

# 2030RDA

SD RECLOCKING DA MODULE

Instruction Manual

SOFTWARE VERSION 1.0.1A

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*the most watched worldwide*

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# *Preface*

## **About This Manual**

This manual describes the features of a specific 2000 Series module in the Kameleon Media Processing System. 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 Series Frames Instruction Manual*).



# *2030RDA SD Reclocking Distribution Amplifier*

## **Introduction**

The 2030RDA SD Reclocking Distribution Amplifier provides basic reclocking distribution of all SD (standard definition) digital video signals. All nine outputs are non-inverting, allowing reclocking of compressed signals such as SMPTE 310M and DVB-ASI at data rates down to 4 Mbps.

The 2030RDA features include:

- Nine outputs,
- Hot-swappable module,
- Automatic data rate detection,
- Reclocks at 143 Mb/s, 177 Mb/s, 270 Mb/s, or 360 Mb/s rate,
- Auto-equalizing up to 300 meters for reclocked SD video, and
- With 2000NET module installed, provides support for:
  - NetConfig Networking Configuration application,
  - SNMP monitoring support (NetCentral), and
  - Remote control and monitoring support including web browser and the Newton Control Panel interface.

# Installation

Installation of the 2030RDA module is a process of:

1. Placing the CoaxPRM (passive rear module) in a frame slot,
2. Setting jumper J24 on the 2030RDA front media module for Local or Remote operation (see *Remote Control Jumper on page 15*) then installing the module in the corresponding front slot, and
3. Cabling signal ports.

The 2030RDA 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 12*).

## Module Placement in the 2000 Frame

There are twelve slot locations in both the front and rear of a 3 RU frame and four slot locations in a 1 RU frame to accommodate 2000 and Kameleon Series media modules (audio/video signal handling modules).

The 2030RDA consists of a two-module set with a processing module and a passive rear module that can be plugged into any of the frame slot pairs. The rear modules provide the input and output interface connectors.

To install a 2031RDA module set in a 2000 Series frame:

1. Locate a vacant slot in the rear of the 3 RU frame (*Figure 1*) or the 2000T1DNG frame (*Figure 2 on page 9*).

Figure 1. 2000T3 Frame, Rear Slots

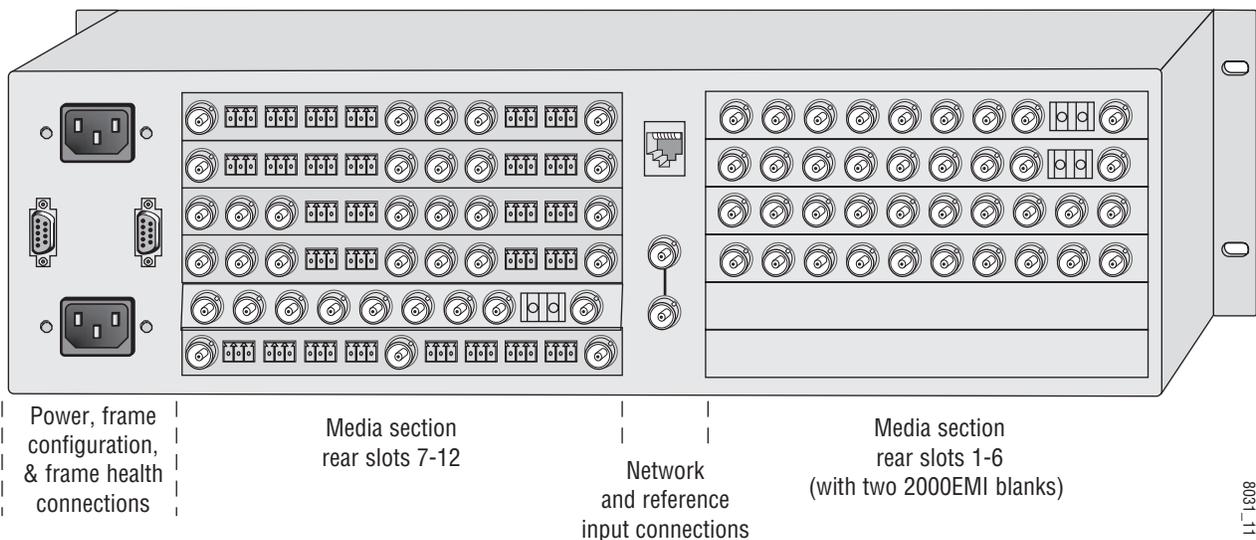
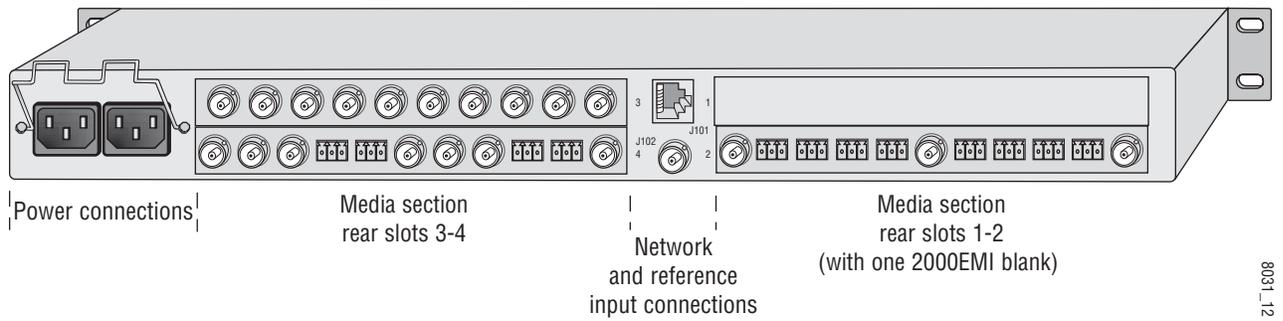


