

KAM-HD-FS

HD/SD FRAME SYNC MODULE

Instruction Manual

SOFTWARE VERSION 1.1.0

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Grass Valley Web Site

The www.thomsongrassvalley.com web site offers the following:

Online User Documentation — Current versions of product catalogs, brochures, data sheets, ordering guides, planning guides, manuals, and release notes in .pdf format can be downloaded.

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

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

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Preface

About This Manual

This manual describes the features of a specific module of the 2000 Series Modular Products family. As part of this module family, it is subject to Safety and Regulatory Compliance described in the 2000 Series frame and power supply documentation (see the *Kameleon 2000 Frames Instruction Manual*).

KAM-HD-FS

HD/SD Frame Sync Module

Introduction

The KAM-HD-FS module is part of the Grass Valley Kameleon Media Processing System family of products. It offers an ideal solution for high definition and serial digital frame synchronization and timing.

Features offered in this module include:

- 480i/59.94 or 576i/50 SD video rates,
- 1080i/50, 1080i/59.94 or 720p /59.94 HD video rates,
- Four HD/SD video outputs,
- Video processing and frame synchronization,
- Horizontal and vertical timing delay adjustments,
- Split Screen (horizontal or vertical) output mode,
- Auto and Manual Freeze controls,
- Video test signal generators,
- Newton Modular Control Panel interface,
- NetConfig support, and
- SNMP support – remote monitoring.

System Requirements

Operation of the KAM-HD-FS modules in 2000 Series frames has the following hardware and software requirements:

- Modules must be installed in a 2000T1DNG or 2000T3DNG Kameleon 2000 Series frame containing a 2000GEN module.
- The frame must have a 2000NET module with assembly number 671-5231-01 or later running software version 3.2.2 or later.

Existing Kameleon frames can be upgraded with the necessary modules and software for proper operation. Contact your sales representative for more information.

Installation

Installation of the KAM-HD-FS module is a process of:

- Placing the rear module in a rear frame slot,
- Placing the media module in the corresponding front slot, and
- Cabling and terminating signal ports.

The KAM-HD-FS module can be plugged in and removed from a 2000 Series frame with power on. When power is applied to the module, LED indicators reflect the initialization process (see [Power Up on page 13](#)).

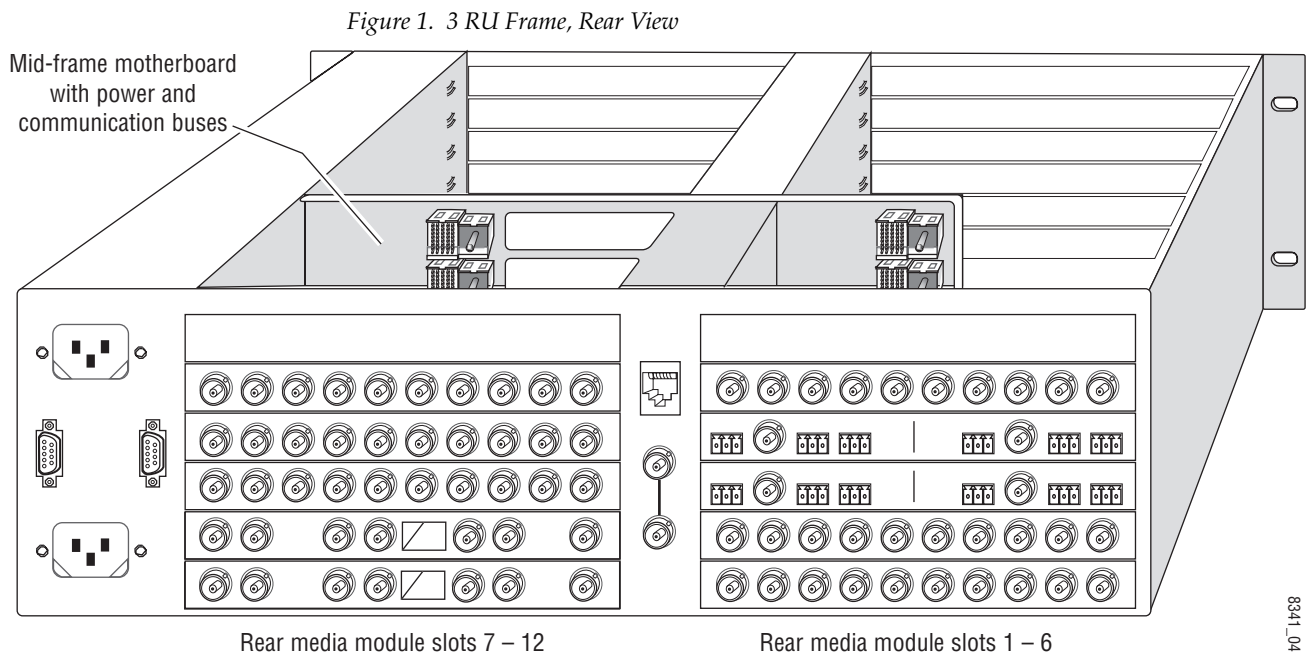
Note The KAM-HD-FS must be installed in a 2000T1DNG or 2000T3NG frame (2000NET and 2000GEN module installed) for access to a frame reference.

Module Placement in the 2000 Frame

There are twelve slot locations in both the front and rear of a 3 RU frame to accommodate 2000 Series modules. The KAM-HD-FS consists of a two module set with a front media module and a rear module that can be plugged into any of the 12 frame slots. Each KAM-HD-FS front media module plugs into the front of the 2000 frame mid-plane. The rear module plugs into the corresponding rear slot to provide the input and output interface connectors.

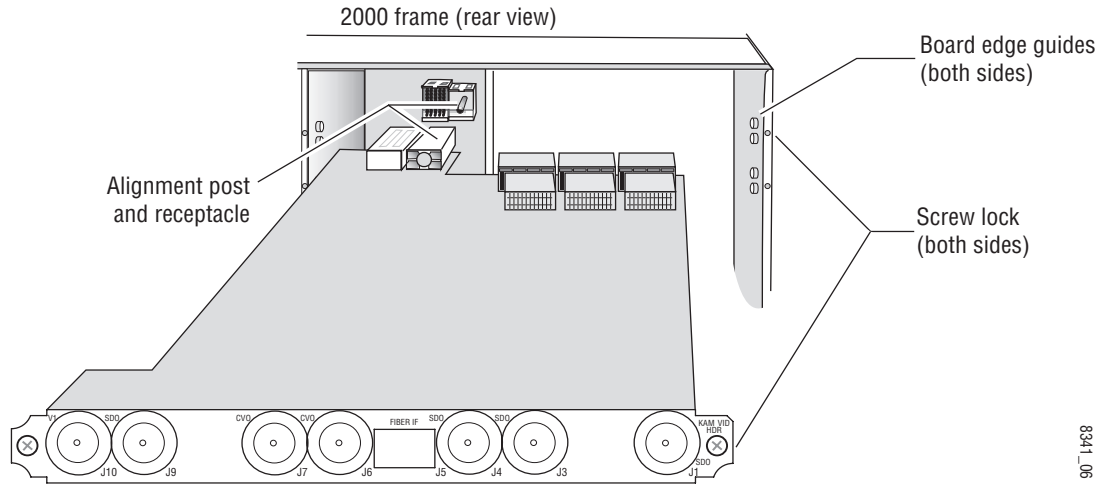
To install a KAM-HD-FS module set in the frame:

1. Locate a vacant slot in the rear of the 3 RU frame (Figure 1).



2. Insert the rear module into the vacant rear slot of the frame as illustrated in Figure 2.

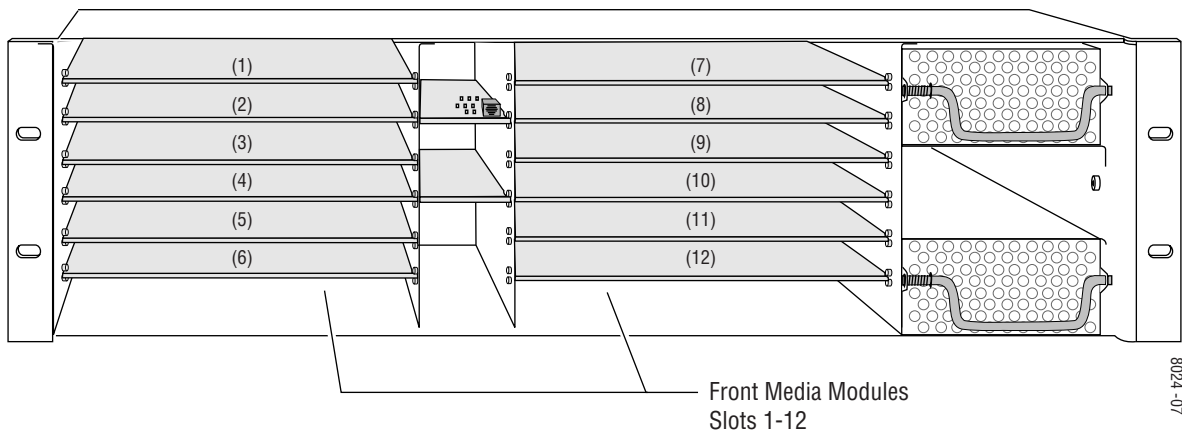
Figure 2. Installing Passive Rear Module



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3. Verify that the module connector seats properly against the midplane.
4. Using a crossblade screwdriver, tighten the two screw locks to secure the module in the frame.
5. Locate the corresponding front slot in the frame. The 3 RU frame front view is illustrated in Figure 3.

