

Kalypso

VIDEO PRODUCTION CENTER

Emergency Bypass Option Instruction Manual



071812104
JUNE 2004

the most watched worldwide

Contacting Grass Valley

Region	Voice	Fax	Address	Web Site
North America	(800) 547-8949 Support: 530-478-4148	Sales: (530) 478-3347 Support: (530) 478-3181	Grass Valley P.O. Box 599000 Nevada City, CA 95959-7900 USA	www.thomsongrassvalley.com
Pacific Operations	+852-2585-6688 Support: 852-2585-6579	+852-2802-2996		
U.K., Asia, Middle East	+44 1753 218 777	+44 1753 218 757		
France	+33 1 45 29 73 00			
Germany, Europe	+49 6150 104 782	+49 6150 104 223		

Copyright © Thomson Broadcast and Media Solutions All rights reserved.

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.

Contents

Emergency Bypass Option

- Introduction 5
- Features 6
- Options 6
- Emergency Bypass Components 6
 - Emergency Bypass Frame 7
 - Alarms 9
 - Emergency Bypass Relay Module 9
 - Emergency Bypass Keyer Module 9
 - Emergency Bypass Frame Monitor Module 9
 - Frame Restrictions 9
- Panel Controls 9
- Operation 10
- Installation 12
 - SMS 7000 Router Requirements 12
 - Encore Router Requirements 12
 - Install Emergency Bypass Frame 12
 - Panel Cabling and Redundant Power 13
 - 4-M/E Local Aux Panel 13
 - 2-M/E Panel 13
 - 2-M/E System Cable Replacement 13
 - Control Cabling 17
 - Video Cabling 18
 - Reference 19
- Configuration 19
 - SMS 7000 Router 19
 - Encore Router 20
 - Kalypso System 20
 - Relay Module Switch Setting 20
 - Specifying Shaped or Unshaped Sources 20
 - Mapping Router Sources 20
 - Test Emergency Bypass 22
- Maintenance 23
 - Bypass Frame Monitor Module 23
 - Indicator LEDs 23
 - Enabling Alarms and Fan Speed Control Option 24
 - Bypass Keyer Module 25
 - Indicator LEDs 25
 - Rotary and Actuator Switches 26
 - Jumper Setting 26
 - Bypass Relay Module 27
 - Indicator LEDs 27
 - Relay Module Switch 27
 - Breakout Cable 27
 - Field Replaceable Units 28

Index..... 29

Emergency Bypass Option

Introduction

Note The Emergency Bypass option operates with Kalypso Classic, Kalypso Duo, and Kalypso HD systems running in SD operating mode. This option does not operate with Kalypso HD systems running in HD operating mode.

The Emergency Bypass system provides basic switching capability should a component in the Kalypso system fail or lose power. The Emergency Bypass option uses an external router to perform the actual source selections. Operator control is provided by the Local Aux panel. If the Kalypso system Main panel and/or the Video Processor frame fails, the Local Aux subpanel, Emergency Bypass frame, and facility router can still provide basic switching and keying capability. Note that the Emergency Bypass option and the Kalypso system Router Interface are completely separate features that do not interact with one another.

During normal operation, the Video Processor frame sends emergency bypass configuration information to the Local Aux panel, where it is stored. The Local Aux bus uses this copy of the information for controlling the Emergency Bypass frame should the Video Processor frame fail.

Note On 4-M/E Kalypso systems, the Emergency Bypass option operates with Local Aux panel part number 610-0935-00. The previous version (614098300) is not compatible. On 2-M/E Kalypso systems, the Emergency Bypass option operates with Local Aux Processor Interface Board 671494502 and higher. If you do not have the correct revision of hardware, contact Grass Valley Group Customer Service for an upgrade.

Features

- Grass Valley SMS 7000 and Encore external router interface, using SMS 7000 native protocol.
- Support for other manufacturer's routers that can use SMS 7000 native protocol.
- 8900TF Emergency Bypass frame (2RU, 100 watt power, fan-cooled), with three Emergency Bypass modules.
- RS422 serial control between Kalypso system, Emergency Bypass frame, and external router.
- Local Aux panel bypass enable and source selection control.
- Two keys able to be mixed on and off independently.
- Router or direct keyer inputs.
- Protect two Kalypso system program feeds (providing the same signal output to both feeds when in bypass operation).
- Preview both keys over current background.
- Kalypso system configuration menus for setting up Emergency Bypass sources and destinations.