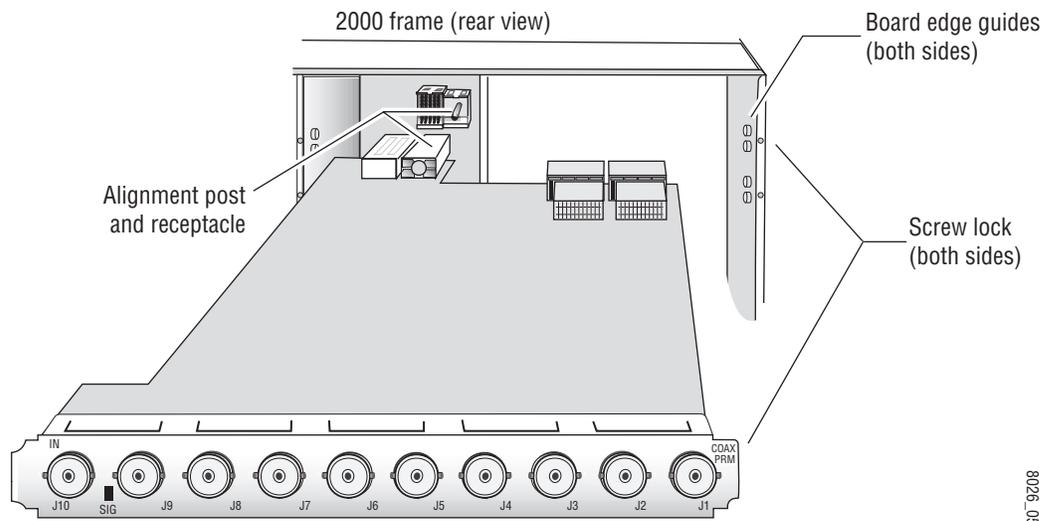
Figure 2. 2000T1 Frame, Rear Slot



8031\_12

2. Install the CoaxPRM passive rear module by inserting it into any rear slot of the frame as illustrated in Figure 3.

Figure 3. Installing Passive Rear Module



8026\_05

3. Verify that the module connector seats properly against the midplane.
4. Secure the module to the rear of the frame with the two screw locks on either side of the back panel using a crossblade screwdriver.

## Installing the 2030RDA Front Media Module

1. Locate the corresponding front media slot (1 -12) in the 3 RU frame frame (Figure 4) or front media (slot 1-4) the 1 RU frame (Figure 5).

Figure 4. 2000T3 Frame, Front Slots

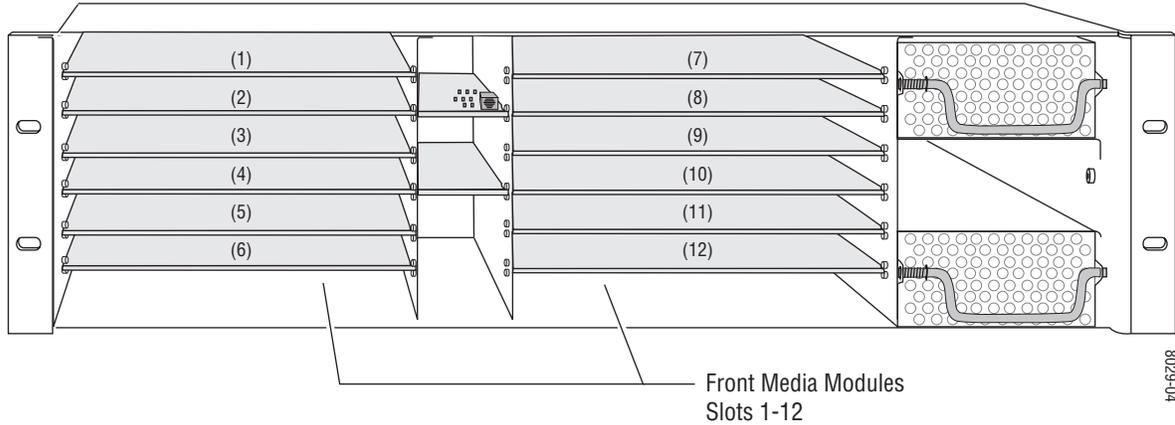
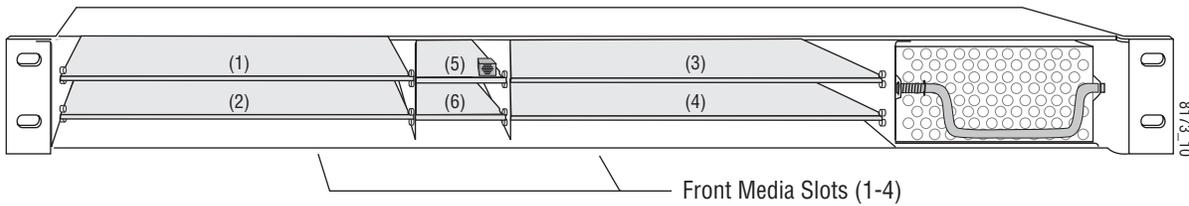
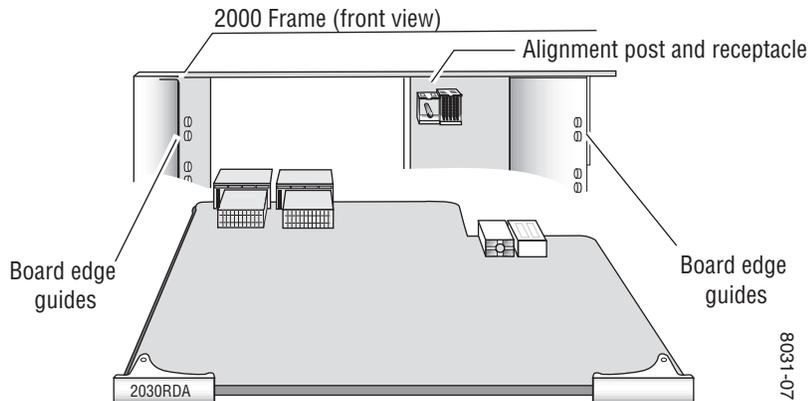