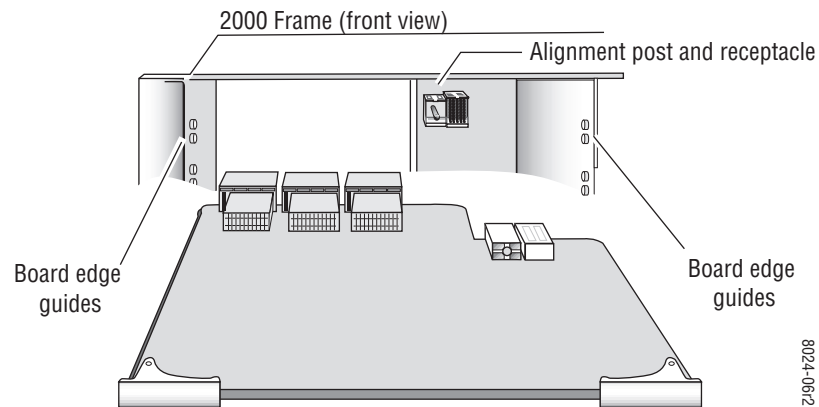
Figure 3. 2000 Series 3 RU Frame, Front Slots



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6. With the component side up, insert the front media module in the corresponding front slot (see [Figure 4](#)).
7. Verify that the module connector seats properly against the midplane and rear module connector.
8. Press firmly on both ejector tabs to seat the module.

Figure 4. Installing Front Media Module



Cabling

All cabling to the KAM-HD-FS module is done on the corresponding rear module at the back of the 2000 frame. Refer to [Figure 5](#) for an illustration of the rear connections referenced in the steps below.

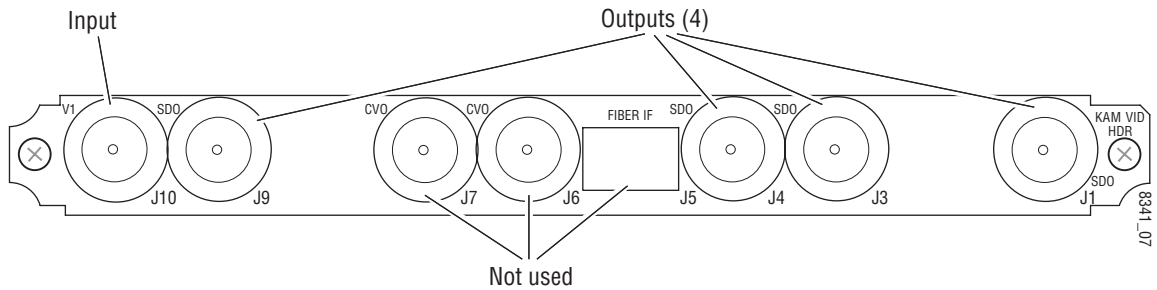
Video Input

Connect the HD or SD SDI video input to BNC connector J10, labeled **V1**.

Video Outputs

There are four HD/SD SDI video outputs at BNC connectors J1, J4, J5, and J9 labeled **SDO**.

Figure 5. KAM-HD-FS Input/Output Connectors



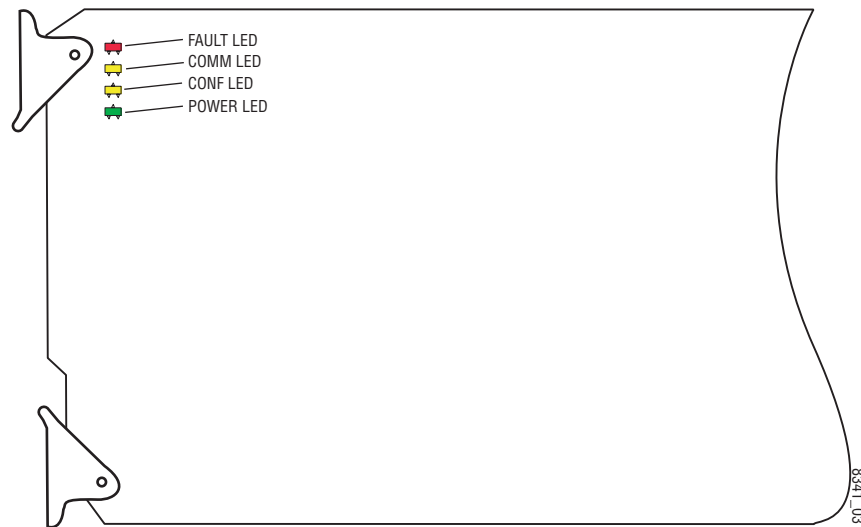
Power Up

The front LED indicators are illustrated in [Figure 6](#). Upon power-up, the green PWR LED should light and the yellow CONF LED should illuminate for the duration of module initialization.

Operation Indicator LEDs

With factory default configuration and valid input and reference signals connected, the green PWR LED should be on.

Figure 6. Operation Indicator LEDs



A red FAULT LED indicates an error situation and, with the other LEDs, can indicate the operational conditions presented in [Table 1](#).

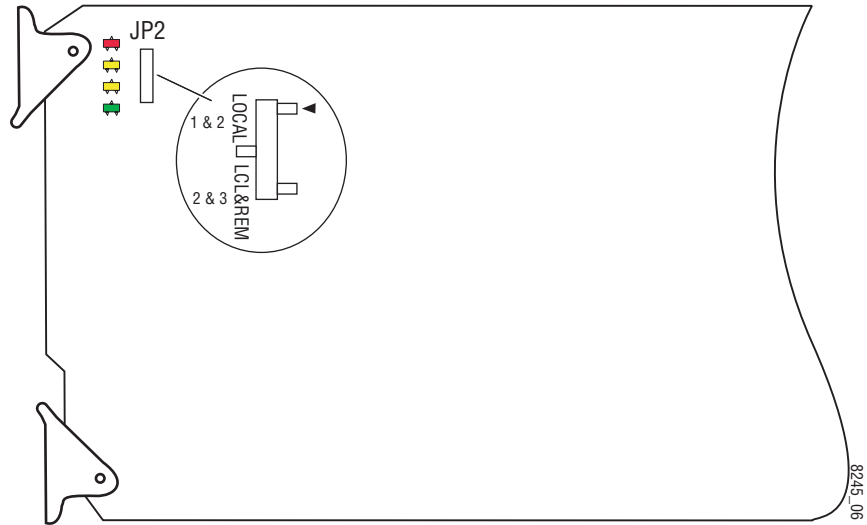
Table 1. Indicator LEDs and Conditions Indicated

LED	Indication	Condition
FAULT (red)	Off	Normal operation.
	On continuously	Module has detected an internal fault.
	Flashing	Frame reference or video input is missing, input does not match manual selection.
COMM (yellow)	Off	No activity on frame communication bus.
	Long flash	Location Command received by the module from a remote control system.
	Short flash	The new system configuration is being stored to the module.
CONF (yellow)	Off	Module is in normal operating mode.
	On continuously	Module is initializing, changing operating modes or updating firmware. Simultaneous CONF and FAULT LEDs on indicate FPGA load error.
	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.

Remote Control Lockout

When a jumper is placed across pins 1 and 2 of jumper block JP2 (see [Figure 7](#)), module output mode settings are locked out from remote control. To have remote access, set the jumper across pins 2 and 3.