Options

- Redundant power supply module for the Emergency Bypass frame.
- Redundant external power supply bricks for the Local Aux panel. A 4-M/E Kalypso system Local Aux panel can use up to two power bricks. A 2-M/E Kalypso system can use one power brick.

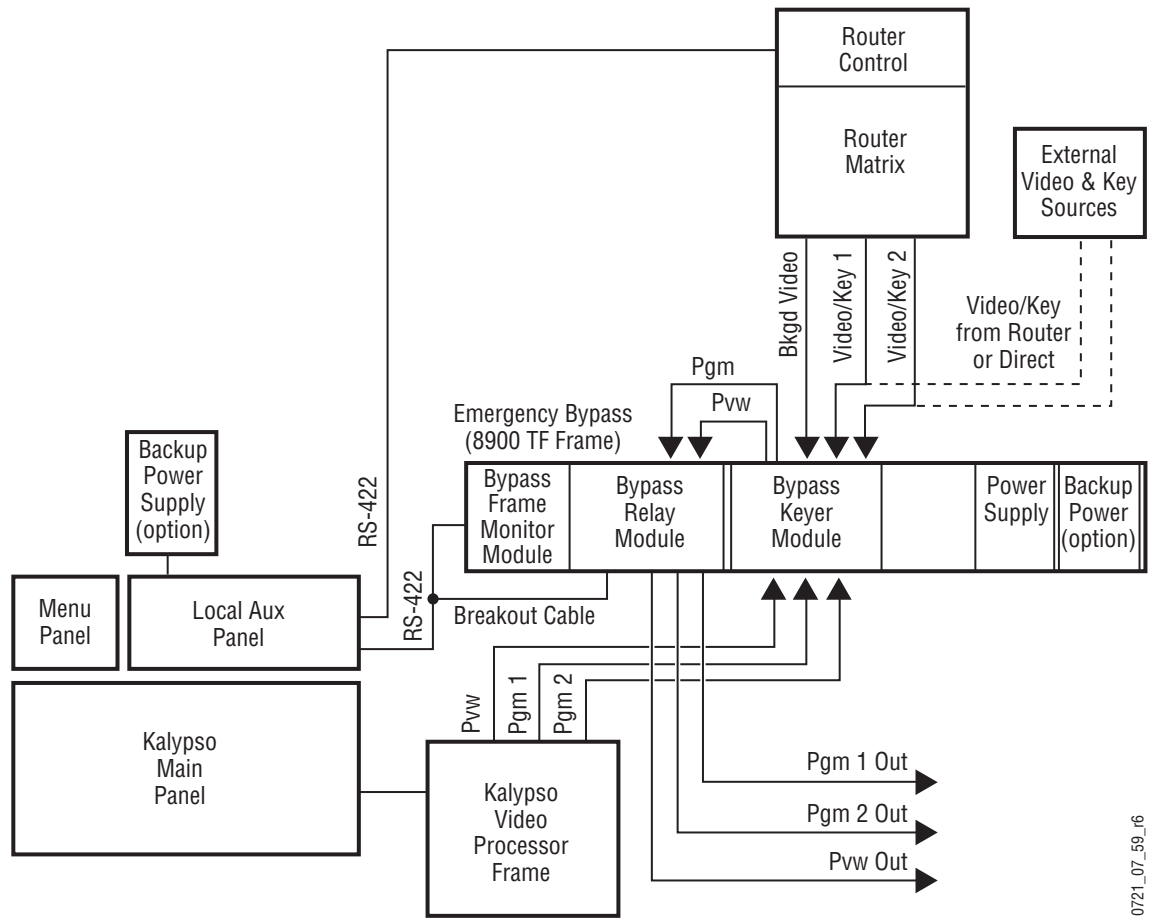
Emergency Bypass Components

The Kalypso Emergency Bypass option ships with the following components:

- 8900TF Emergency Bypass frame with power supply,
- Bypass Relay module,
- Bypass Keyer module,
- Bypass Frame Monitor module,
- RS-422 Relay breakout cable, and
- RS-422 Machine Control cable.

