

8901/8902/8906

ANALOG VIDEO DISTRIBUTION AMPLIFIERS

Instruction Manual

SOFTWARE VERSION 1.0.0

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

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Preface

About This Manual

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

8901/8902/8906

Analog Video DA Modules

Introduction

The 8901, 8902 and 8906 Analog Video Distribution Amplifier modules are a series of precision DAs for distributing analog video. All modules offer excellent differential gain and phase and common mode rejection specifications.

Each 8900 DA module features:

- Passive differential loop-through input for excellent common mode hum rejection even when cable runs are adjacent to AC Mains cables,
- Distribution of NTSC, PAL, SECAM, RGB, YUV, and Tri-level Sync video,
- Installs in the 8900, 8800, and 8500 Grass Valley frames with:
 - Eight outputs in 8900 and 8800 Series frames,
 - Six outputs in 8500 Series frames, and
- Card edge gain control.

A comparison of module functions for the 8900 Analog Video DA Series is given in [Table 1](#).

Table 1. 8900 Analog Video DA Comparison

Function	8901	8902	8906
Card edge gain adjustment	X	X	X
DC/AC coupling	X	X	X
DC restoration	–	X	X
Card-edge adjust equalization	–	X	X
Fast or slow clamping	–	–	X
White clip threshold adjustment	–	–	X
Remote monitoring	–	–	X

8901 Video DA

The 8901 is a utility DA ideal for short cable runs of high quality signals. A flat frequency response and impressive signal-to-noise ratio enable high quality copies of the input signal to all eight outputs.

8902 Video DA

The 8902 Equalizing DA offers the same features as the 8901 Utility DA as well as input cable equalization which accurately compensates for attenuation and phase errors induced in long cable runs. The cable equalization is custom-designed for each specific cable type. In addition to the DC and AC coupling modes is a DC restoration mode which smoothly restores the blanking level DC component to zero volts.

8906 Video DA

The 8906 Clamping DA with input presence detection offers the same features as the 8901 and 8902 modules plus a dual speed clamp which provides flexibility with clamp-induced noise versus single-ended hum rejection. A white clip control can be enabled to eliminate positive-going pulses above a user-selected threshold.

Also included on the 8906 module is a video presence detection circuit that generates SNMP traps when video is not present. Control of SNMP reporting can be enabled and disabled by the user with the available remote controls in 8900 video frames.

Installation

Installation of the 8900 Analog Video DA modules is a process of:

1. Setting on-board module jumper settings for desired operation (page 9),
2. Placing the module in the proper video frame slot (page 12), and
3. Cabling and terminating signal ports (page 15).

The DA module can be plugged in and removed from the frame with power on. When power is applied to the module, LED indicators reflect the initialization process (see *Power Up* on page 16).

On-board Jumper Settings

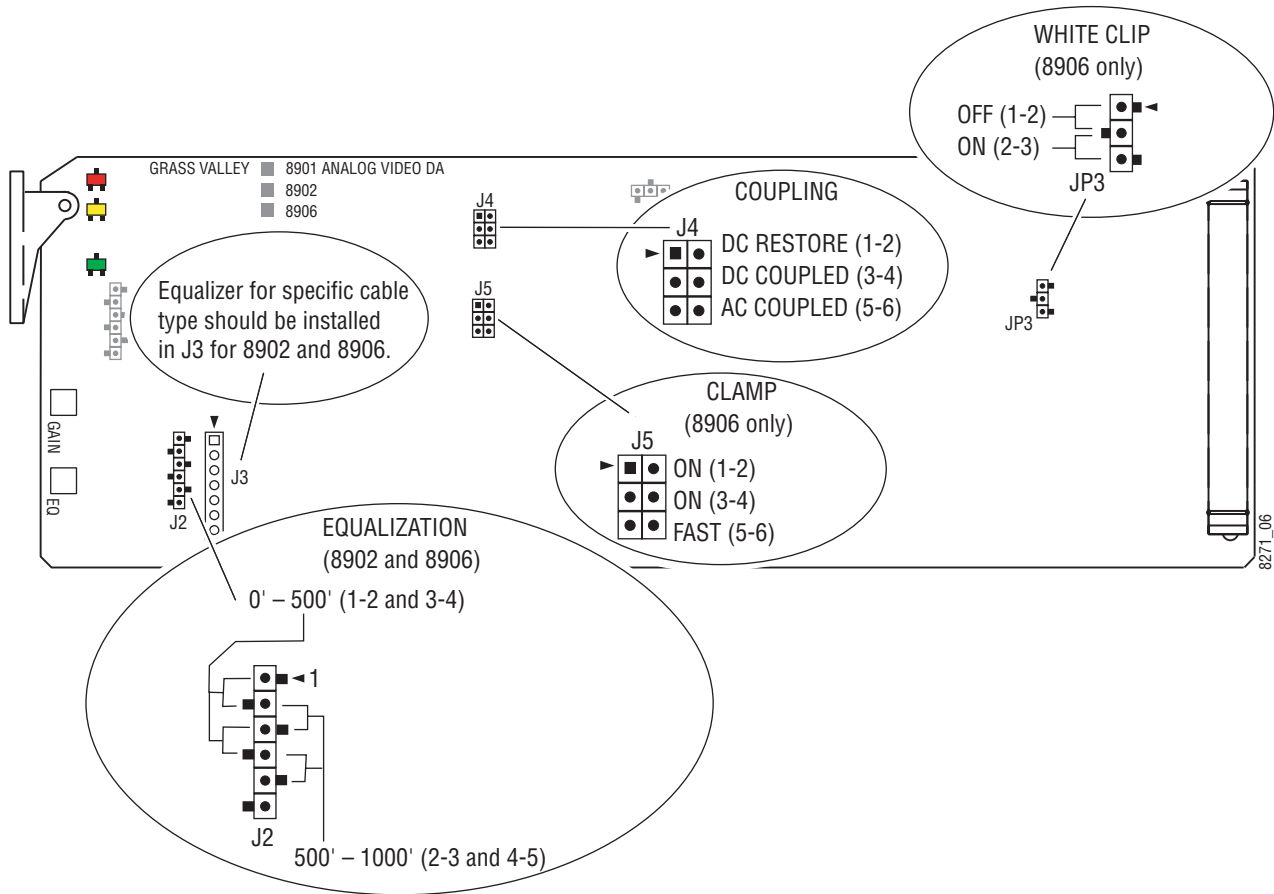
Each 8900 Analog Video DA module requires jumper settings to determine the desired operating modes as outlined in Table 2 and shown in Figure 1.