Figure 7. Local/Remote Jumper



Configuration and Adjustments

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

The configuration parameters and monitoring functions available with the web browser interface and the Newton Control Panel are summarized in [Table 2](#). The parameter defaults, choices, ranges, and resolution are provided for each function

Table 2. Summary of KAM-HD-FS Configuration Controls

Function	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Panel
Select output timing source	Video In	Frame Reference (Frame Sync) or Video In (Delay)	System Config/ Output Timing Selection Output Timing Source Frame Reference or Video In radio button	OutClk
Input video type	HD	HD or SD	System Config/ Input Video Type HD or SD radio button	HD/SDMode
Select input video rate	HD: 1080i/59.94 SD: 480i/59.94	HD: 1080i/59.94, 720p/59.94 or 1080i/50 SD: 480i/59.94 or 576i/50	System Config/ Video Rate Mode HD: 1080i/59.94, 720p/59.94, or 1080i/50 radio button SD: 480i/59.94 or 576i/50 radio button	VidRMode
Enable or disable Video and RGB Processors	Disable	Enable or Disable	System Config/ Proc Amps Enable/Disable Video Processing Enable or Disable radio button	VidProcEn
Enable or disable split screen	Off	On or Off	System Config/, or RGB Proc Amp/, or Video Proc Amp/ Split Screen (Unprocessed) Split Screen checkbox	SplitEn
Split screen orientation	Vertical	Horizontal or Vertical	System Config/, or RGB Proc Amp/, or Video Proc Amp/ Split Screen (Unprocessed) Orientation Vertical or Horizontal checkbox	SSOrt
Split screen position (% of unprocessed video)	50%	10 to 90% (1% steps)	System Config/, or RGB Proc Amp/, or Video Proc Amp/ Split Screen (Unprocessed) Position control	SSPos
Adjust horizontal timing in pixels	0	HD: 1080i/59.94 = 0 to 2199 1080i/50 = 0 to 2639 720p/59.94 = 0 to 1649 SD: 480i/59.94 = 0 to 857 576i/50 = 0 to 863 (1 pixel steps)	Frame Sync/ Timing Adjustments H Timing control	HTiming

Table 2. Summary of KAM-HD-FS Configuration Controls

Function	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Panel
Adjust vertical timing in lines	0	HD: 1080i/59.94 = 0 to 1124 1080i/50 = 0 to 1124 720p/59.94 = 0 to 749 SD: 480i/59.94 = 0 to 524 576i/50 = 0 to 624 (1 line steps)	Frame Sync/ Timing Adjustments V Timing control	VTiming
Loss of signal operation (Frame Sync mode – Frame reference timing source selected)	Auto Freeze	Pass, Auto Freeze, or Auto Blue	Frame Sync/ Loss of Signal Operation Pass, Auto Freeze, or Auto Blue radio button	LOS Oper
Manual Freeze mode	None	None, Frame, or Field (720p/59.94 video rate, None or Frame)	Frame Sync/ Manual Freeze Mode Selection None, Frame or Field radio button	ManFrzMode
Enable or disable RGB Proc Amp	Disable	Enable or Disable	System Config/ Proc Amps Enable/Disable Video Processing Enable or Disable radio button	VidPrcEn
Lock R, G, and B gains	Unlocked	Lock or Unlock	RGB Proc Amp/ Gain Lock checkbox	RGBGnLok
Adjust R gain	100%	0 to 200% (1% steps)	RGB Proc Amp/ R Gain (%)	RGain
Adjust G gain	100%	0 to 200% (1% steps)	RGB Proc Amp/ G Gain (%)	GGain
Adjust B gain	100%	0 to 200% (1% steps)	RGB Proc Amp/ B Gain (%)	BGain
Adjust R offset	0	± 100% (1% steps)	RGB Proc Amp/ R Offset (%)	ROffset
Adjust G offset	0	± 100% (1% steps)	RGB Proc Amp/ G Offset (%)	GOffset
Adjust B offset	0	± 100% (1% steps)	RGB Proc Amp/ B Offset (%)	BOffset
Enable or disable Video Proc Amp	Disable	Enable or Disable	System Config/ Proc Amps Enable/Disable Video Processing Enable or Disable radio button	VidPrcEn
Enable or disable video color bars test signal	Off	On or Off	Video Proc Amp/ Test Signal Enable or Disable radio button	VTstSig
Adjust color saturation (chroma gain)	100%	0 – 200% (1% steps)	Video Proc Amp/ Color Saturation (%)	ChroGain
Lock Y, Cb, and Cr gains together	Unlocked	Lock or Unlock	Video Proc Amp/ Gain Lock checkbox	YSatGnLok
Adjust Y gain (contrast)	100%	0 to 200% (1% steps)	Video Proc Amp/ Y Gain (%)	YGain
Adjust Cb gain	100%	0 to 200% (1% steps)	Video Proc Amp/ Cb Gain (%)	CbGain

Table 2. Summary of KAM-HD-FS Configuration Controls

Function	Default	Range/Choices Resolution	Web Page/ Function Name	Newton Panel
Adjust Cr gain	100%	0 to 200% (1% steps)	Video Proc Amp/ Cr Gain (%)	CrGain
Adjust Y offset (brightness)	0	± 100% (1% steps)	Video Proc Amp/ Y Offset (%)	YOffset
Adjust Cb offset	0	± 100% (1% steps)	Video Proc Amp/ Cb Offset (%)	CbOffset
Adjust Cr offset	0	± 100% (1% steps)	Video Proc Amp/ Cr Offset (%)	CrOffset
Adjust Hue	0	- 180 to +179 degrees (1 degree steps)	Video Proc Amp/ Hue (Deg)	Hue

Newton Control Panel Configuration

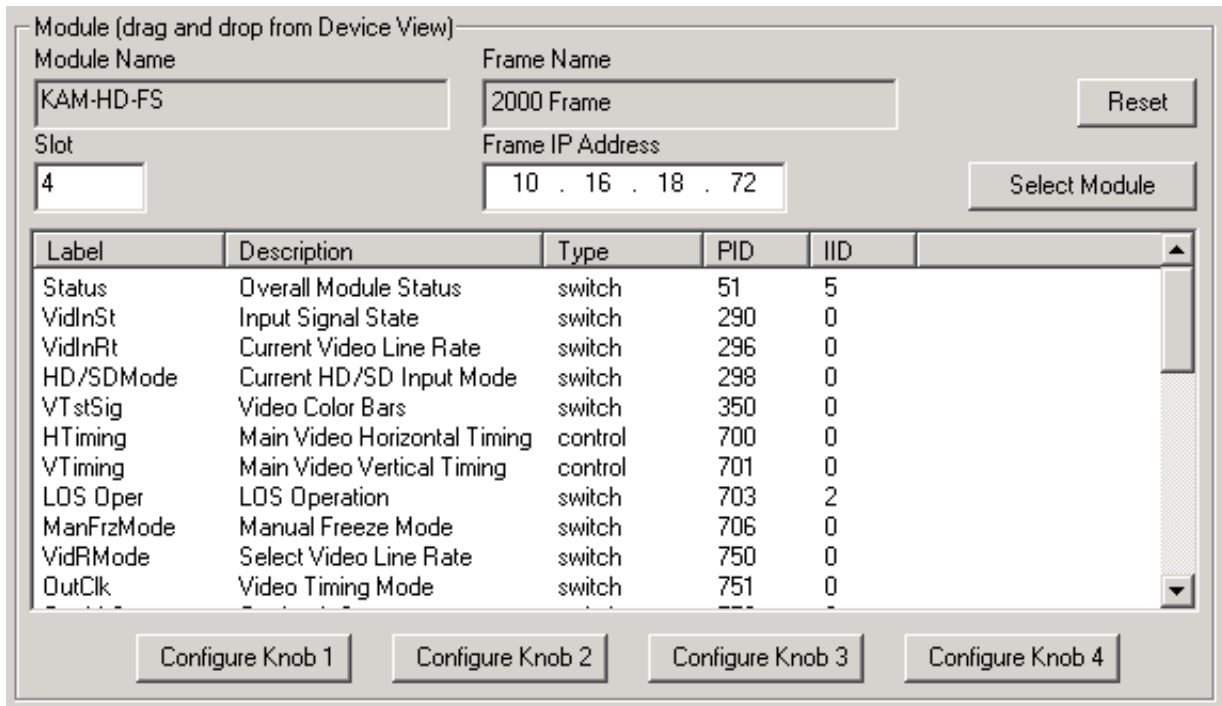
A Newton Control Panel (hard or soft version) can be interfaced to the Kameleon 2000 Series frame over the local network. Control panel access offers the following considerations for module configuration and monitoring:

- 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 module are listed in [Table 2 on page 15](#).

An example of the Newton Configurator is shown in [Figure 8 on page 18](#).

Figure 8. Newton Configurator Example



Refer to the documentation that accompanies the Newton Modular Control System for installation, configuration, and operation information.

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 the **Apply** button or **Enter**, upload processing time, and a manual screen refresh to become effective.
- Web interface recommended for setting up module signal and slot names, E-MEMS, and reporting status for SNMP and monitoring.

Refer to the Frame Status page shown in [Figure 9](#). The Kameleon and 2000 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 2000NET 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 2000NET software installed in your system. This manual reflects 2000NET software version 3.2.2.