Figure 5. 2000T1 Frame, Front Slots



2. Verify that the module connector seats properly against the midplane and rear module connector (Figure 6).
3. Press firmly on both ejector tabs to seat the module.

Figure 6. Installing Front Media Module



## Cabling

All cabling to the 2030RDA module is done on the passive rear module at the back of the 2000 frame. Refer to [Figure 7](#) for a detailed illustration of the rear connections referenced in the steps below.

### Input

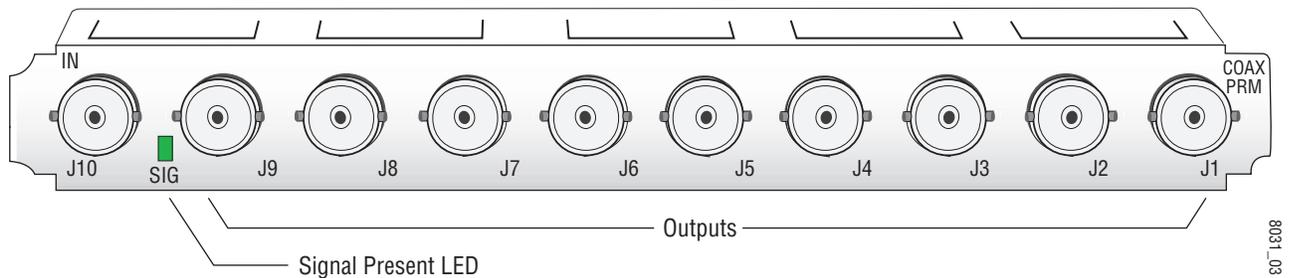
Connect an SD video input to BNC J10. The 2030RDA will accept any of the serial digital component video signals conforming to the following SMPTE formats:

- 259M (143 Mbps, 177 Mbps, 270 Mbps, 360 Mbps)
- 4 Mbp/s to 360 Mbp/s (tested with PN20 pseudo noise sequence ratio, maximum 19:1)
- SMPTE 310M
- DVB-ASI

### Outputs

The input signal is distributed to nine output ports. Connect video output devices to outputs J1 through J9 provided on the CoaxPRM Passive Rear module.

Figure 7. CoaxPRM Passive Rear Module Input/Output Connectors



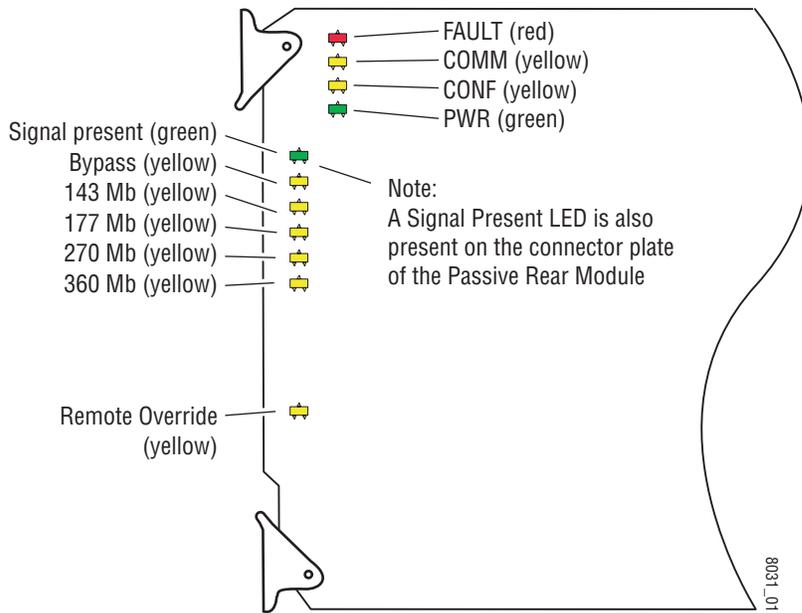
# Power Up

The front LED indicators and configuration switches are illustrated in [Figure 8](#). Upon power-up, the green PWR LED should light and the yellow CONF LED should illuminate for the duration of module initialization.