Table 2. On-board Jumper Settings

Jumper/Function	8901	8902	8906
J2 – Equalization	N/A	0 – 500' or 500 – 1000' (0 – 150 m or 150 – 300 m)	0 – 500' or 500 – 1000' (0 – 150 m or 150 – 300 m)
J4 – Coupling	DC or AC Coupling	DC Restore, DC, or AC coupling	DC Restore, DC, or AC coupling
J5 – Clamp (8906)	N/A	N/A	Clamp On or Off, Fast or Slow clamp
JP3– White Clip (8906)	N/A	N/A	On or Off

Figure 1 on page 10 illustrates each of the on-board jumpers on the circuit board. Note that depending on the model, some components may not be present. For details on setting each jumper, refer to the specific jumper headings given in this section.

Figure 1. On-board Jumpers



Equalization – J2

On the 8902 and 8906 modules, an equalizer for the specific cable type being used with this module is installed in location J3.

Set jumper J2 to match your maximum cable length as follows:

- 0 to 500 ft. (150 m) – set J2 to pins 1-2 and 3-4.
- 500 ft. (150 m) to 1000 ft. (300 m) – set J2 to pins 2-3 and 4-5.

Use the front edge EQ adjustment, R2, to fine tune the equalization as described in [Equalization Adjustment](#) on page 17.

DC Restore/AC or DC Coupling – J4

On all of these modules, set jumper J4 for the type of coupling desired:

- DC Restore (8902 and 8906) – set J4 to pins 1-2 for DC restoration. DC restoration smoothly restores the blanking level DC components to zero volts. This DC restoration circuit functions with or without synchronization pulses and can therefore be used with GBR or YUV signals.
- DC Coupled – set J4 to pins 3-4 for DC Coupled mode. The DC Coupled mode is recommended when distributing color difference signals (B-Y, R-Y) or for simple non-reclocking fanout distribution of AES/EBU 1 V p-p coaxial digital audio signals.
- AC Coupled – set J4 to pins 5-6 for AC Coupled mode. Use the AC Coupled mode when the incoming video signal has its blanking level at anything other than zero volts.

Clamp – J5

The 8906 module has a clamp control that can be enabled or disabled and the clamp speed set to fast or slow. When enabled, the clamping function will override the coupling mode set with jumper J4.

On the 8906 module, set jumper J5 to enable and disable clamping and set clamping speed as follows:

- Clamp Off – remove the shorting jacks on J5 on pins 1-2 and 3-4. You may store the shorting jacks on pin 1 and pin 3. The clamp speed shorting jack on pins 5-6 can be left in any position.
- Fast Clamp On – set the shorting jacks on J5 to pins 1-2, 3-4, and 5-6. Also set jumper J4 for AC Coupled, pins 5-6. Use a fast clamp for applications where greater hum rejection is required.
- Slow Clamp On – set the shorting jacks on J5 to pins 1-2, and 3-4. Remove the shorting jack from pins 5-6. Store the jack on pin 5. Also set jumper J4 for AC Coupled, pins 5-6. Slow clamping is useful in applications where noise suppression is required.

White Clip – JP3

The 8906 module has a White Clip control that can be enabled to eliminate positive-going pulses above a user-selected threshold set by the White Clip Level potentiometer, R95.

On the 8906 module, set jumper JP3 to enable or disable the White Clip control:

- White Clip Off – set JP3 to pins 1-2.
- White Clip On – set JP3 to pins 2-3.

Module Placement In Frame

8901, 8902, and 8906 Analog Video DA modules can be installed in Gecko 8900 frames and also older version (legacy) 8500 or 8800 Grass Valley frames.

Remote monitoring is available only with an 8906 module installed in a Gecko 8900TFN-V or 8900TFN video frame (with an 8900NET module installed).