Figure 9. 2000NET GUI

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: 2000T3N Description: Module Frame
 Frame Location: Mod Lab - Bay 2
 Frame Health Alarm **ALARM** Temperature Status **Pass**
 Fan Status **PASS**

Empty	Net Card	Empty	Power Sled
Empty		Empty	
Empty	Aux Card	Empty	Empty
Media Module		Empty	
Empty		Empty	Empty
Media Module		Media Module	

Properties
 Vendor Thomson, Grass Valley Software Version 3.2.2
 Media Slots 13

Bay 2 QA 2000 Frame
[Status](#)
[Configuration](#)
[1 Media Slot 1](#)
[2 Media Slot 2](#)
[3 Media Slot 3](#)
[4 KAM-HD-FS](#)
[5 Media Slot 5](#)
[6 Media Slot 6](#)
[7 Media Slot 7](#)
[8 Media Slot 8](#)
[9 Media Slot 9](#)
[10 Media Slot 10](#)
[11 Media Slot 11](#)
[12 Media Slot 12](#)
[13 2000NET](#)
[15 2000GEN](#)
[19 Power Sled 19](#)
[20 Fan Sled 20](#)
[21 Power Sled 21](#)

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Web Page Operations and Functional Elements

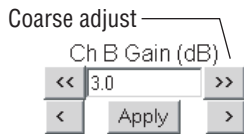
The following conventions and functional elements (shown at left) are used in Kameleon web page operations. (The examples shown throughout this manual represent 2000NET software version 3.2.2 or later):

Pulldown Menus — **Locate Module**



Check box — Report Error

Radio button — 525 625



Apply button —

Refresh button — 

Status LED — 

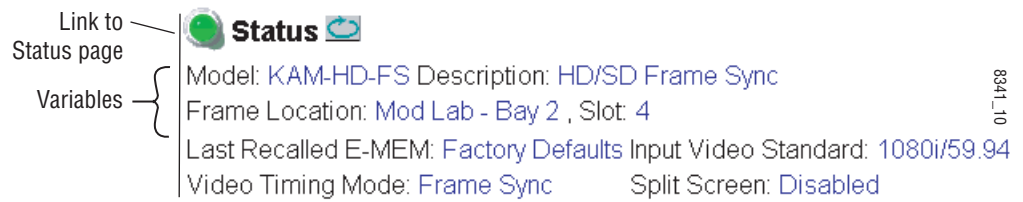
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- Pulldown menus allow you to choose selections from a list.
- Check boxes are used when a selection can be enabled or included in a group. Multiple check box selections or enables can be made for some parameters.
- Radio buttons are used to make a choice of one parameter in a group.
- Each numerical adjustment control has a **Coarse** adjust button (left and right top double arrows) and a **Fine** adjust button (left and right bottom single arrows).
To change a value, use the arrow button controls or enter a value into the number field and select the **Apply** button. You may also enter a number into the number field from a keyboard and hit the **Enter** key to apply the value.
- A **Refresh** button (circular arrow) is provided for manual refresh of the web page to view recently changed parameters.
- The Status LED is explained below.

Status and Identification Header

Each configuration web page has a Status and Identification Header (Figure 10).

Figure 10. Status/ID Header



Status LED icon

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

Variables:

- Model and Description are read-only generated by the module.
- Frame Location is entered in 2000 Series Kameleon Frame configuration.
- Slot number reports the module's location in the frame.
- Last Recalled E-MEM reports the last E-MEM configuration recalled from the module.
- Video Timing Mode reports the timing source chosen (Frame Sync or Delay) on the System Config web page.
- Split Screen status is reported (status is reported as **Enabled** or **Disabled** as set on the System Config, RGB Proc Amp or Video Proc Amp web pages).

Initial Configuration Process Overview

To configure the Kameleon module proceed as follows:

1. Go to the I/O Config web page ([page 26](#)) to name inputs and outputs.
2. Go to the System Config web page ([page 28](#)) to configure the input video type (HD or SD), the video rate mode, and the output timing source.
3. If not already connected, connect all input and output signals and verify component and signal presence and condition on the Status web page ([page 24](#)).
4. Go to the Functional View web page ([page 31](#)) to use the block links to configure each function in turn. Video processing must be enabled on the System Config web page or with the Newton control panel.

Note **Next, Functional View,** and **Back** links are provided to help you navigate through a logical configuration sequence.

5. Use the Slot Config web page ([page 45](#)) to assign Slot Configuration information such as slot name and asset number. Also enable and disable Frame Health and SNMP trap reporting on this web page.
6. Use E-MEM memory ([page 40](#)) to store or recall configurations as necessary.
7. Go to the Software Update web page ([page 47](#)) for information on updating software.

KAM-HD-FS Links and Web Pages

The 2000 GUI provides the following links and web pages for the module (Figure 11):

- Status – reports input, reference, and frame bus status and module information (page 24),
- I/O Config – shows a graphic representation of inputs and outputs to the module and allows naming of the input and output (page 26),
- System Config – provides output timing selection, input video type select, video rate select, video processor enable, and a split screen control (page 28),
- Functional View – shows a block diagram of the module with links to each module configuration page (page 31),
- Module Configuration pages for setting up the module including Video In, Frame Sync, RGB Proc Amp, and Video Proc Amp (page 32),
- E-MEM – provides Standard and Advanced E-MEM for Learn and Recall functions for up to 5 E-MEM registers (page 40),
- Slot Config – provides a Locate Module function, Slot Memory, and SNMP enable/disable controls (page 45), and
- Software Update – allows updating of software from a CD-ROM or the web site (page 47).

Figure 11. KAM-HD-FS Web Page Links

[4 KAM-HD-FS](#)

[Status](#)

[I/O Config](#)

[System Config](#)

[Functional View](#)

- [Video In](#)

- [Frame Sync](#)

- [RGB Proc Amp](#)

- [Video Proc Amp](#)

[E-MEM@](#)

[Slot Config](#)

[Software Update](#)

Status Web Page

Use this link

- [4 KAM-HD-FS](#)
- [Status](#)
- [I/O Config](#)
- [System Config](#)
- [Functional View](#)
- [Video In](#)
- [Frame Sync](#)
- [RGB Proc Amp](#)
- [Video Proc Amp](#)
- [E-MEM@](#)

The Status web page for the KAM-HD-FS module (Figure 12 on page 25) provides an overall indication of the health of the system and links to web pages for the active components:

- Status Header – the same on all Kameleon configuration pages (see *Web Page Operations and Functional Elements* on page 20),
- Color-coded communication status for each component and path,
- Summary of all fault/warning conditions, and
- Textual module status, front module, and submodule (if applicable) properties.

Color-coded Status Indicators and Links

Each box represents a Kameleon module or submodule as indicated in Figure 12 on page 25. Arrows represent signal paths that may or may not be monitored. These elements act as links when their function is active (indicated by underlined function name).

Color code:

- Green = Pass – operating as expected.
- Yellow = Warning – signal is absent, has errors, or is misconfigured.
- Red = Fault – a component has failed.
- Grey = Not monitored.
- White = Not present.

Warning/Fault Summary

The warnings and faults are reported in the Warning/Fault summary section of the Status web page as indicated in Figure 12 on page 25. When a fault or warning is detected, it will be reported in this area. A Fault indicates a serious condition that prohibits proper operation. A Warning indicates a condition which may or may not adversely affect operating conditions, but should be noted. Warnings may possibly be corrected by changing configuration, settings or input signals.

Status/Front Module Properties

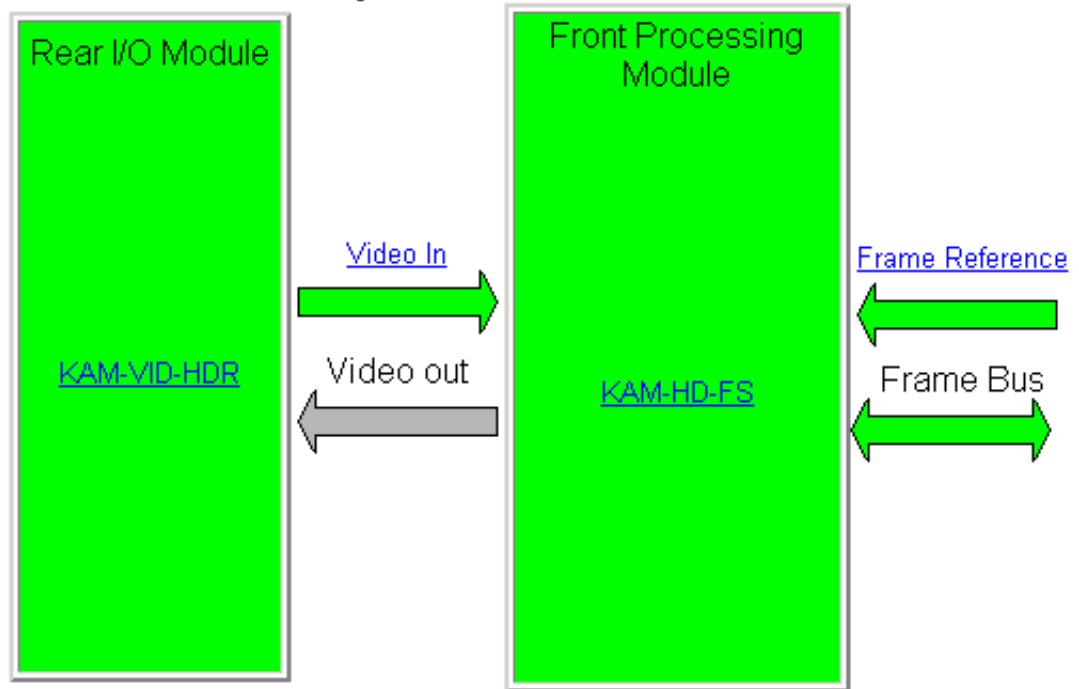
The Status/Front Module properties in the footer provide a textual summary of the color-coded module status. Front module properties provide hardware, firmware, software identification, and asset tag assignment for the KAM-HD-FS module.