## Operation Indicator LEDs

With factory default configuration and a valid input signal connected, the green PWR LED, the green Signal present LEDs and the detected signal data rate LED should be on. Refer to [Table 1 on page 13](#) to see a complete list of possible operating conditions and the resulting indicator status.

Figure 8. LEDs and Configuration Switches



A red FAULT LED indicates an error situation and, when noted with the other indicator LEDs, can indicate a specific problem area. [Table 1](#) describes signal output and LED indications for the various input/reference combinations and user settings.

*Table 1. Indicator LEDs and Conditions Indicated*

LED	Indication	Condition
<b>FAULT (red)</b>	Off	Normal operation
	On continuously	Module has detected internal fault
	Long flash	Configuration problems, check inputs and settings
<b>COMM (yellow)</b>	Off	No activity on frame communication bus
	Long flash	Location Command received by the module from a remote control system
	Short flash	Activity present on the frame communication bus
<b>CONF (yellow)</b>	Off	Module is in normal operating mode
	On continuously	Module is initializing, changing operating modes or updating firmware
<b>PWR (green)</b>	Off	No power to module or module's DC/DC converter failed
	On continuously	Normal operation, module is powered
<b>Signal Present LEDs (green)</b>	Off	No input signal detected
	On	Input carrier signal detected
<b>Bypass (yellow)</b>	Off	Reclocking enabled and auto-rate detection mode is active
	On	Bypass mode, input signal will not be reclocked
<b>143 Mb (yellow)</b>	On	Input signal is locked at 143 Mb rate
<b>177 Mb (yellow)</b>	On	Input signal is locked at 177 Mb rate
<b>270 Mb (yellow)</b>	On	Input signal is locked at 270 Mb rate
<b>360 Mb (yellow)</b>	On	Input signal is locked at 360 Mb rate
<b>Remote Override (yellow)</b>	Off	Module settings match those indicated by module jumpers
	On	Settings on the modules jumpers are overridden by remote control

[Table 2](#) provides the various output conditions possible for a given input and module setting.

*Table 2. Possible Output Conditions*

Input	Setting	Output Condition
Standard Definition SDI video	Auto or Bypass	Standard Definition SDI video
Other carrier	Bypass	Other carrier
Other carrier	Auto	Signal with errors
No signal or over EQ range	All modes	Muted

# Configuration and Monitoring

The 2030RDA can be configured locally using on-board switches or remotely using the 2000NET network interface GUI or a Newton Control Panel. Operation of these control types is explained in detail in their respective sections of this manual.

**Note** Not all available functions are configurable with the local on-board controls.

Refer to the following sections for configuration instructions:

- Configuration Summary (page 14)
- Local On-board Configuration (page 15)
- Remote Configuration and Monitoring (page 16)

## Configuration Summary

The configuration parameters and monitoring functions available with the local on-board jumpers, web browser interface, and the Newton Control Panel are summarized in Table 3. The parameter defaults, choices, ranges, and resolution are provided for each function.

Table 3. Summary of 2030RDA Configuration Functions

Function Type	Default	Range/Choices Resolution	Web Page/ Function Name	On-Board Jumper Setting	Newton Control Panel
Mode	Auto	Auto Manual Bypass	Standard Selections/ Mode Pulldown	JP25 pins 1-2 = AUTO JP25 pins 2-3 = BYPASS	Mode
Manual standard selection	–	Manual 143Mb Manual 177Mb Manual 270Mb Manual 360Mb	Standard Selections/ Mode Pulldown/ Manual mode	No on-board manual selections available.	StdSel
Recall factory defaults	–	See Default column	Recall Factory Defaults <b>Recall Fact. Default</b> button	N/A	N/A

## Local On-board Module Configuration

The 2030RDA module can be configured locally using the jumpers shown in Figure 9. The CONF LED indicates status of the configuration process.