Note 8900 Analog Video DA modules installed in 8500 frames require a trace cut as shown in [Figure 4 on page 14](#).

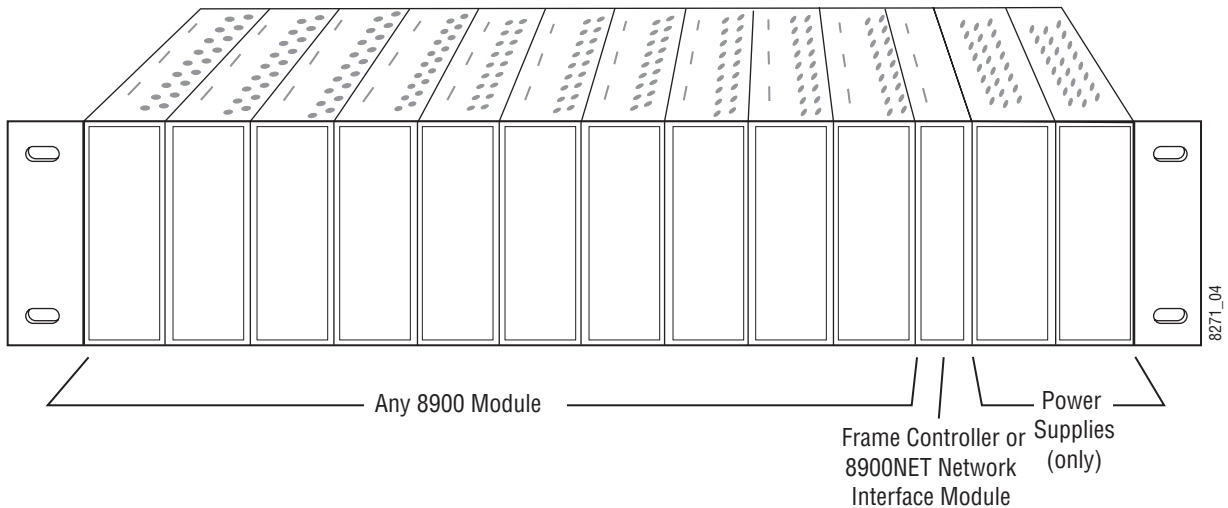
Gecko 8900 Frame

There are ten cell locations in the 8900 video frame to accommodate modules. These are the left ten locations ([Figure 2](#)).

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

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

Figure 2. Gecko 8900 Series Frame



8900 Frame Capacity

These modules can be installed in all Gecko 8900 video frames but with varying maximum quantities determined by frame cooling capacity. Table 3 provides the power capacity, cooling capacity, and maximum module count for each frame type.

Table 3. Video Frame Power Capacity

Capacity Calculated	8900TX Frame	8900TF Frame	8900TFN Frame
Power (W)	100	100	100
Recommended Module Cooling (W)	30	90	90
8900 DA Modules	10	10	10

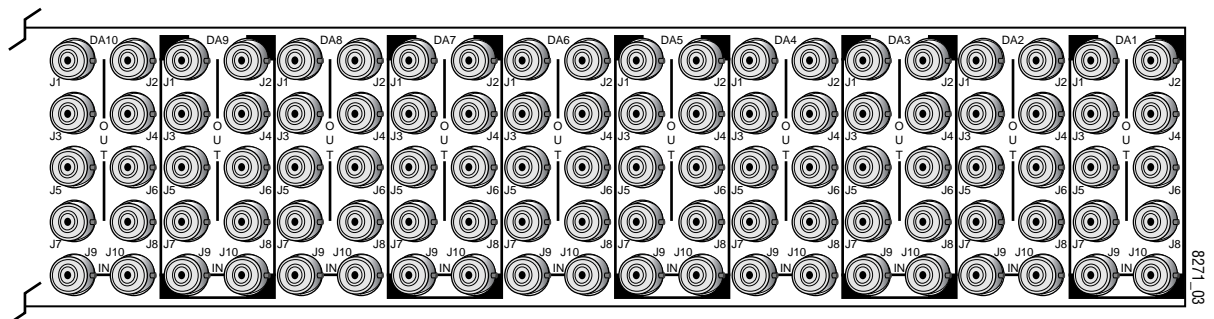
Note Module capacity figures assume no other modules are in the frame.

To install a module in the frame:

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

Note 8900 module slots are interchangeable within the frame. There are 10 BNCs in each slot's I/O group. The functional assignment of each connector in a group is determined by the module that is placed in that slot. The maximum number of modules a Gecko 8900 video frame can accept is ten. Figure 3 illustrates the rear connector plate for a Gecko 8900 video frame.