Figure 12. KAM-HD-FS Status Web Page



Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)
Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)
Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/59.94](#)
Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

Kameleon Module Physical Structure



Warning and Fault summary section

Status:

Front Module: [PASS](#)

Rear Module: [PASS](#)

Front Module:

Part Number: [671-6514-01K](#)

Serial Number:

Hardware Revision: [01K](#)

Firmware Image 1 Version: [1.1.8](#)

Firmware Image 2 Version: [Inactive](#)

Software Version: [1.1.0](#)

Asset Tag:

I/O Config Web Page

- Use this link
- [4 KAM-HD-FS](#)
 - [Status](#)
 - [I/O Config](#)
 - [System Config](#)
 - [Functional View](#)
 - [Video In](#)
 - [Frame Sync](#)
 - [RGB Proc Amp](#)
 - [Video Proc Amp](#)
 - [E-MEM@](#)
 - [Slot Config](#)
 - [Software Update](#)

Use the I/O Config web page to:

- View a graphical overview of the rear module connector,
- See signal status of inputs, and
- Assign easily recognized signal names that will help later in the configuration process.

Figure 13 illustrates the I/O Config web page for the KAM-HD-FS.

Figure 13. KAM-HD-FS I/O Config Web Page



Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)
 Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)
 Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/59.94](#)
 Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

VID-HDR Rear Module Configuration

J10	J9	J8	J7	J6	J5	J4	J3	J2	J1
VI HD/SD SDI In	SDO HD/SD SDI Out		CVO Composite Out	CVO Composite Out	Fiber Fiber IF	SDO HD/SD SDI Out	SDO HD/SD SDI Out		SDO HD/SD SDI Out
		Blank						Blank	
Input	Output		Unused	Unused	Unused	Output	Output		Output
Video In	SDI Output		Unused	Unused	Unused	SDI Output	SDI Output		SDI Output

Signals Naming

HD/SD SDI In Name: HD/SD SDI Out Name:

Legend:

Present
Not Present
Not Monitored
Unused

I/O Config Web Page Elements

Each element of the I/O Config web page is explained below.

Header Row

The top header row provides the connector hardware physical label (J#) and the dedicated signal type for the connector. This information is determined by the type of rear module and front processor module installed (refer to the [Status Web Page on page 24](#)).

Connectors

The connector row illustrates connector type provided (BNC, fiber optic, or 3-pin terminal) for each port. For this rear module, one HD video input and four HD outputs, or one SD video input and four SD outputs are provided.

Input/Output Mode

I/O mode is either static read-only or an operational Input/Output selection (determined by the rear module used).

Signal Name

Enter a signal name (up to 12 characters) for each operational input/output. The name will be used to identify the signal in other configuration web pages. Factory default names are shown in [Figure 13 on page 26](#).

Status Boxes

As shown in the Legend at the bottom of the I/O Config web page, each connector is monitored and status reported with the following color code:

- Green = Pass – signal is present.
- Yellow = Warning – signal is absent, has errors, or is misconfigured.
- Light Grey = connector is not monitored.
- Dark Grey = connector is unused.

System Config Web Page

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The System Config web page (Figure 14 on page 29 for an HD input and Figure 15 on page 30 for an SD input) provides the following system configuration parameters:

- **Output Timing Selection** – select the output timing source as **Frame Reference** (2000GEN module is required in Kameleon 2000 frame for Frame Sync) or **Video In** (module will free run in Delay mode). Status (presence and genlock) of the timing sources will be indicated.
- **Input Video Type** – select the Input video as **HD** or **SD**.

Note Changing the Input Video Type with the radio buttons or with an E-MEM recall will cause the module to reboot and it will take approximately 30 seconds to re-initialize. Select the **Refresh** button to update the web page when complete.

- **Video Rate Mode** – set the HD video rate to **1080i/59.94**, **720p/59.94**, or **1080i/50**. The SD video rates are **480i/59.94** or **576i/50**.
- **Proc Amps Enable/Disable** – enable or disable both the RGB and Video Proc Amps by selecting the Video Processing **Enable** or **Disable** radio button. Both of the proc amps must be enabled for proper operation.
- **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). Enable the split screen by checking the **Split Screen** checkbox.

Use the **Position** control to set the amount of horizontal or vertical split (10 to 90%) of unprocessed video to appear on the screen.

This control also controls the other two Split Screen controls on the RGB Proc Amp and Video Proc Amp web pages.

Figure 14. KAM-HD-FS System Config Web Page – HD Input Video In

System Config

Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)
Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)
Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/59.94](#)
Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

Output Timing Selection

	Output Timing Source	Status	GenLock
Frame Reference	<input checked="" type="radio"/>	Present	Locked
Video In	<input type="radio"/>	Present	-

Input Video Type

HD SD

Note: Changes to this setting require up to 30 seconds to take affect and be reflected on this web page.

Video Rate Mode

1080i/59.94 720p/59.94 1080i/50

Proc Amps Enable/Disable

Video Processing: Disable Enable

Split Screen [Unprocessed]

Split Screen

Orientation: Vertical Horizontal

Position %:

Figure 15. KAM-HD-FS System Config Web Page – SD Video In

 **System Config** 

Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)

Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)

Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [480i/59.94](#)

Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

Output Timing Selection

	Output Timing Source	Status	GenLock
Frame Reference	<input checked="" type="radio"/>	Present	Locked
Video In	<input type="radio"/>	Present	-

Input Video Type

HD SD

Note: Changes to this setting require up to 30 seconds to take affect and be reflected on this web page.

Video Rate Mode

480i/59.94 576i/50

Proc Amps Enable/Disable

Video Processing: Disable Enable

Split Screen [Unprocessed]

Split Screen

Orientation: Vertical Horizontal

Position %

<< >> < > Apply

Functional View Web Page

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The Functional View web page (Figure 16) illustrates a block diagram of the KAM-HD-FS front media module showing module functions and signal paths that are active or inactive in the current configuration. It can be used as a link map for configuring module functions. Each block has a link to the configuration page for that function.

Color coding indicates active functions and signal flow. Greyed components are inactive due to hardware and/or software constraints. Underlined module functions are links to the web page for that function.

Use the Functional View to configure the KAM-HD-FS module in the order of the signal flow. Refer to each of the module configuration web pages given in the next section.

Figure 16. KAM-HD-FS Functional View Web Page

Functional View

Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)

Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)

Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/59.94](#)

Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)



Module Configuration Web Pages

Module configuration and monitoring is provided for the following functions with the web browser GUI or control panel interface:

- Video In ([page 33](#))
- Frame Sync ([page 34](#))
- RGB Proc Amp ([page 36](#))
- Video Proc Amp ([page 38](#))

After making a change, click on the **Apply** button to activate settings in each selection then click on the **Refresh** button at the top of the display to see the changes.

Select the **Back**, **Functional View**, or **Next** link to navigate to the next function or use the links on the left of the web page.

Video In Web Page

The Video In web page (Figure 17) provides status on the HD or SD Video input for the following:

- **Input Signal State** – indicates the presence or absence of the input video signal.
- **Input Signal Standard** – indicates the HD or SD format standard of the input video signal.

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Figure 17. KAM-HD-FS Video In Page

Video In

Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)
 Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)
 Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/59.94](#)
 Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

Input Signal State	Present
Input Signal Standard	1080i/59.94

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Frame Sync Web Page

The Frame Sync web page provides adjustments for horizontal and vertical output timing and loss of signal controls. The controls available on the Frame Sync page depend on the Video Timing Mode selected (Delay or Frame Sync).

Figure 18 illustrates the Frame Sync page in **Delay** mode (output timing source = **Video In** as set on System Config web page).

- **Timing Adjustment** – horizontal and vertical timing adjustments can be made on the output video as required.
- **Loss of Signal Operation** – will default to **Pass** (no auto freeze).
- **Manual Freeze Mode** – select a manual freeze mode from **None**, **Frame**, or **Field**.

Note In 720p/59.94 video rate, only the **None** and **Frame** selections are available.

Figure 18. KAM-HD-FS Frame Sync Web Page – Delay Mode

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Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)

Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)

Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/50](#)

Video Timing Mode: [Delay](#) Split Screen: [Disabled](#)

Timing Adjustment

H Timing (pixels)		V Timing (lines)	
<<	0	>>	
<	Apply	>	

Loss of Signal Operation

Manual Freeze Mode

None Frame Field

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When the module is set for a Video Timing Mode of Frame Sync, the web page will have the controls shown in [Figure 19](#).

- **Timing Adjustment** – horizontal and vertical timing adjustments can be made on the output video as required.
- **Loss of Signal Operation** – define the action of the output to **Pass** the video, do an **Auto Freeze** or take the output to a blue screen (**Auto Blue**) when the input signal is detected as lost.
- **Manual Freeze Mode** – select a manual freeze mode from **None**, **Frame**, or **Field**.

Note In 720p/59.94 video rate, only the **None** and **Frame** selections are available.