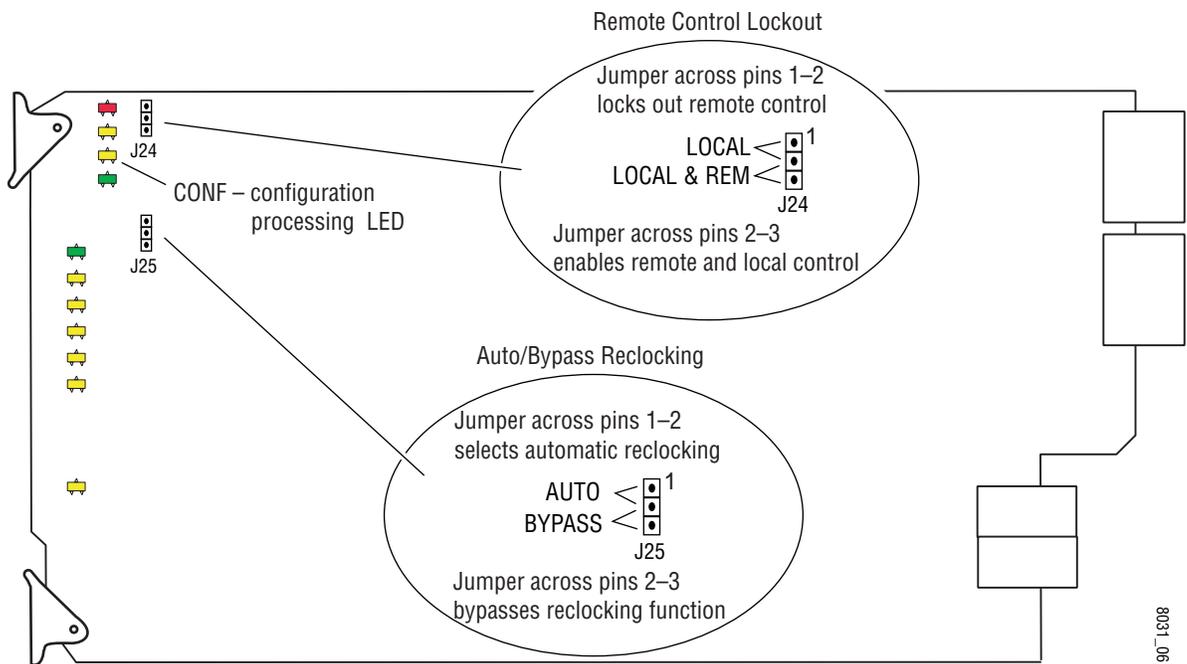
These components perform the following:

- Jumper J24 – sets control mode for Local only or Remote and Local.
- Jumper J25 – enables or disables the reclocking function.
- CONF (configuring) LED – when on, indicates the module is initializing or processing configuration information.

### Remote Control Jumper

When the jumper is placed across pins 1 and 2 of jumper block J24, module settings are changed from the on-board jumpers only. To have both Local and Remote access, set the jumper across pins 2 and 3.

Figure 9. Module Configuration Jumpers



### Auto/Bypass Jumper

When the jumper is placed across pins 1 and 2 of jumper block J25, The detected video signal will be reclocked at the appropriate rate. With the jumper across pins 2 and 3 all reclocking is bypassed. This jumper can be overridden by the remote controls.

## Remote Configuration and Monitoring

Configuration and monitoring can be performed using a web browser GUI interface or a networked Newton Control Panel when the 2000NET Network Interface module is present in the video frame. Each of these interfaces is described below.

### 2000NET Module Information

Refer to the *2000NET Network Interface Module Instruction Manual* for information on the 2000NET Network Interface module and setting up and operating the Kameleon 2000 frame network.

### 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 factory default recalls. The available control panel controls for the module are listed in [Table 3 on page 14](#).

An example of the Newton Configurator is shown in [Figure 10 on page 17](#).

Figure 10. Newton Configurator Example

Module (drag and drop from Device View)

Module Name: 2030RDA      Frame Name: 2000Frame     

Slot: 9      Frame IP Address: 10 . 16 . 18 . 6     

Label	Description	Type	PID	IID
State	Slot Status	switch	51	0
Input Sig	Input Signal	switch	52	0
Ref Sig	Reference Signal	switch	59	0
Mode	Mode	switch	710	0
StdSel	Standard Selection	switch	711	0
CurBitRt	Current Bit Rate	switch	712	0

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 factory parameter and name default recalls, 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, and reporting status for SNMP and monitoring.

Refer to the Frame Status page shown in [Figure 11](#). 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 11. 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

Media Module	Net Card	Empty	Power Sled
Media Module		Media Module	
Media Module	Aux Card	Media Module	Empty
Media Module		Empty	
Media Module		Empty	Power Sled
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 2040RDA-FR](#)  
[3 2040RDA-16FR](#)  
[4 2030RDA](#)  
[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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## 2030RDA Links and Web Pages

The 2000 GUI provides the following links and web pages for the 2030RDA module (Figure 12):

- Status – reports input and reference signal status and module information (page 20),
- Standard Selection – provides controls for setting reclocking modes (page 21),
- Recall Factory Defaults – provides recall of factory defaults (page 23),
- Slot Config – provides a Locate Module function, Slot Memory, and SNMP functions (page 24), and
- Software Update – gives information on how to update software (page 27).