An example of an installed Kalypso Emergency Bypass system is shown in Figure 1.

Figure 1. Emergency Bypass System

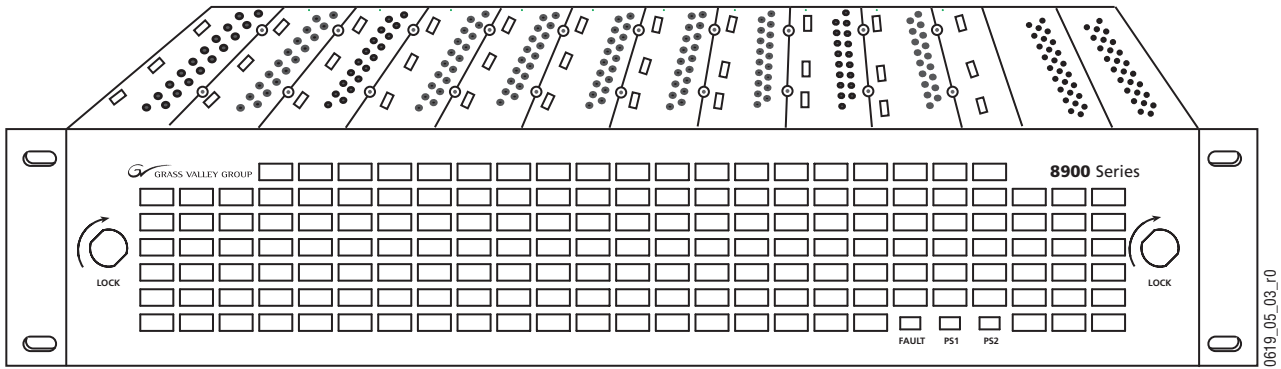


0721_07_59_16

Emergency Bypass Frame

The 2 RU Emergency Bypass frame (Figure 2) fits a standard 19 in. (483 mm) equipment rack, and requires a 14 in. (356 mm) mounting depth. Behind the front cover are ten slots for modules, plus one control slot and two slots for power supplies.

Figure 2. 8900TF Frame, Front View

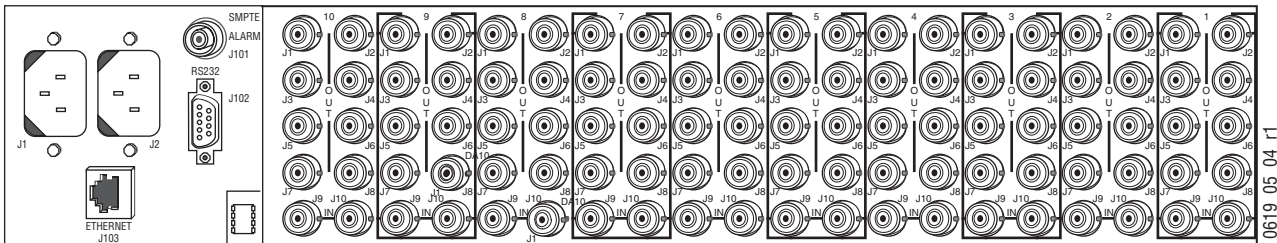


CAUTION The Emergency Bypass frame front panel must remain in place during system operation to provide proper cooling. If the panel is removed for an extended period, modules can overheat and fail to operate correctly.

The forced-air system has a front cover that is equipped with three fans for air circulation. The fan speed varies with the ambient frame temperature to extend fan life and reduce noise when the frame is used in cooler configurations and environments. The fan speed control voltage is generated on the Bypass Frame Monitor module and can be disabled so that the fan runs at maximum speed only (see page 24).

The right rear of the frame (Figure 3) includes ten groups of ten connectors (corresponding to the ten frame slots), which are used for input/output functions for inserted modules. The standard Kalypso Emergency Bypass option only uses two of these groups, typically slot 7 for the Relay Module and slot 8 for the Keyer module.