Figure 19. KAM-HD-FS Frame Sync Web Page – Frame Sync Mode

Frame Sync

Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)

Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)

Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/50](#)

Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

Timing Adjustment

H Timing (pixels)			V Timing (lines)		
<<	<input type="text" value="0"/>	>>	<<	<input type="text" value="0"/>	>>
<	<input type="button" value="Apply"/>	>	<	<input type="button" value="Apply"/>	>

Loss of Signal Operation

Pass Auto Freeze Auto Blue

Manual Freeze Mode

None Frame Field

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RGB Proc Amp Web Page

The RGB Proc Amp web page (Figure 20 on page 37) provides specific R, G, and B gain and offset controls for the input signal. It is designed to be used primarily with RGB signals but will affect any input signal when adjusted. For adjusting Y/Cb/Cr parameters, use the Video Proc Amp web page (see *Video Proc Amp Web Page* on page 38).

- The RGB Proc Amp is enabled or disabled on the *System Config Web Page* on page 28 with the **Proc Amp Enable/Disable** control.
- **R/G/B Gain Adjustments** – set the gain from 0 to 200% for the R, G, and/or B channel with the corresponding control or lock the controls together by checking the **Gain Lock** checkbox and adjust any one of the gain controls.
- **R/G/B Offset Adjustments** – set the offset from $\pm 100\%$ for the R, G, or B channel with the corresponding control.
- Return all values to unity by selecting the **Set to Unity** button.
- **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). Enable the split screen by checking the **Split Screen** checkbox.

Use the **Position** control to set the amount of horizontal or vertical split (10 to 90%) of unprocessed video to appear on the screen.

This control also controls the other two Split Screen controls on the System Config and Video Proc Amp web pages.

Figure 20. KAM-HD-FS RGB Proc Amp Web Page

 **RGB Proc Amp** 

Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)

Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)

Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/59.94](#)

Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

RGB Video Processing Controls:

<input type="checkbox"/> Gain Lock					
R Gain (%)		G Gain (%)		B Gain (%)	
<<	100	>>	<<	100	>>
<	Apply	>	<	Apply	>
R Offset (%)		G Offset (%)		B Offset (%)	
<<	0	>>	<<	0	>>
<	Apply	>	<	Apply	>

Set to Unity

Split Screen [Unprocessed]

<input type="checkbox"/> Split Screen	
Orientation: <input checked="" type="radio"/> Vertical <input type="radio"/> Horizontal	Position %
	<< 50 >>
	< Apply >

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Video Proc Amp Web Page

The Video Proc Amp web page (Figure 21 on page 39) provides overall video processing for the output signal with the following controls:

- The Video Proc Amp is enabled or disabled on the *System Config Web Page* on page 28 with the **Proc Amp Enable/Disable** control.
- Turn the Test Signal (Color Bars) on or off by selecting the Test Signal **Enable** or **Disable** radio button.
- **Y/Cb/Cr Gain** – Set the gain for the Y, Cb, or Cr channel from 0 – 200% with the corresponding control or lock the controls together by checking the **Video Gain Lock** checkbox and adjust any one of the gain controls.
- **Y/Cb/Cr Offset** – Set the offset $\pm 100\%$ for the Y, Cb, and Cr channels with the corresponding control.
- **Color Saturation** – set the overall color saturation (chroma gain) from 0 – 200%. (This setting will affect Cb and Cr gain slightly.)
- **Hue** – adjust the output hue from – 180 to + 179 degrees.
- Return all values to unity by selecting the **Set to Unity** button.
- **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). Enable the split screen by checking the **Split Screen** checkbox.

Use the **Position** control to set the amount of horizontal or vertical split (10 to 90%) of unprocessed video to appear on the screen.

This control also controls the other two Split Screen controls on the RGB Proc Amp and System Config web pages.

Figure 21. KAM-HD-FS Video Proc Amp Web Page

 **Video Proc Amp** 

Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)

Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)

Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/59.94](#)

Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

Video Processing Controls:

Test Signal: <input checked="" type="radio"/> Disable <input type="radio"/> Enable			
<input type="checkbox"/> Video Gain Lock			
Y Gain (%)	Color Saturation (%)	Cb Gain (%)	Cr Gain (%)
<input type="text" value="100"/> <input type="button" value="Apply"/>	<input type="text" value="100"/> <input type="button" value="Apply"/>	<input type="text" value="100"/> <input type="button" value="Apply"/>	<input type="text" value="100"/> <input type="button" value="Apply"/>
Y Offset (%)	Hue (Deg)	Cb Offset (%)	Cr Offset (%)
<input type="text" value="0"/> <input type="button" value="Apply"/>	<input type="text" value="0"/> <input type="button" value="Apply"/>	<input type="text" value="0"/> <input type="button" value="Apply"/>	<input type="text" value="0"/> <input type="button" value="Apply"/>
<input type="button" value="Set to Unity"/>			

Split Screen [Unprocessed]

<input type="checkbox"/> Split Screen	
Orientation: <input checked="" type="radio"/> Vertical <input type="radio"/> Horizontal	Position % <input type="text" value="50"/> <input type="button" value="Apply"/>

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E-MEM Web Page

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The E-MEM web page provides local operations for learning and recalling configurations into E-MEM registers. File operations are also available for saving or loading the learned E-MEM files to and from a hard disk or other accessible media.

Factory default settings for all channels can be recalled by selecting the **Recall factory settings** button. To return the module to the factory signal names (such as the signal inputs), select the **Recall factory names** button.

There are two E-MEM view selections: **Standard** and **Advanced**.

In Standard view (Figure 22), any one of five learned E-MEMs can be recalled by selecting the corresponding **Recall** button in the Local Operations window. This will place the configuration learned into that E-MEM into the module. This change will occur immediately upon recall.

To learn an E-MEM, select the **Advanced** button in the View Selection section. This will open the Advanced view (Figure 23 on page 41).

Figure 22. KAM-HD-FS E-MEM Page (Standard View)



Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)
 Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)
 Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/59.94](#)
 Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

View Selection: <input checked="" type="radio"/> Standard <input type="radio"/> Advanced	
Local Operations	
E-MEM 1:	1080i.50 <input type="button" value="Recall"/>
E-MEM 2:	<input type="button" value="Recall"/>
E-MEM 3:	<input type="button" value="Recall"/>
E-MEM 4:	<input type="button" value="Recall"/>
E-MEM 5:	<input type="button" value="Recall"/>
<input type="button" value="Recall"/>	Recall factory settings <input type="button" value="Recall"/> Recall factory names

The Advanced View (Figure 23) includes a File Operations section to Learn a configuration into E-MEM (**Learn**), save a file to a disk location (**Save to...**) or load a file from a disk location (**Load from...**).

To learn an E-MEM:

1. Open the **Advanced** view.
2. When the configuration is complete for the module, type a descriptive name for the configuration into an unused E-MEM register (or overwrite an existing one).
3. Learn the E-MEM to memory by selecting the corresponding **Learn** button. All module parameters are learned at once and stored in the same register. This register is now learned and ready for recall.

Figure 23. E-MEM Page (Advanced View)



Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)

Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)

Last Recalled E-MEM: [Factory Defaults](#) Input Video Standard: [1080i/59.94](#)

Video Timing Mode: [Frame Sync](#) Split Screen: [Disabled](#)

View Selection: Standard Advanced

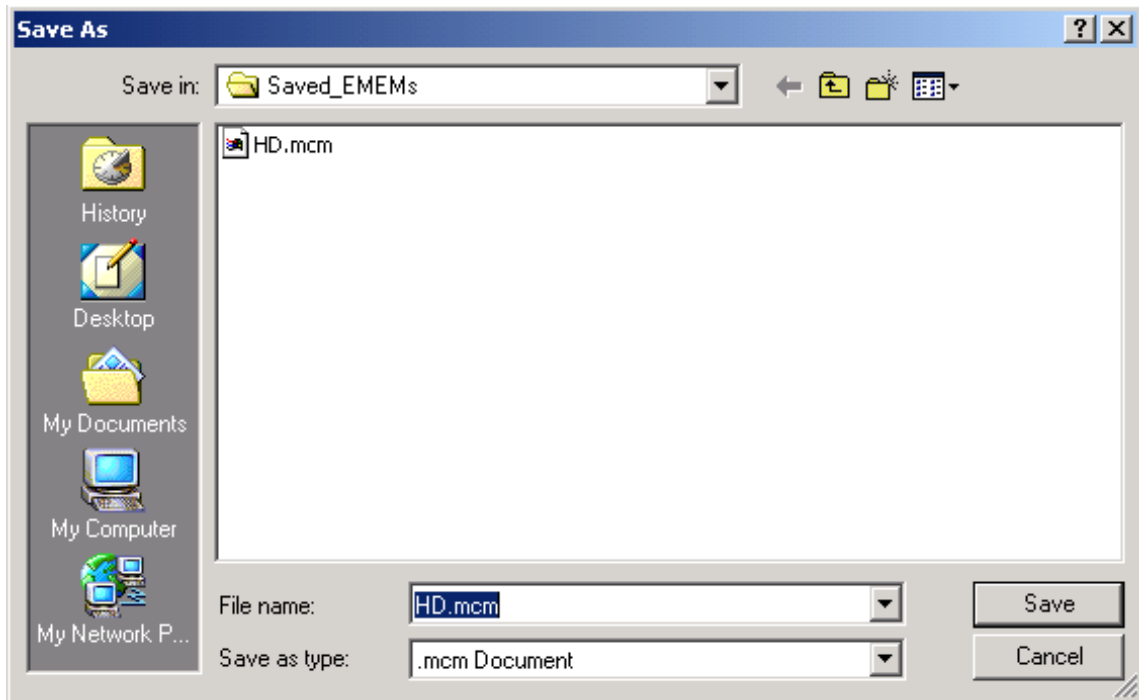
	Local Operations		File Operations		
E-MEM 1:	<input type="text" value="1080i.50"/>	<input type="button" value="Recall"/>	<input type="button" value="Learn"/>	<input type="button" value="Save to..."/>	<input type="button" value="Load from..."/>
E-MEM 2:	<input type="text"/>	<input type="button" value="Recall"/>	<input type="button" value="Learn"/>	<input type="button" value="Save to..."/>	<input type="button" value="Load from..."/>
E-MEM 3:	<input type="text"/>	<input type="button" value="Recall"/>	<input type="button" value="Learn"/>	<input type="button" value="Save to..."/>	<input type="button" value="Load from..."/>
E-MEM 4:	<input type="text"/>	<input type="button" value="Recall"/>	<input type="button" value="Learn"/>	<input type="button" value="Save to..."/>	<input type="button" value="Load from..."/>
E-MEM 5:	<input type="text"/>	<input type="button" value="Recall"/>	<input type="button" value="Learn"/>	<input type="button" value="Save to..."/>	<input type="button" value="Load from..."/>