Figure 12. 2030RDA Web Page Links

[4 2030RDA](#)  
[Status](#)  
[Standard Selections](#)  
[Recall Factory Defaults](#)  
[Slot Config](#)  
[Software Update](#)

## Status Web Page

- Use this link
- [4 2030RDA](#)
  - [Status](#)
  - [Standard Selections](#)
  - [Recall Factory Defaults](#)
  - [Slot Config](#)
  - [Software Update](#)

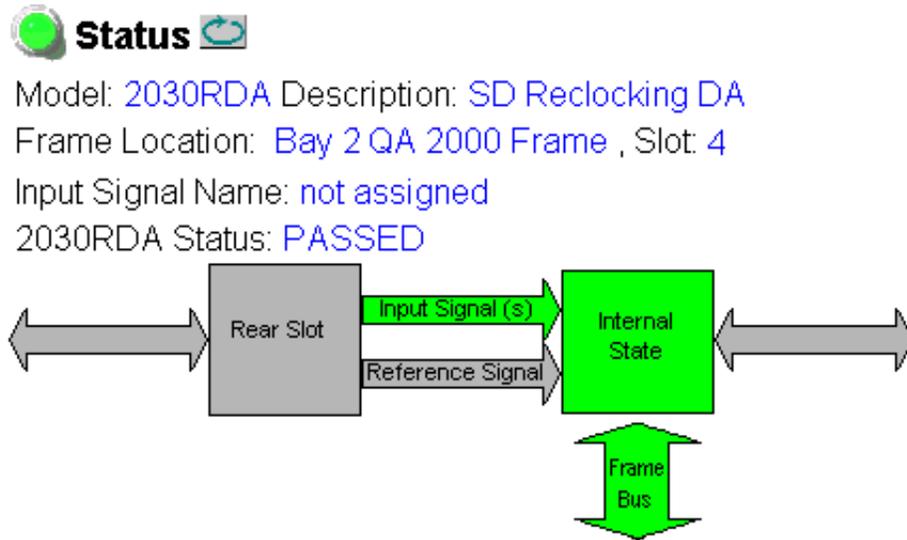
The Status web page shows the status of the input signal(s) and the frame bus communication. Color coding of the display indicates the signal status. In general, colors used on the frame and modules indicate:

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

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

The Status page for the 2030RDA is illustrated in Figure 13.

Figure 13. 2030RDA Status Web Page



Rear Slot Status: **NO COMM**

### Properties

Hardware Revision **00N** Serial Number **1434730**  
Software Version **1.0.1A** Part Number **671-5247**

## Standard Selection Web Page

Use  
this  
link

- [4 2030RDA](#)
- [Status](#)
- [Standard Selections](#)
- [Recall Factory Defaults](#)
- [Slot Config](#)
- [Software Update](#)

The Standard Selection web page (Figure 14 on page 22 and Figure 15 on page 22) provides both status reporting and controls for the module.

The following parameter controls are provided on the Settings web page. Select the **Apply** button after each parameter selection.

### Mode

Set the reclocking mode to one of the following with the menu pulldown:

- **Auto** – if the module detects the input signal as one of the SMPTE standard definition rates (143 Mb/s, 177 Mb/s, 270 Mb/s, 360 Mb/s, or 540 Mb/s), it will reclock the signal at that rate. If one of these rates is not detected, the module will not reclock the signal (bypass the reclocker) and distribute the signal to the outputs.
- **Manual** – set the mode to lock to one of the following data rates:
  - **143Mb** – the module will attempt to reclock the input signal at 143 Mb/s. If this signal rate is not detected, the signal will not be reclocked and will be passed to the output as is (corrupted).
  - **177Mb** – the module will attempt to reclock the input signal at 177 Mb/s. If this signal rate is not detected, the signal will not be reclocked and will be passed to the output as is (corrupted).
  - **270Mb** – the module will attempt to reclock the input signal at 270 Mb/s. If this signal rate is not detected, the signal will not be reclocked and will be passed to the output as is (corrupted). This setting is recommended for DVB-ASI signals.
  - **360Mb** – the module will attempt to reclock the input signal at 360 Mb/s. If this signal rate is not detected, the signal will not be reclocked and will be passed to the output as is (corrupted).
- **Bypass** – reclocking is completely bypassed. The input signal passes directly to the outputs without reclocking.

**Note** For DVB-ASI signals, set the mode to **Manual – 270 Mb**.

Figure 14. Standard Selections Web Page – Auto Mode

 **Standard Selections** 

Model: [2030RDA](#) Description: [SD Reclocking DA](#)  
Frame Location: [Bay 2 QA 2000 Frame](#) , Slot: [4](#)  
Input Signal: [Signal Present](#)

Mode: selection current setting  
  [Auto](#)

Current Bit Rate: [Bypass](#)

Figure 15. Standards Selection Web Page – Manual Mode

 **Standard Selections** 

Model: [2030RDA](#) Description: [SD Reclocking DA](#)  
Frame Location: [Bay 2 QA 2000 Frame](#) , Slot: [4](#)  
Input Signal: [Signal Present](#)

Mode: selection current setting  
  [Manual](#)

Standard Selection: selection current setting  
  [143 Mb](#)

- 143 Mb
- 177 Mb
- 270 Mb
- 360 Mb

## Recall Factory Defaults

Use  
this  
link →

- [4 2030RDA](#)
- [Status](#)
- [Standard Selections](#)
- [Recall Factory Defaults](#)
- [Slot Config](#)
- [Software Update](#)

The Recall Factory Defaults web page (Figure 16) provides a **Recall Fact. Default** Button to restores the module to the default value of Auto Mode.