Figure 3. 8900TF Frame, Rear View



The power /communication section at the left rear of the frame provides:

- RS-422 communications (the connector is labeled RS-232, but is RS-422 when the Bypass Frame Monitor module is installed),
- AC power plug connections, and
- SMPTE Alarm BNC (J101) for fault reporting (see below).

The Ethernet connector is not used with the Kalypso Emergency Bypass option.

Alarms

The J101 SMPTE Alarm connector retains the original 8900 system functionality when the Emergency Bypass version of the Frame Monitor module is installed. Normal 8900 system faults (P/S failure, fan failure, etc.) will trigger the alarm. Also the Bypass Keyer module triggers the alarm upon some startup failures. The Bypass Relay module has no alarms. See [page 24](#) for more information.

Emergency Bypass Relay Module

The Bypass Relay module switches incoming video from normal to bypass operation. The toggle switch must be in the center **Remote** position to allow remote activation of bypass operation. See [page 27](#) for more information.

Emergency Bypass Keyer Module

The Bypass Keyer module keys up to two signals over incoming video, and provides Program and Preview outputs. The keying can be set for shaped or unshaped video ([page 20](#)). Also see [page 25](#) for more information.

Emergency Bypass Frame Monitor Module

The Bypass Frame Monitor module provides system control, communications, and alarm reporting. See [page 23](#) for more information.

Note The Kalypso Emergency Bypass Frame Monitor module is not a standard 8900 Frame Monitor module. It is specifically designed for use with the Kalypso Emergency Bypass system and RS-422 communications with the Local Aux panel.

Frame Restrictions

- The Emergency Bypass frame hardware is designed to integrate closely with the Kalypso system and is intended only for that purpose. Only Emergency Bypass modules should be installed in the frame.

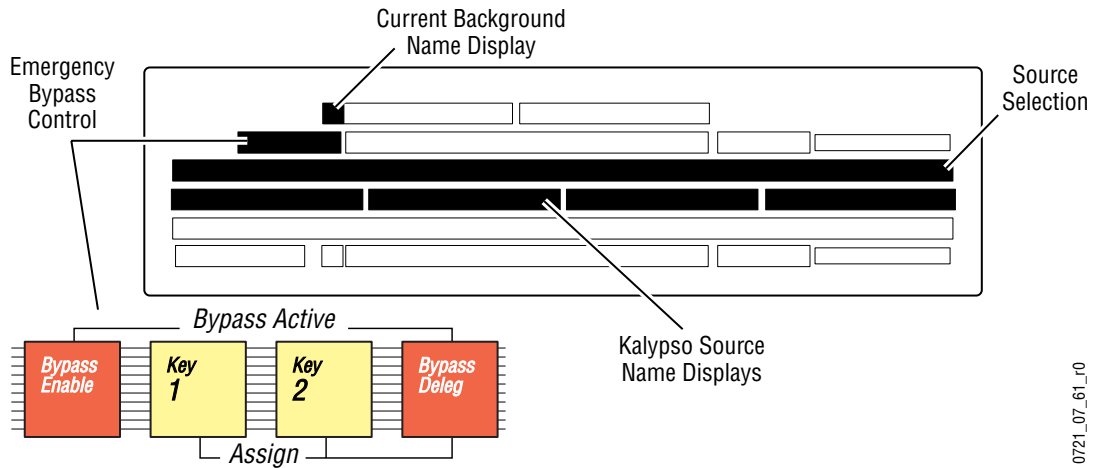
CAUTION Do not install any other types of 8900 series modules in the Emergency Bypass frame.

- Browser based GUI control and monitoring normally associated with the 8900 series is not available on the Emergency Bypass frame.

Panel Controls

The Kalypso Local Aux panel (or Local Aux subpanel on a 2-M/E system) is used for Emergency Bypass operation ([Figure 4](#)).

Figure 4. Local Aux Panel Emergency Bypass Controls



The **Bypass Enable** button, when pressed with **Bypass Deleg** held down, enables and disables emergency bypass mode. The **Bypass Enable** button illuminates when in bypass mode.

Note If a BYPASS KEYER NOT ENABLED message appears you need to turn on the option in the Eng Setup - Emg Bypass menu (**Enable** touch button). Enabling the Emergency Bypass option in this menu is different from enabling the operating mode itself on the Local Aux panel.