Recall factory settings Recall factory names

To Save an E-MEM configuration to a file on a hard drive or other accessible media:

1. Select the corresponding **Save to...** button in the File Operations section.
2. This will bring up a File Download screen (not shown), select **Save** to bring up the Save As screen shown in [Figure 24](#).

Figure 24. E-MEM Save to Operation



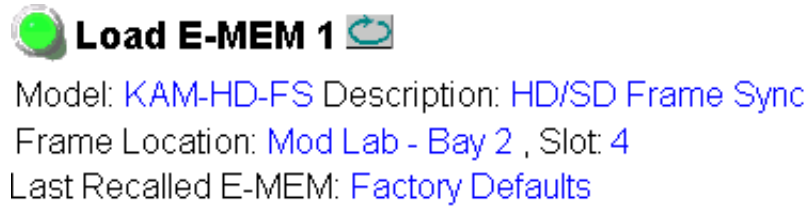
3. In the Save As dialog box, the file name will default to the E-MEM name. Browse to the folder where you want to save the configuration and select **Save**. The file saves as a .mcm file type.

Note You may rename the file during the Save process but the E-MEM name entered into the Local Operations window will not change on the web page to match the Save As name. Best practice is to leave the Save As file name the same as the E-MEM name.

To load a saved E-MEM from a location:

1. Select the **Load from ...** button in the File Operations section.
2. This will bring up the Load E-MEM page (Figure 25).

Figure 25. Load E-MEM Page

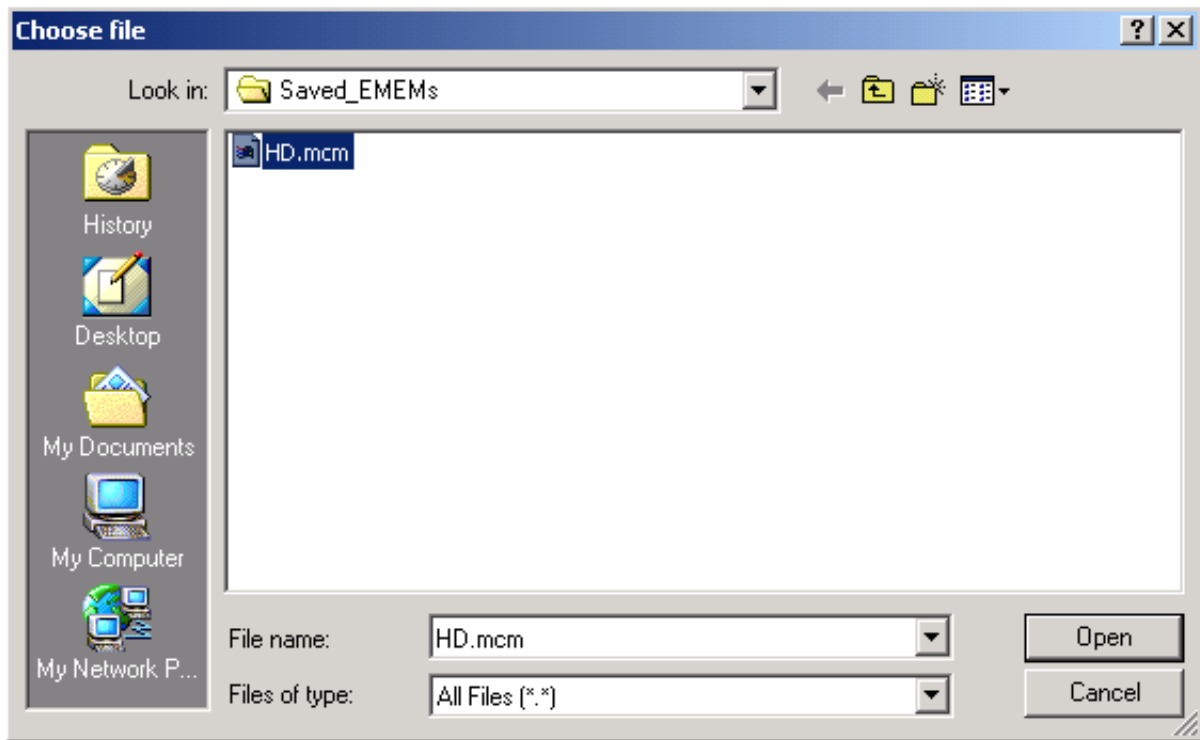


Load file Into E-MEM1...

Enter filename:

3. Select **Browse** to open the Choose File window (Figure 26). Browse to the location of the file you wish to load and select the file then the **Open** button to load the file or enter the filename and path in the Enter filename box.

Figure 26. Choose File Window



4. Once the correct path and filename is loaded, select the **Load** button on the Load E-MEM page.
5. This should place the recalled E-MEM file into the corresponding E-MEM window.
6. Select the corresponding **Recall** button to invoke this configuration.

Slot Config Page

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Use the Slot Config page (Figure 27 on page 46) to perform the following functions on the module:

- **Locate Module** – selecting **Flash** from the **Locate Module** pulldown flashes the yellow COMM and CONF LEDs on the front of the module so it can be located in the frame.
- **Slot Identification** – You may identify the module by typing a specific name in the **Name** field. The assigned name is stored on the 2000NET module and travels with the 2000NET 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 2000NET 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 2000NET module. If the 2000NET 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 2000NET module will be downloaded to the new module. The box must be checked before the current module with the saved configuration is removed.

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

- **Frame Health Reporting** – the reporting of Slot Fault, Signal Loss, and Reference Loss to the Frame Health connector on the rear of the frame can be enabled or disabled by selecting or deselecting the corresponding checkbox.
- **Hardware Switch Controls** – a read-only status report of 2000NET module switch settings for Module Status Reporting and Asynchronous Status Reporting. These functions must be enabled for the Slot SNMP Trap Reports to function.
- **Slot SNMP Trap Reports** – displayed only when the SNMP Agent software has been installed on the 2000NET 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 2000NET 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 2000NET configuration. Trap severity is read-only hard-coded information that is interpreted and responded to by the SNMP Manager software configuration.

Figure 27. Slot Config Page



Slot Config

Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)
 Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)

Locate Module

Slot Identification

Name:

Asset Tag:

Slot Memory

Restore upon Install

Frame Health Reporting

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

Hardware Switch Controls

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

Slot SNMP Trap Reports

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

Software Update Page

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The Software update page (Figure 28) allows updating of software from remote locations such as a CD-ROM or the Grass Valley web site. Updating with this method requires the use of an ftp server application also available from the Grass Valley web site. Refer to the *2000NET Network Interface Instruction Manual* for instructions for installing and using the ftp server application.

The preferred method for updating software is done using the NetConfig PC application option available from Grass Valley. Refer to *Software Updating With NetConfig* on page 48 or the *NetConfig Networking Application Instruction Manual* available with the application or on-line.

Note Uncheck the **Restore Upon Install** button on the Slot Config page before downloading new software.

Figure 28. Software Update Page



Model: [KAM-HD-FS](#) Description: [HD/SD Frame Sync](#)

Frame Location: [Mod Lab - Bay 2](#) , Slot: [4](#)

Software Version: [1.1.0](#)

[Enter Username, Password and File to Initiate Update](#)

	selection	current setting
FTP Server Address:	<input type="text" value="10.16.4.103"/>	10.16.4.103
File Path:	<input type="text" value="Enter Filename Here"/>	Enter Filename Here
FTP UserName:	<input type="text"/>	
FTP Password:	<input type="password"/>	
	<input type="button" value="Apply"/>	

Acquiring the Latest Software

The latest software for the module is available from the Thomson Grass Valley FAQ web site at the following URL:

<http://gvg.custhelp.com>

This will take you to the Grass Valley Customer Service FAQ data base. The information provided here is the most up-to-date. You may also subscribe to software updates through the FAQ site. This is recommended so that when new versions of software are released, you are notified by email.