Figure 3. Gecko 8900 Series Video Frame Rear Connector

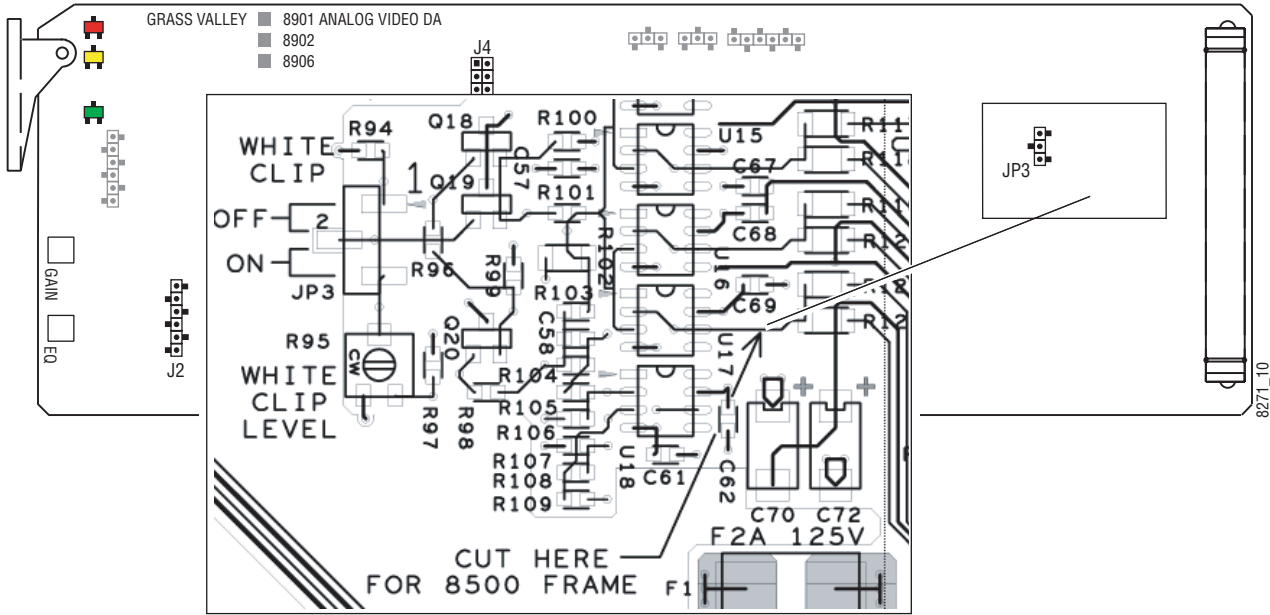


8500 Frames

Modules installed in an 8500 frame must first be modified with a trace cut in order to work properly. Cut the trace in the place indicated by the silk-screen on the module as illustrated in Figure 4.

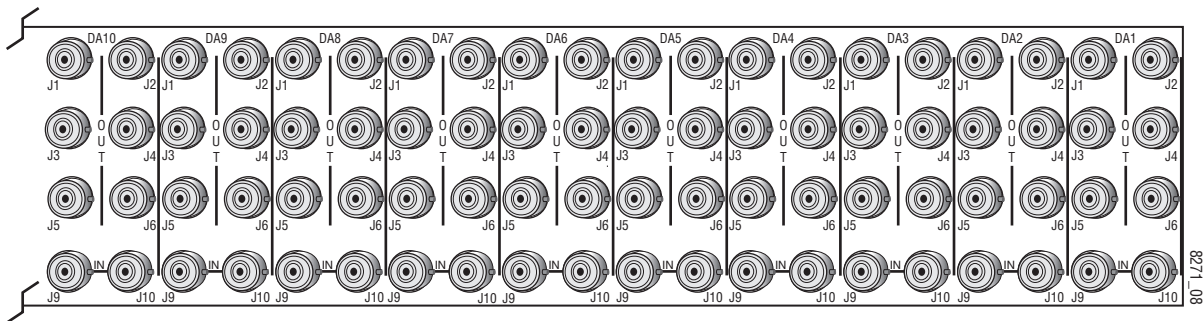
Note Cutting the trace will disable the module for use in an 8800 or 8900 frame. If the module is needed in a newer frame type, the cut trace may be bridged.

Figure 4. Module Trace Cut for 8500 Frame Operation



The 8500 frame provides the same looping BNC analog input with six outputs as shown in Figure 5. Remote control with the 8900NET module is not available in the 8500 frame.

Figure 5. 8500 Frame Rear BNCs



8800 Frames

The 8800 frame provides the same looping BNC analog input with eight outputs (Figure 3 on page 13). Remote control with the 8900NET module is not available in the 8800 frame.

Cabling

Refer to Figure 6 for cabling the 8900 Analog Video DA module in an 8900/8800 frame. Only the first six outputs are available when a module is installed in the 8500 frame. Cabling to and from the module is done at the back of the video frame as described below.

Note At the back of every hardcover manual are overlay cards that can be placed on the rear connector BNCs to identify the specific connector functions.