The **Bypass Deleg** button, besides being used to enable bypass mode above, is used to delegate the Source Selection buttons to control the Background, Keyer 1, or Keyer 2 buses for source selection (see below).

Pressing the **Key 1** or **Key 2** button mixes that key on or off on the bypass program output. When **Bypass Deleg** is held down, pressing and releasing the **Key 1** or **Key 2** button delegates the Source Selection buttons to that keyer bus.

The Source Selection buttons are used (when the **Bypas Deleg** button is on) to select the Background, Key 1, or Key2 sources, depending on the current bus delegation (see above). The names of the currently available sources are displayed on the middle source name display. The name of the currently selected background source is also displayed above the **Bypass Deleg** button.

Operation

The Emergency Bypass system operates with Kalypso Release 6.0 and higher software.

Note Emergency Bypass operation becomes available after the Kalypso system, Emergency Bypass frame, and the external Router have been properly installed (see [page 12](#)) and configured (see [page 19](#)).

Emergency Bypass operation consists of selecting the desired background and key sources, enabling and disabling bypass mode, and mixing the key sources on and off air.

Note Release 6.X software supports background and key source selection only when Bypass Operating Mode is enabled on the Local Aux panel. Release 7.0 and later software supports source selection when the Local Aux panel is not actually in Bypass Operating Mode, permitting pre-selection of sources before activating the mode.

To Select Background Bypass Sources:

Press the button of the desired source on the top source selection bus of the Local Aux panel. The **Unshift** and **Shift** modifier buttons for that bus can be used to select additional sources if they have been mapped that way.

To Select Key Sources:

Note Only key sources from the router can be selected. Direct key sources are fixed and cannot be changed.

1. Hold down the **Bypass Deleg** button, then press and release the **Key 1** or **Key 2** button, but continue to hold down **Bypass Deleg**. Press the button of the source you wish to use with the key you selected. The **Unshift** and **Shift** modifier buttons for that bus can be used to select additional sources. If that key is being output, there will be a cut to the new key source.
2. Release the **Bypass Deleg** button. This restores the bus to background selection.

To Enable Bypass Operating Mode:

1. Press and hold down the **Bypass Deleg** button on the Local Aux panel,
2. Press the **Bypass Enable** button, then release both buttons.

The currently selected bypass background source will be taken on-air. Any keys that are turned on will also be included in the bypass output.

To return to normal operation, press and hold down **Bypass Deleg**, then press **Bypass Enable** and release both buttons to toggle bypass mode off.

To Mix a Key On and Off:

1. Press the **Key 1** or **Key 2** button (do not hold down the **Bypass Deleg** button). That key will mix to the other state (On if Off, or Off if On).

2. The transition rate for each key is determined during configuration. A transition rate of zero causes a cut.

Installation

Note Each Grass Valley router control system can control a wide variety of matrices. The type of matrix controlled does not affect operation of the Kalypso Emergency Bypass option.

SMS 7000 Router Requirements

- A CIF (communication interface) Module Option must be installed with its Serial Mezzanine in position 1 of the option module to allow the SMS 7000 to communicate using native protocol over a serial line.

Encore Router Requirements

- An SIO ISA Mezzanine must be installed for serial communications.

Install Emergency Bypass Frame

The Emergency Bypass frame ships either with the modules pre-installed, or with the modules packaged separately.

1. Install the Emergency Bypass frame in any suitable rack.
2. If the modules were packaged separately, remove the front cover and insert the modules into the frame. For cooling efficiency, the modules should be placed in the following slots:
 - a. Insert the Bypass Relay module in slot 7.
 - b. Insert the Bypass Keyer module in slot 8.
 - c. Insert the Bypass Frame Monitor module into the smaller control slot 11.
3. Connect the Emergency Bypass frame power cords, using different line sources if redundant power supplies are being used.

Panel Cabling and Redundant Power

4-M/E Local Aux Panel

The Local Aux panel is typically powered through a cable connected to the Main panel. If the Main panel has two power supplies, redundant power protection for the Local Aux panel already exists. For additional redundancy, an external power supply brick can be connected to the Redundant DC Power In connector on the Local Aux panel. If desired, two separate power supply bricks can be connected to the Main and Redundant DC Power In connectors on the Local Aux panel.

