellow SETTING page: carrier detect: present / not present	YES
	Equalizer 1 bypassed	Bypass	SETTING page: equalizer mode: BYPASS	No
	Equalizer 2 bypassed	Bypass	SETTING page: equalizer mode: BYPASS	No
	INPUT 1 REPORTED: previous described alarms reported	No impact on LED status	Status page: corresponding input arrow color green or yellow Setting page: input reporting: enable/disable	YES
	INPUT 1 NOT REPORTED: previous described alarms are not reported	No impact on LED status	Status page: corresponding input arrow color green or yellow Setting page: input reporting: enable/disable	NO
	INPUT 2 REPORTED: previous described alarms reported	No impact on LED status	Status page: corresponding input arrow color green or yellow Setting page: input reporting: enable/disable	YES
	INPUT 2 NOT REPORTED: previous described alarms are not reported	No impact on LED status	Status page: corresponding input arrow color green or yellow Setting page: input reporting: enable/disable	NO

Functional Description

A block diagram of the 8945EDA is shown in [Figure 16](#) and the 8945EDA-D in [Figure 17](#).

Figure 16. 8945EDA Block Diagram

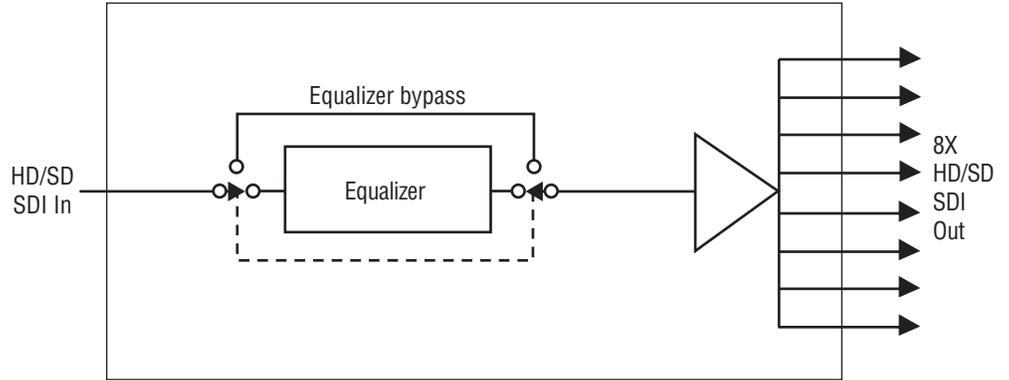
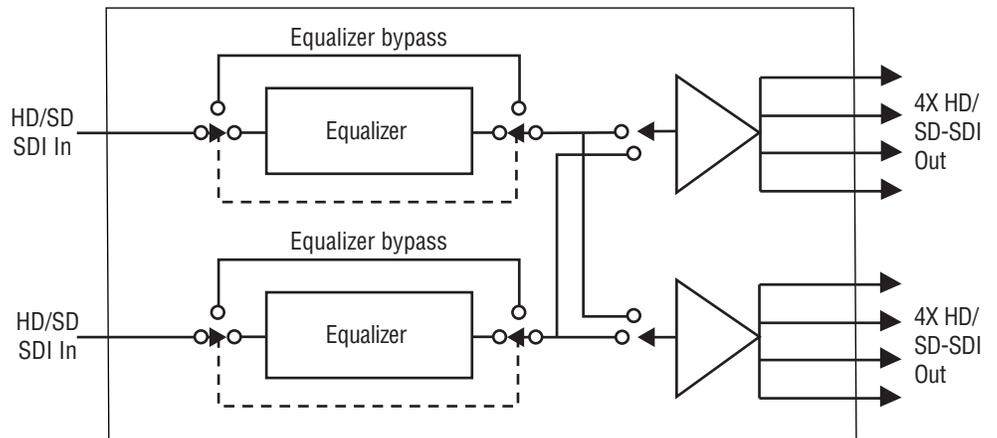


Figure 17. 8945EDA-D Block Diagram



Configuration Summary Table

Table 7 provides a complete summary of the module functions and a comparison of the functionality available with each control type along with the ranges and default values for each parameter on each control.

Table 7. Summary of Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	Local Onboard Control	Newton Control Panel
Config Mode	LCL&REM	LCL or LCL&REM	N/A	Function Switch S2 Pin 1: 0 (left): LOCAL 1 (right): LCL&REM	N/A
Assign Input Coax In 1 J9 to BNC outputs	Dual Mode = DA1 (Outputs J1, J3, J5, J7)	Dual Mode: DA1 (Outputs J1, J3, J5, J7) Single Mode: DA1 and DA2 (Outputs J1, J2, J3, J4, J5, J6, J7, J8)	Settings Routing Mode DA1 Coax In 2 J9 Dual: select DA1 Single: select DA1 and DA2	Function Switch S1 Dual DA1 Pin 1: 0 (left) Pin 2: 0 (left) Single DA1 and DA2 Pin 1: 1 (right) Pin 2: 0 (left)	Rout Mod 1
Assign Input Coax In 2 J10 to BNC outputs	Dual Mode = DA2 (Outputs J2, J4, J6, J8)	Dual Mode: DA2 (Outputs J2, J4, J6, J8) Single Mode: DA1 and DA2 (Outputs J1, J2, J3, J4, J5, J6, J7, J8)	Settings Routing Mode DA2 Coax In 2 J10 Dual: select DA2 Single: select DA1 and DA2	Function Switch S1 Dual DA2 Pin 1: 1 (left) Pin 2: 1 (left) Single DA1 and DA2 Pin 1: 0 (left) Pin 2: 1 (right)	Rout Mod 2
(8945EDA-D only) Coax In 1 J9 Signal name for SNMP reporting	Coax In 1 J9	12 character limit	Settings Coax In 1 J9 Signal Name Enter signal name	N/A	N/A
(8945EDA-D only) Coax In 2 J10 Signal name for SNMP reporting	Coax In 2 J10	12 character limit	Settings Coax In 2 J10 Signal Name Enter signal name	N/A	N/A
Input reporting for DA1	Enable	Enable or Disable	Settings Input Reporting Set for DA1	N/A	Input Report 1
(8945EDA-D only) Input reporting for DA2	Enable	Enable or Disable	Settings Input Reporting Set for DA2	N/A	Input Report 2
Equalizer mode for DA1	Active	Active or Bypass	Settings Equalizer Mode Set for DA1	Function Switch S1 Pin 3: 0 (left): Bypass 1 (right): Active	Equal 1
(8945EDA-D only) Equalizer mode for DA2	Active	Active or Bypass	Settings Equalizer Mode Set for DA2	Function Switch S1 Pin 3: 0 (left): Bypass 1 (right): Active	Equal 2
Signal format for DA1	SD/ASI	SD/ASI or HD	Settings Signal Format for DA1 SD/ASI or HD button	Function Switch S1 Output Mode DA1/DA2 Pin 8: 0 (left): SD/ASI 1 (right): HD	SgnFormat 1
(8945EDA-D only) Signal format for DA2	SD/ASI	SD/ASI or HD	Settings Signal Format for DA2 SD/ASI or HD button	Both DAs are the same	SgnFormat 2

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