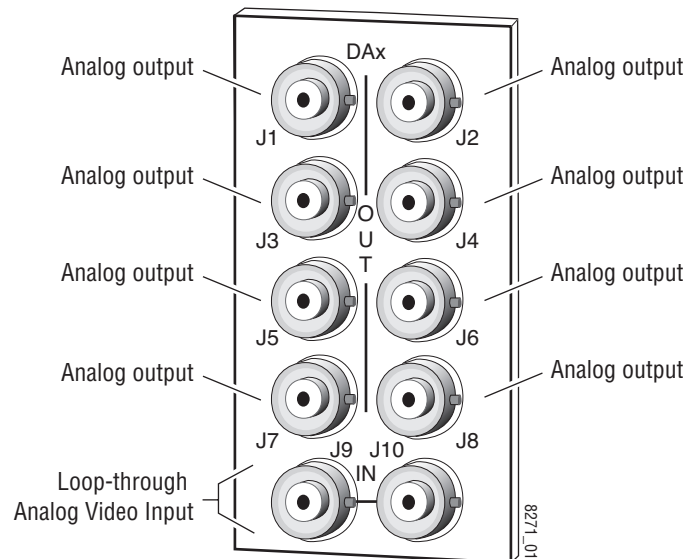
Loop-Through Input

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

Outputs

There are eight outputs from each 8900 Analog Video DA module at BNCs J1 through J8. Output destination equipment should have an input impedance of 75 Ω unless it has loop-through inputs, in which case the loop-through inputs must be terminated into 75 Ω .

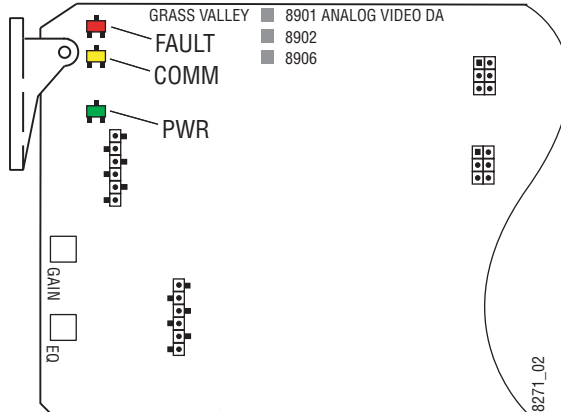
Figure 6. 8900 DA Rear Input/Output Connectors



Power Up

The front LED indicators and configuration switches are illustrated in [Figure 7](#). Upon power-up, the green PWR LED present on all module types should light.

Figure 7. LEDs and Configuration Switches



Operation Indicator LEDs

Refer to [Figure 7](#) and [Table 4](#) for the name and meaning of each of the board edge operating indicators on the module circuit board.

Table 4. Board Edge LED Names and Meaning

LED	Indication	Condition
FAULT (red) 8906 only	Off	Normal operation.
	On continuously	8906 module has detected an internal fault.
	Long Flash	Input missing and report loss of signal function is enabled.
COMM (yellow) 8906 only	Off	No activity on frame communication bus.
	Short flash	Activity present on the frame communication bus or Locate Module 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.

Module Adjustments

The following adjustments can be made from front edge and on-board controls on the module circuit board. There are no remote control adjustments.

Gain Adjustment

Overall gain of the outputs on these modules can be adjusted ± 2 dB with the front edge GAIN potentiometer R1. To adjust gain:

1. Connect one of the output BNCs to a waveform monitor.
2. Adjust the input signal to the desired amplitude with the GAIN potentiometer.

Equalization Adjustment

On the 8902 and 8906 modules, equalization can be fine tuned with the front edge EQ potentiometer, R2.

To fine turn equalization:

1. Connect a test signal such as Multiburst (up to 20 MHz) to the module input and terminate the unused loop-through input.
2. Use the front edge EQ potentiometer to adjust for equal frequency response on the multiburst signal while monitoring an output from the module.

White Clip Adjustment

The white clip level of the signal can be set with the White Clip Level adjustment, R95. The adjustment range is from 500 mV to 1200 mV.

To adjust the white clip:

1. Set jumper JP3 to On (pins 2-3) and place the module on an extender if possible.
2. Connect an output BNC to a waveform monitor.
3. Connect 100% Color Bars to the input. Use one of the following methods to make the adjustment:
 - a. Unterminate the output you are monitoring and adjust the white portion of the signal to be below 1 V.
 - b. Leave the output terminated and adjust the white portion to clip where desired for your application.

Remote Monitoring

8906 module monitoring can be performed using a web browser GUI interface when the 8900NET Network Interface module is present in the Gecko 8900TFN-V frame. Remote monitoring is not possible with the 8500 or 8800 frames. This section describes the GUI access to the available module functions.

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

Note For optimal performance and access to the latest features, it is recommended that the 8900NET module be updated to the latest software release. Check the Grass Valley web site for the current 8900NET software.

Refer to the Frame Status page shown in [Figure 8 on page 19](#). The 8900 modules can be addressed by clicking either on a specific module icon in the frame status display or on a module name or slot number in the link list on the left.

Note The physical appearance of the 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.

Use the **Refresh** button to update the display (available with 8900NET software version 3.2.0 and later).

The **Online Manual Link** button can be set up to link to the documentation in pdf format. Link configuration is done on the Frame Configuration page.

For information on status and fault monitoring and reporting shown on the Status page, refer to [Status Monitoring on page 30](#).

Figure 8. 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

Online Manual Link

Bay 2 8900 Frame 1

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

Status

Model: 8900TFN Description: Module Frame

Frame Location: Back Room Top

Frame Health Status WARNING Temperature Status Pass

WARNING - Module Data or Config Errors

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

Front Cover No Cover

Properties

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

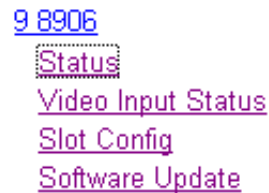
8270_04

Links and Web Pages

The 8900 GUI provides the following links and web pages for the 8906 module (Figure 9):

- Status – reports input and frame bus status and module information (page 21),
- Video Input Status – status reporting for the video input can be enabled or disabled (page 22),
- Slot Config – provides a Locate Module function and Slot Memory (page 23), and
- Software Update – gives information about software updating (page 25).