2-M/E Panel

Local Aux control is integrated into the 2-M/E Main panel, but it has a separate processor. It is powered by a direct connection inside the panel. If the 2-M/E Main panel has two power supplies, redundant power protection for the Local Aux panel already exists. You can optionally add an external power supply that connects to the Aux Panel Redundant DC Power In connector on the Main panel.

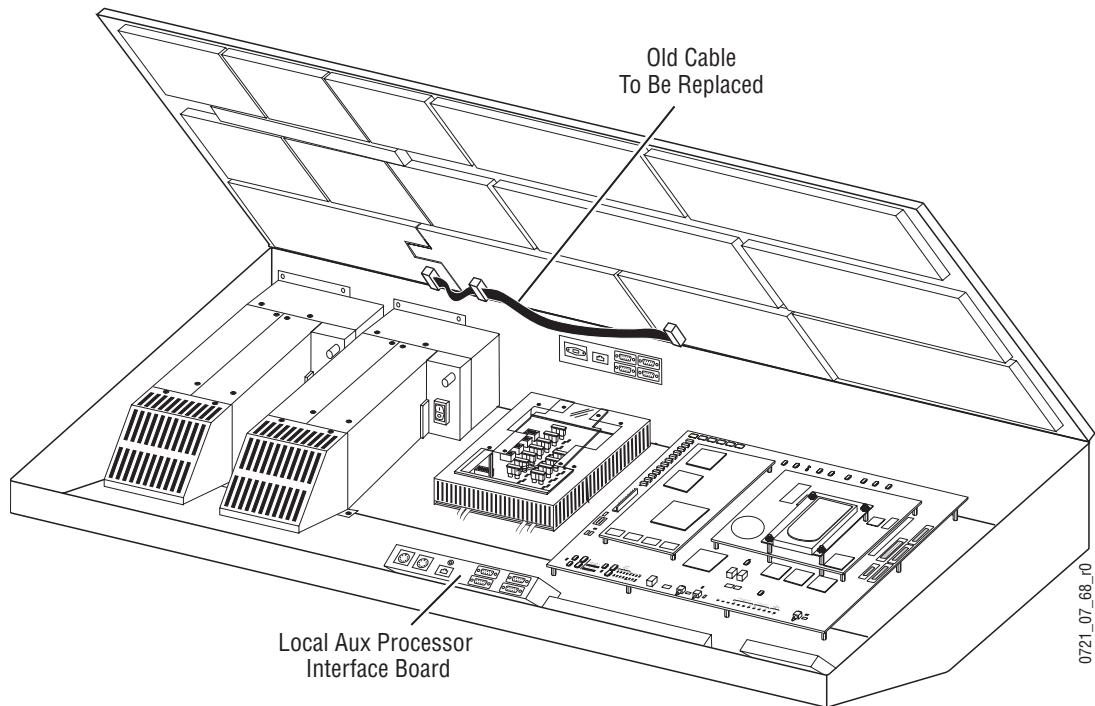
2-M/E System Cable Replacement

On older 2-M/E Kalypso systems a ribbon cable must be replaced with a new cable supplied with the Emergency Bypass option. This cable routes power from the Local Aux panel Backup Power option to the Remote Aux subpanel. Newer 2-M/E systems are shipped with the correct cable already installed. This ribbon cable is not used on 4-M/E systems.

Ribbon Cable Identification

1. Open the 2-M/E Main panel lid.
 - If a ribbon cable connects three boards in the upper lid near the hinge (Figure 5), it must be replaced to enable optional backup power with the Emergency Bypass option. Go to *Local Aux Processor Interface Board Version* on page 14.
 - If the ribbon cable connects two boards on the lid to the Local Aux Processor Interface board, a new cable is already installed and does not need to be replaced. Close the lid and go to *Control Cabling* on page 17.