To download the latest KAM-HD-FS software for either the FTP or Net-Config methods, do the following:

1. Navigate to the FAQ site and click on the first FAQ, **DOWNLOAD THE LATEST SOFTWARE?**
2. Select the 2000 Series link.
3. Select the link to the latest KAM-HD-FS Interface module software.
4. Follow the instructions to download the files to your PC.

Software Updating With NetConfig

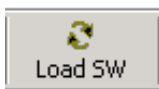
To use this method, your 2000NET module must be running version 3.2.2 or later and you must have the NetConfig Networking Application option running on a networked PC on the same subnet as the frame with the 2000NET module. Two files are required for updating software, an .fld and an .sw2 for the module being updated. For acquiring software, refer to [Acquiring the Latest Software on page 47](#).

To use NetConfig for software updating, follow the steps below:

1. Locate the PC directory in which the NetConfig application has been installed. The default location is C:\Program Files\Grass Valley Group\NetConfig.

If this is not where NetConfig was installed, right-click on the Net-Config desktop shortcut and select **Properties**, click on the **Shortcut** tab and note the location of the installation in the **Start In** field.

2. Copy the .sw2 file for the module update into the main NetConfig directory.
3. Create a subdirectory named **modular** (if one does not already exist) in the main NetConfig directory.
4. Copy the .fld file for the update into this modular subdirectory.
5. Open NetConfig and click on the **Load SW** icon on the top toolbar (shown at left).
6. The NetConfig Update Devices window will open showing the software files available ([Figure 29 on page 49](#)).



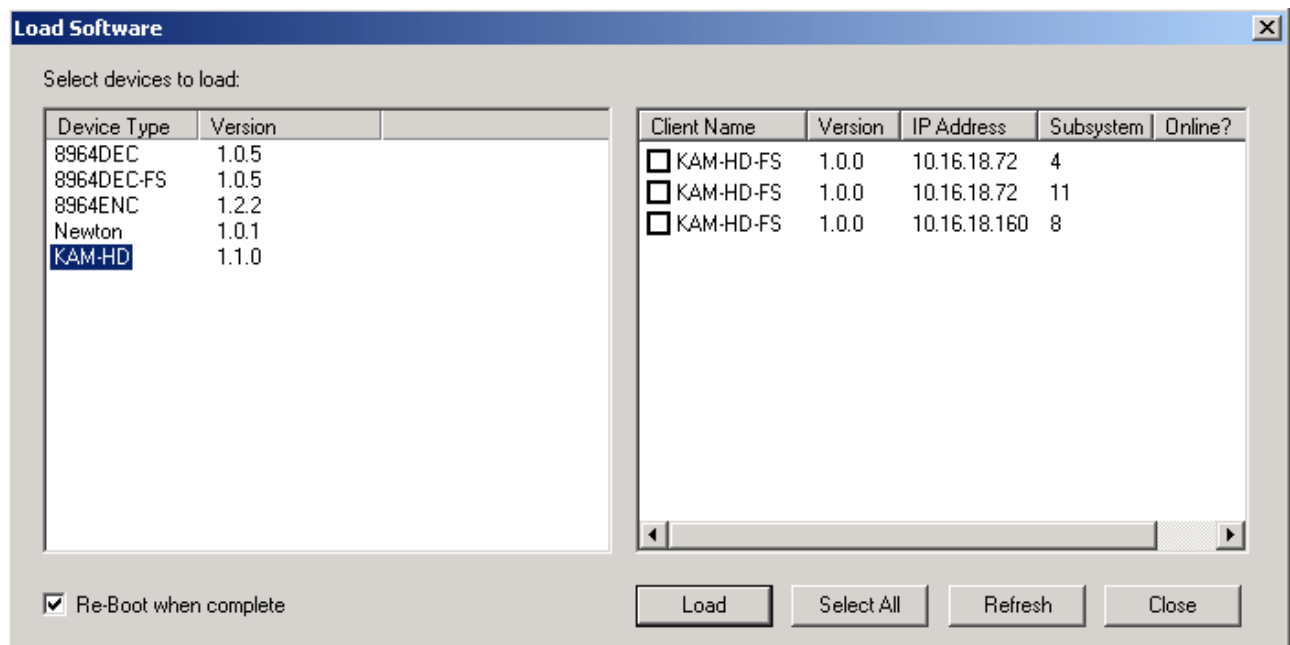
These device types and versions represent the .sw2 and .fld files loaded in the NetConfig main directory and the modular subdirectory. These files must be present on the PC running NetConfig for them to appear in the Device Type list.

7. Select the Device Type you wish to update. In the example in Figure 29, the KAM-HD module Device Type has been selected and will be highlighted. All of the modules of this type accessible on the network will appear in the window on the right under the **Client Name** heading as shown.

The current software loaded on each module will be listed as well as the IP address and other information for the module client.

8. Check the corresponding **Client Name** boxes to upgrade the modules or use the **Select All** button to update all modules of this type present on the network.
9. Press the **Load** button to perform the update to all the selected modules.
10. Once the loading is complete, select the **Refresh** button to make sure all selected modules have updated to the correct software version which will be reported in the window.

Figure 29. NetConfig Update Devices Window



For more information on using NetConfig, refer to the *NetConfig Networking Application Instruction Manual* which is included with the option, available on the Thomson Grass Valley web site, and may also be present in the NetConfig directory during some NetConfig installations (Newton Control Panel installation is one example).

Service

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

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

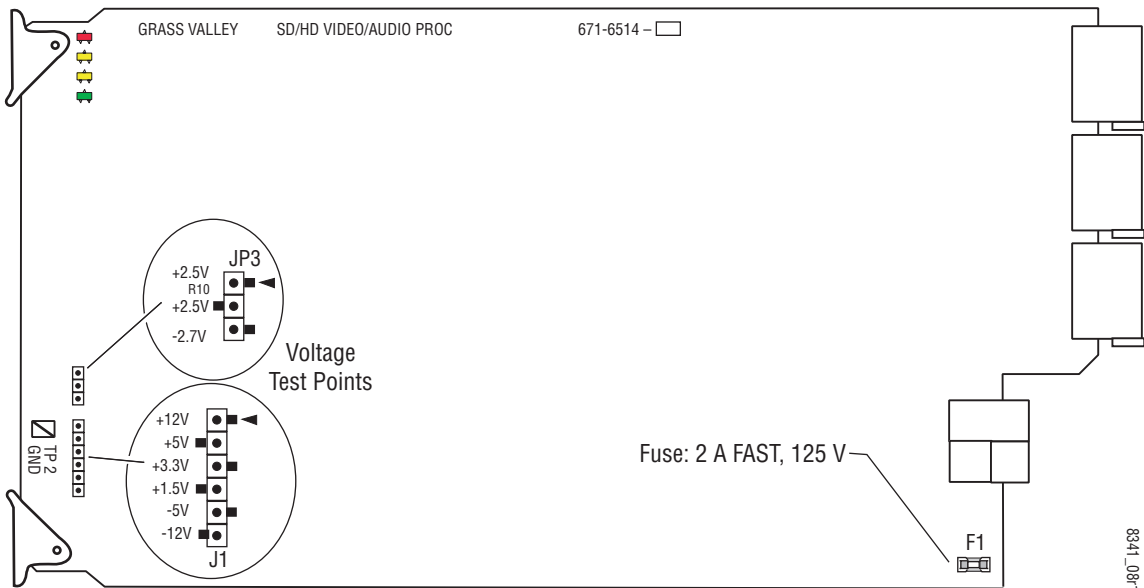
- Check frame and module power and signal present LEDs.
- Verify power at the voltage testpoints at the front of the module and check Fuse F1 if no voltage is detected (Figure 30).
- Check for presence and quality of input signals.
- Verify that source equipment is operating correctly.
- Check cable connections.

Refer to Figure 6 on page 13 for the location of PWR LED and Table 1 on page 13 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 30. Test Point and Fuse Locations



Specifications

Table 3. KAM -HD-FS Specifications

Parameter	Value
Digital Video Input	
Number of inputs	One
Signal type	HD: 1080i/59.94, 1080i/50, 720p/59.94 SD: 480i/59.94 and 576i/50
Connector type	75 Ω BNC terminating
Digital Video Output s	
Number of Outputs	4
Signal type	HD: 1080i/59.94, 1080i/50, 720p/59.94 SD: 480i/59.94 and 576i/50
Output jitter	< 0.2 ui (measured with Tektronix TDS820 oscilloscope triggered using external serial digital clock extractor with 50 kHz bandwidth)
Connector type	75 Ω BNC terminating
Video Performance	
Equalization	Input equalized to 100 m of 1694A cable
Processing accuracy	10 bits
Video delay range	0 to 1 frame
Mechanical	
Frame type	2000T1DNG or 2000T3NG Kameleon Frame
Environmental	
Operating temperature	Refer to Kameleon 2000 Frame specifications
Operating humidity	0 to 90%, non-condensing

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