Figure 9. 8906 Web Page Links



Status Web Page

Use [9.8906](#)
 this [Status](#)
 link [Video Input Status](#)
[Slot Config](#)
[Software Update](#)

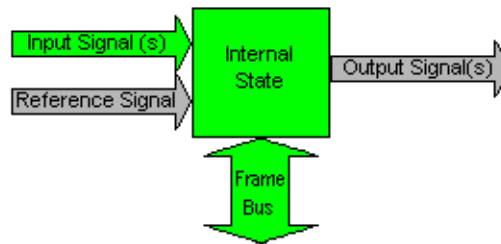
The Status web page (Figure 10) shows the signal status of the analog video input and frame bus communication. Color coding of the display indicates the signal status. Refer to *Status Monitoring* on page 30 for an explanation of the color coding.

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

Figure 10. 8906 Status Web Page



Status
 Model: [8906](#) Description: [Analog Video DA](#)
 Frame Location: [Modular Lab](#) , Slot: [9](#)
 Input Signal Name: [not assigned](#)
 8906 Status: [PASSED](#)



Properties

Hardware Revision [00A1](#) Serial Number [VT12345678](#)
 Software Version [1.0.0](#) Part Number [671-6491-00A1](#)

Video Input Status Web Page

Use
this
link

[9 8906](#)
[Status](#)
[Video Input Status](#)
[Slot Config](#)
[Software Update](#)

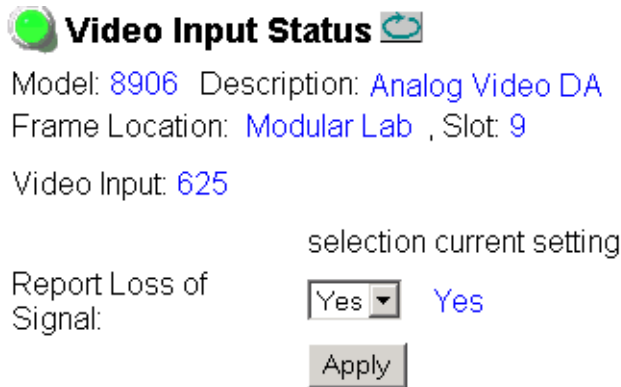
The Video Input Status web page (Figure 10) allows enabling or disabling reporting of signal loss.

To enable loss of signal reporting, select **Yes** from the pulldown. To disable reporting of signal loss, select **No**.

Disabling this control will gray out the Input signal on the Status web page graphic shown in Figure 10 on page 21.

Press the **Apply** button to enter the selection.

Figure 11. 8906 Video Input Status Web Page



Video Input Status

Model: 8906 Description: Analog Video DA
Frame Location: Modular Lab , Slot: 9
Video Input: 625

Report Loss of Signal: Yes

Slot Config Web Page

Use
this
link

[9 8906](#)
[Status](#)
[Video Input Status](#)
[Slot Config](#)
[Software Update](#)

Use the Slot Config web page ([Figure 12 on page 24](#)) to perform the following functions on the 8906 module:

- **Locate Module** – selecting the **Flash** radio button flashes the COMM and FAULT 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.
- **Slot Memory** – the slot configuration for each media module is automatically saved periodically (once an hour) to the 8900NET module in that frame. You may also select the **Learn Module Config** button at any time to save the current configuration for this slot. The configuration is saved on the 8900NET module. If the 8900NET module is removed or powered down, the stored configurations are not saved.

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

- **Hardware Switch Controls** – a read-only status report of 8900NET module switch settings for Module Status Reporting and Asynchronous Status Reporting. These functions must be enabled for the following Slot SNMP Trap Reports to function.
- **Slot SNMP Trap Reports** – displayed only when the SNMP Agent software has been installed on the 8900NET module. Slot SNMP traps can be enabled only when the hardware switches for Module Fault reporting and Asynchronous Status reporting are in enabled on the 8900NET module (dipswitch S1 segment 7 and dipswitch S2 segment 1).

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

SNMP reporting can be also be disabled for the video input on the Video Input Status web page ([page 22](#)).

Figure 12. 8937 Slot Config Page

 **Slot Config** 

Model: [8906](#) Description: [Analog Video DA](#)

Frame Location: [Modular Lab](#) , Slot: [9](#)

Slot Identification

Name:

Input Signal Name:

Locate Module

Flash Off

Slot Memory

Restore upon Install

Hardware Switch Controls

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

Slot SNMP Trap Reports

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

Software Update Web Page

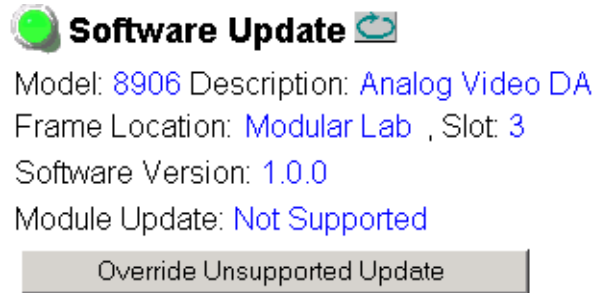
Use
this
link

[9 8906](#)
[Status](#)
[Video Input Status](#)
[Slot Config](#)
[Software Update](#)

The Software Update web page (Figure 13) indicates that module software updates via the web or using the NetConfig networking application are not supported.