Figure 5. 2-M/E System Old Ribbon Cable



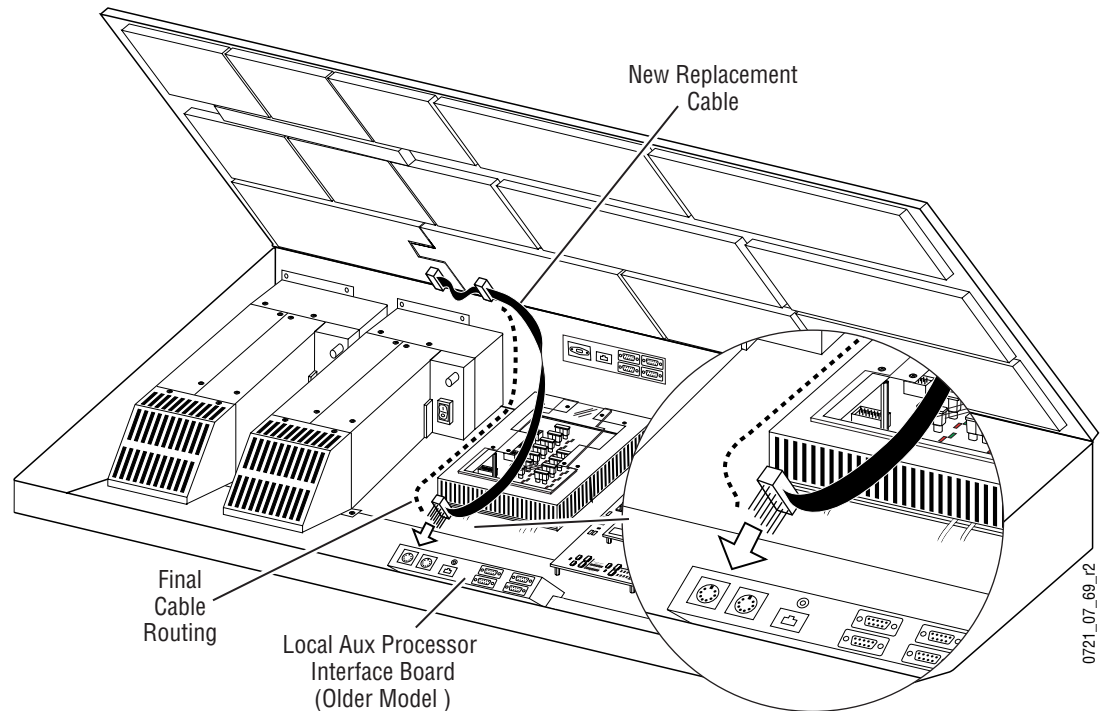
Local Aux Processor Interface Board Version

2. Determine which type of Local Aux Processor board (Figure 5) is installed in your system. Cable installation is different depending on board type. The part number of the board is visible behind the fan assembly.
 - If the part number is lower than 671-4945-02, the board will not work with the Emergency Bypass option. Do not remove or replace the cable. Contact Grass Valley Customer Service for an upgrade.
 - If 671-4945-02, go to [Older Board Cable Replacement \(671-4945-02\)](#) on page 14.
 - If 671-4945-03, go to [Newer Board Cable Replacement \(671-4945-03\)](#) on page 15.

Older Board Cable Replacement (671-4945-02)

1. Power off the 2-M/E Main panel.
2. Remove the old ribbon cable from the lid (Figure 5).
3. Attach the two closely spaced connectors on the new cable to the same two boards in the lid (Figure 6). The red marked edge of the ribbon cable must face down toward the hinge of the lid, to match the pin 1 and 2 side of the connector. These connectors are keyed for this orientation.

Figure 6. Older Board (671-4945-02) Cable Installation



4. An interconnecting dual 10-pin header assembly with short and long pins is provided with the kit. If not already installed, insert the side of the assembly with the short pins into the remaining open ribbon cable connector, making sure all connector sockets are filled.

CAUTION Use care when connecting the ribbon cable to the Local Aux Processor Interface board. The connector is not keyed, and equipment damage can occur if the connector is installed misaligned with the pins.