Figure 16. Recall Factory Defaults Web Page



## Slot Config Web Page

- 4 [2030RDA](#)
  - [Status](#)
  - [Standard Selections](#)
  - [Recall Factory Defaults](#)
  - [Slot Config](#)
  - [Software Update](#)
- Use this link

Use the Slot Config web page (Figure 17 on page 26) to perform the following functions on the 2030RDA module:

- **Locate Module** – selecting the **Flash** radio button lights the yellow COMM and red FAULT LEDs for 3 quick flashes 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.

You may also assign a name to the input signal in the **Input Signal Name** field. Select **Default** to enter the factory default signal 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.

- **Frame Health Reporting** – the reporting of Slot Fault, Signal Loss, and Reference Loss can be enabled or disabled to the Frame Health connector on the rear of the Kameleon 2000T3 frame 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 (dipswitch S1 segment 7 and dipswitch S2 segment 1). 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 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.

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 17. 2030RDA Slot Config Web Page

 **Slot Config** 

Model: [2030RDA](#) Description: [SD Reclocking DA](#)  
 Frame Location: [Bay 2 QA 2000 Frame](#) , Slot: [4](#)

**Locate Module**

Flash  Off

**Slot Identification**

Name:

Input Signal Name:

Asset Tag:

**Slot Memory**

Restore upon Install

**Frame Health Reporting**

	Slot Fault	Signal Loss	Reference Loss
Enabled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Trap Severity	<a href="#">Alarm</a>	<a href="#">Warning</a>	<a href="#">Warning</a>	<a href="#">Warning</a>

## Software Update Web Page

Use  
this  
link

- [4 2030RDA](#)
- [Status](#)
- [Standard Selections](#)
- [Recall Factory Defaults](#)
- [Slot Config](#)
- [Software Update](#)

The Software Update web page (Figure 18) for performing module software updates via the web or using the NetConfig networking application is currently not supported for this module. For instructions on updating to the latest software, refer first to the 2030RDA Release Notes that accompany the software update for complete details.

Currently, the only recommended method of software updating is done with a software kit (8900-FLOAD-CBL) that includes a CD-ROM with the current software files and a serial cable assembly available from Grass Valley.

Refer to the *8900-FLOAD-CBL Software Upgrade Instruction Manual* in pdf format on the CD-ROM for complete updating instructions and the required software files for the 2030RDA.

Figure 18. Software Update Web Page

### **Software Update**

Model: [2030RDA](#) Description: [SD Reclocking DA](#)

Frame Location: [Bay 2 QA 2000 Frame](#) , Slot: [4](#)

Software Version: [1.0.1A](#)

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

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

## Status Monitoring

This section provides a summary of status monitoring and reporting for a Kameleon 2000 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.

2000 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 2000 frames indicate status of the frame and the installed power supplies, fans in the front covers, and modules.

When a red FAULT LED is lit on a frame front cover, the fault will also be reported on the 2000NET 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 (2000NET 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 [LEDs on page 28](#). LEDs for the 2000NET module are described in the *2000NET Network Interface Instruction Manual*.

## Frame Alarm

Connection and use of the Frame Alarm (3 RU frames only) is covered in detail in the *2000NET Network Interface Instruction Manual*.

## Web Browser Interface

When the 2000NET 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 (2000NET version 3.0 or later).

In general, graphics and text colors used indicate the following:

- Green = Pass – signal or reference present, no problems detected.
- Red = Fault – fault condition.
- Yellow = Warning – signal is absent, has errors, or is mis-configured.
- Grey = Not monitored (older 2000 module).
- White = Not present.

Status reporting for the frame is enabled or disabled with the configuration DIP switches on the 2000NET module. Most module status reporting items can be enabled or disabled on individual configuration web pages.

## **SNMP Reporting**

The Kameleon Series system uses the Simple Network Monitoring Protocol (SNMP) internet standard for reporting status information to remote monitoring stations. When SNMP Agent software is installed on the 2000NET 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 2000NET Configuration page for the Frame, the 2000NET module, and each module slot. Refer to the *2000NET Network Interface Instruction Manual* for installation instructions.