For complete software updating instructions for the 8906, refer to the release notes included with the software upgrade.

Figure 13. 8906DA Software Update Web Page



Software Update

Model: 8906 Description: Analog Video DA
 Frame Location: Modular Lab , Slot: 3
 Software Version: 1.0.0
 Module Update: Not Supported

Override Unsupported Update

Specifications

Table 5. 8901, 8902, 8906 Analog Video DA Module Specifications

Parameter	Value
Analog Video Input	
Number of inputs	1 (BNC loop-through)
Impedance	Passive high impedance differential loop-through
Input format	Analog video: NTSC, PAL, SECAM, RGB, YUV, Tri-level sync
Input level	Video 1 V p-p, Subcarrier up to 2 V p-p
Return loss	> 40 dB up to 5 MHz
CMRR	> 66 dB 50/60 Hz
Common mode input range	± 10 V
Analog Video Outputs	
Number of outputs	8 in 8900/8800 frame, 6 in the 8500 frame
Output impedance	75 Ω
Signal level	1 V p-p ± 2 dB
Return loss	> 40 dB up to 5 MHz
Output DC	< 50 mV
Performance	
Frequency Response	8901 and 8902: ± 0.025 dB to 5 MHz ± 0.05 dB to 8 MHz -1 dB at 16 MHz 8906: ± 0.05 dB to 5 MHz ± 0.1 dB to 8 MHz -1 dB at 16 MHz
Cable Equalization	Dual range supported by on-board jumper on 8902 and 8906 only: 0-500 ft. (150 m) J2: pins 1-2 and 3-4 500-1000 ft. (150-300 m) J2: pins 2-3 and 4-5
Differential gain	< 0.1%
Differential phase	< 0.1 degree
Gain adjustment range	± 2 dB
Tilt	< 0.5%
Coupling	AC/DC, DC restore and Dual speed clamp on 8906
Clamp hum rejection (8906)	Slow: > 34 dB, Fast: > 46 dB
Electrical length	8901 and 8902: 20 ns, 8906: 22 ns
Environmental	
Operating temperature range	See operating specifications for frame type
Operating humidity range	0 to 90% non-condensing
Non-operating temperature	-10 to 70 degrees C
Mechanical	
Frame type	Gecko 8900 Video, 8800, 8500 (with trace cut on module)
Power	
Power consumption	< 2.3 W

Functional Description

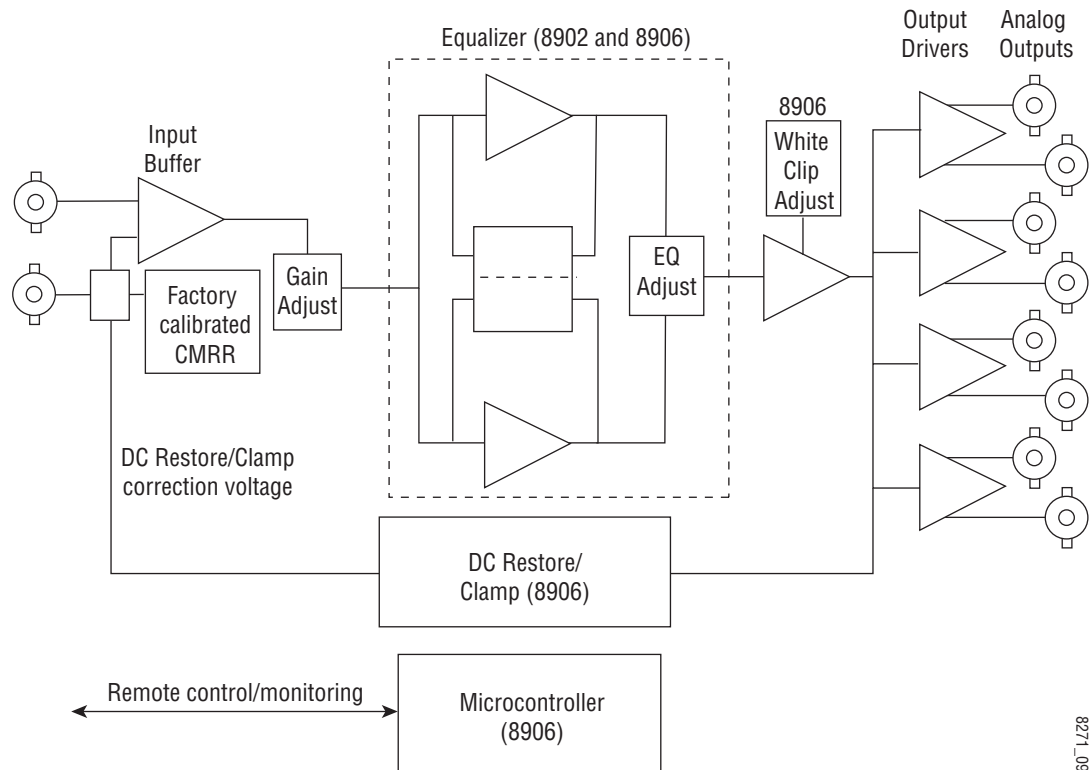
Refer to the block diagram in [Figure 14](#) for the following functional description.

Note Feature functionality depends on the module type. Refer to [Table 1 on page 7](#) for a feature comparison between module types.

Input Amplifier

The 8900 Analog Video DA module buffers the incoming video before it is fed to the equalizer section. The common mode rejection ratio (CMRR) is set at the factory by balancing the input bias between the differential inputs. The AC/DC restorer and clamp circuit correction voltage is fed back to the buffer for the final stage of DC restoration.

Figure 14. 8900 DA Functional Block Diagram



8271_09

Equalizing Amplifier

The equalizing amplifier is formed by two video op-amp circuits working in parallel. Equalization is accomplished by balancing between the two amplifier's values with a front edge EQ adjustment. On-board jumpers must be set to select the cable length EQ range from either 0–500 ft. or 500–1000 ft.

Output Driver

The output driver is formed by a buffer after the equalization amplifier and four video op-amps that drive eight 75 Ω loads, each amplifier driving two loads.

Microprocessor

The microprocessor present on the 8906 module, monitors module health and video presence and standard. This information is reported to the frame via the Frame bus and can be accessed from the web GUI or a control panel when an 8900NET module is installed in the 8900TFN-V frame.

Power Supply

The ± 5 volts needed by the module is generated from the ± 12 volt input. Both inputs are fused and noise suppressed. Two linear regulators form the ± 5 volts.

Service

The 8900 Analog Video DA modules make extensive use of surface-mount technology and programmed parts to achieve compact size and adherence to demanding technical specifications. Circuit modules should not be serviced in the field unless directed otherwise by Customer Service.

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

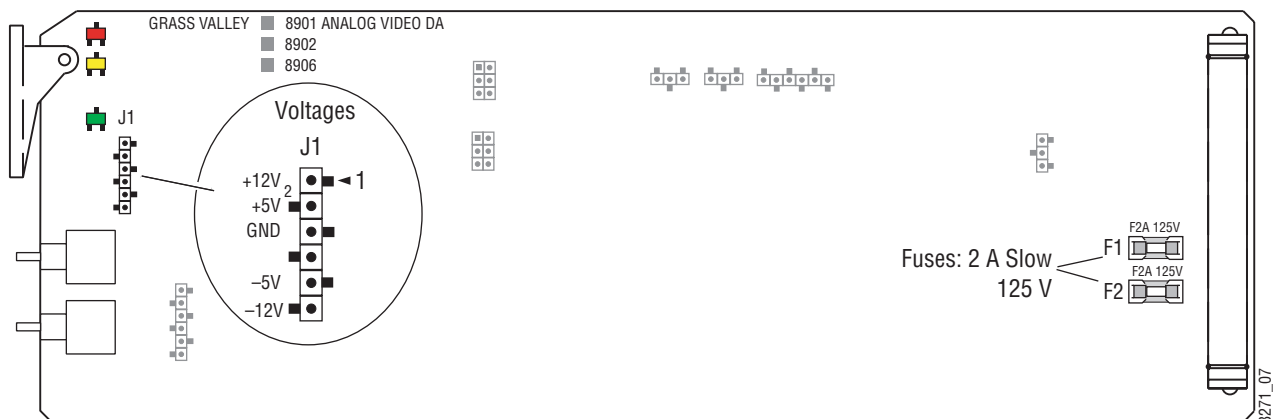
- Check frame and module power LEDs.
- Verify power at the voltage testpoints (see [Figure 15](#)) and check fuses if no voltage is detected.
- Check for presence and quality of input signals.
- Verify that source equipment is operating correctly.
- Check cable connections.

Refer to [Figure 7](#) on page 16 for the location of PWR LED and [Table 4](#) on page 16 for proper LED indications.

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

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

Figure 15. 8900 DA Fuse and Voltage Testpoint Locations



Status Monitoring

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

8900 Frame status will report the following items:

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

Module health status will report the following items:

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

LEDs

LEDs on modules in the frame and on the front of the 8900TF/TFN frames indicate status of the frame and the installed power supplies, fans in the front covers, and modules. (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), and
- Module health bus.

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

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

Status LEDs for this module are described in [Operation Indicator LEDs on page 16](#). LEDs for the 8900NET module are described in the *8900NET Network Interface Instruction Manual*.

Frame Alarm

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

Web Browser Interface

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

- Frame Status page – reports overall frame and module status in graphical and text formats.
- Module Status page – shows specific input and reference signal status to the module along with enabled options and module versions.
- A Status LED icon on each web page to report communication status for the frame slot and acts as a link to the Status page where warnings and faults are displayed (8900NET version 3.2.0 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 activated 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.

Signal loss reporting for the module can be enabled or disabled on the Video Input Status web page ([page 22](#)).

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