# Specifications

Table 4. 2030RDA Specifications

Parameter	Value
<b>Serial Digital Component Input</b>	
Number and type of inputs	One 75 $\Omega$ BNC
Input signal formats	Serial digital component video conforming to the following formats: <ul style="list-style-type: none"> <li>• 259M (143 Mbps, 177 Mbps, 270 Mbps, 360 Mbps)</li> <li>• 4 Mbps to 360 Mbps with PN20 pseudo noise sequence, maximum ratio 19:1</li> <li>• SMPTE 310M</li> <li>• DVB-ASI</li> </ul>
Signal level	SDI 800 mV $\pm$ 10% maximum
Return loss	> 15 dB 0.004 to 360 MHz
Auto-equalization	SD – Up to 300 meters (with Belden 8281 cable or equivalent)
<b>Serial Digital Component Outputs</b>	
Number and type of outputs	Nine 75 $\Omega$ BNCs
Output signal formats	Serial digital component video conforming to the following formats: <ul style="list-style-type: none"> <li>• 259M (143 Mbps, 177 Mbps, 270 Mbps, 360 Mbps)</li> <li>• 4 Mbps to 360 Mbps with PN20 pseudo noise sequence, maximum ratio 19:1</li> <li>• SMPTE 310M</li> <li>• DVB-ASI</li> </ul>
Output level	SDI 800 mV $\pm$ 10%
Auto mute	Output is muted if detected cable length is >350 meters
Return loss	> 15 dB 0.004 to 360 MHz
Error checking	Transparent to embedded EDH
Electrical length	23 ns for 143 Mbps $\pm$ 1 ns 21 ns for 177 Mbps $\pm$ 1 ns 18 ns for 270 Mbps $\pm$ 1 ns 14 ns for 360 Mbps $\pm$ 1 ns 10 ns for bypass $\pm$ 1 ns
Rise and fall time	400-700 ps between 20-80%
Output polarity	Non-inverted
Jitter	< 0.2 UI
<b>Power</b>	
Input power maximum	< 7 Watts
<b>Environmental</b>	
Operating temperature range	0 to +45 $^{\circ}$ C
Non-operating Temperature	-10 to +70 $^{\circ}$ C
Operating Humidity Range	10 to 90% non-condensing

## Service

The 2030RDA 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 as directed by Customer Service.

### Power-up Diagnostics Failure

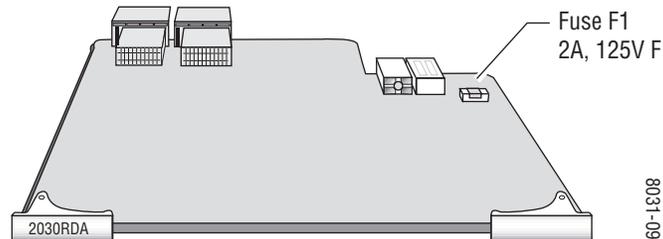
If the module has not passed self-diagnostics, do not attempt to troubleshoot. Return the unit to Grass Valley (see [Module Repair](#)).

### Troubleshooting

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

- Check frame and module power.
- If module power is not present, check fuse F1 (see [Figure 19](#)).
- Check for presence and quality of input signals.
- Verify that source equipment is operating correctly.
- Check cable connections.

Figure 19. 2030RDA Fuse Location



### Module Repair

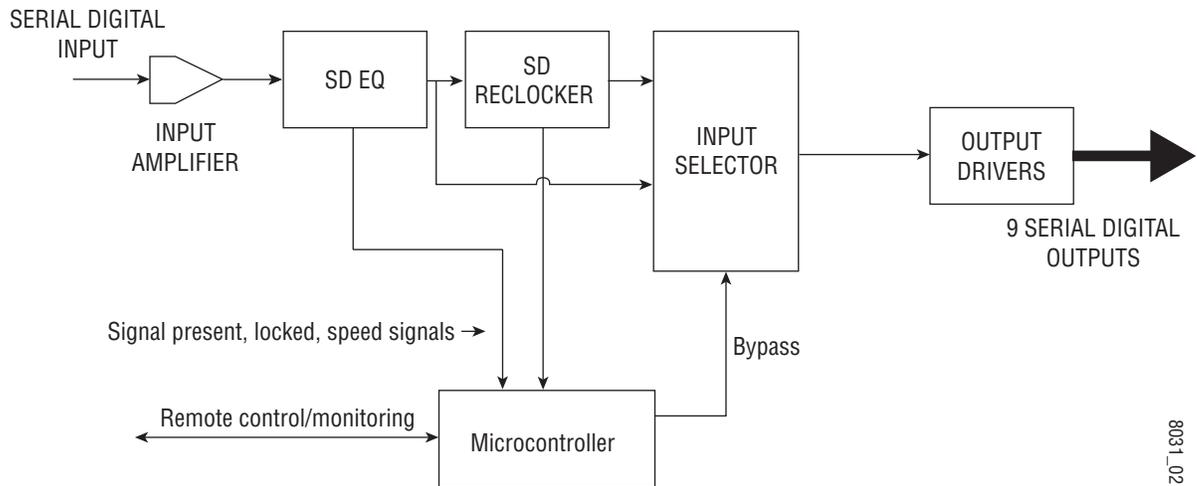
If the module is still not operating correctly, replace it with a known good spare and return the faulty module to a designated Grass Valley repair depot. Call your Grass Valley representative for depot location.

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

## Functional Description

A block diagram of the 2030RDA is shown in [Figure 20](#).

Figure 20. 2030RDA Block Diagram



8031\_02

### Input and Output Processing

The input section receives SD (standard definition) video from the passive rear input module and sends it to signal equalizing and reclocking circuits. The input section can also bypass the signal through the Input Selector circuits to the output amplifiers. The output amplifiers drive nine equal-phase outputs on the passive rear module.

### Microprocessor and Input Selector

The primary purpose of the microprocessor is to provide remote control and monitoring capability for the 2030RDA. It receives signal present, signal lock, and speed detection signals from the equalizer and reclocker circuits. Using this information, local jumper settings, and remote control commands, the microprocessor selects the internal signal path and gives feedback through the LEDs and remote control bus.



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