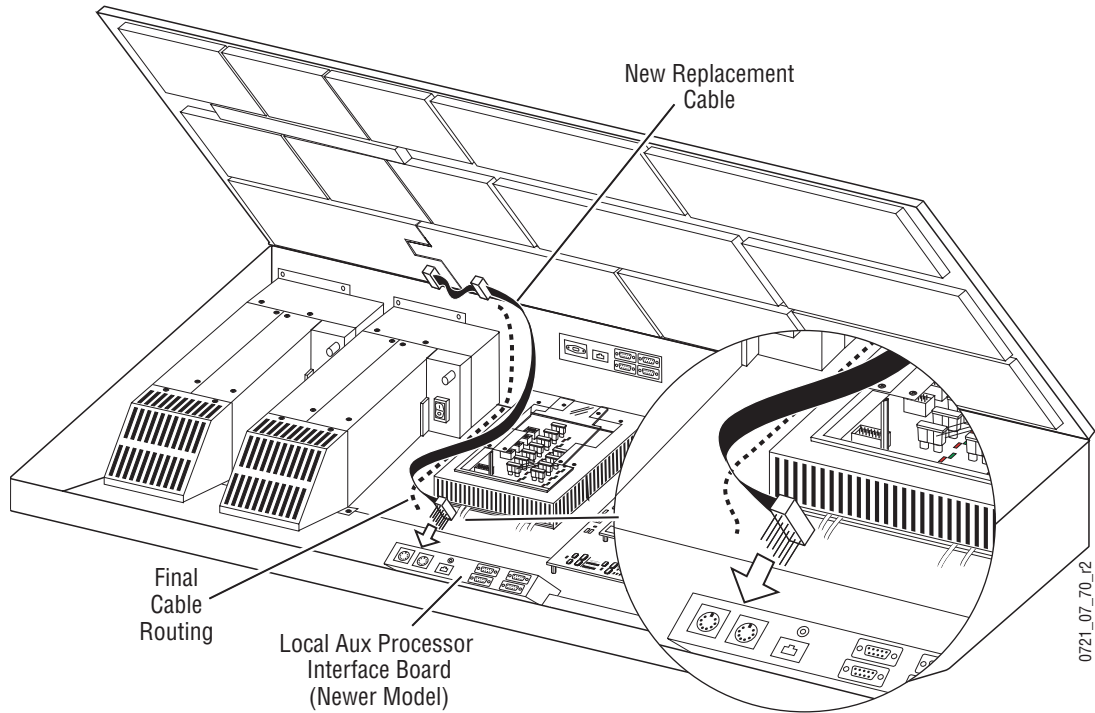
5. The remaining connector with the header assembly pins protruding attaches to the J3 connector on the lower left corner of the 671-4945-02 Local Aux Processor Interface board. Orient the cable with the ribbon emerging from the right side of the connector. The red marked edge of the ribbon cable must face down toward the bottom of the tub, matching the pin 1 and 2 side of the connector on the board.
6. Route the cable alongside the power supply (Figure 6), using the supplied adhesive cable restraints.
7. Close the lid and power up the Main panel.

Newer Board Cable Replacement (671-4945-03)

1. Power off the 2-M/E Main panel.
2. Remove the old ribbon cable from the lid (Figure 5).

3. Attach the two closely spaced connectors on the new cable to the same two boards in the lid (Figure 7). The red marked edge of the ribbon cable must face down toward the hinge of the lid, to match the pin 1 and 2 side of the connector. These connectors are keyed for this orientation.

Figure 7. Newer Board (671-4945-03) Cable Installation



4. An interconnecting assembly with short and long pins is provided with the kit. If not already installed, insert the side of the assembly with the short pins into the remaining open ribbon cable connector, making sure all connector sockets are filled.

CAUTION Use care when connecting the ribbon cable to the Local Aux Processor Interface board. The connector is not keyed, and equipment damage can occur if the connector is installed misaligned with the pins.

5. The remaining connector with the long pins protruding attaches to the J2 connector on the lower left corner of the 671-4945-03 Local Aux Processor Interface board. Orient the cable with the ribbon emerging from the left side of the connector. The red marked edge of the ribbon cable must face up toward the opening of the tub, matching the pin 1 and 2 side of the connector on the board.
6. Route the cable alongside the power supply (Figure 7), using the supplied adhesive cable restraints.
7. Close the lid and power up the Main panel.

Control Cabling

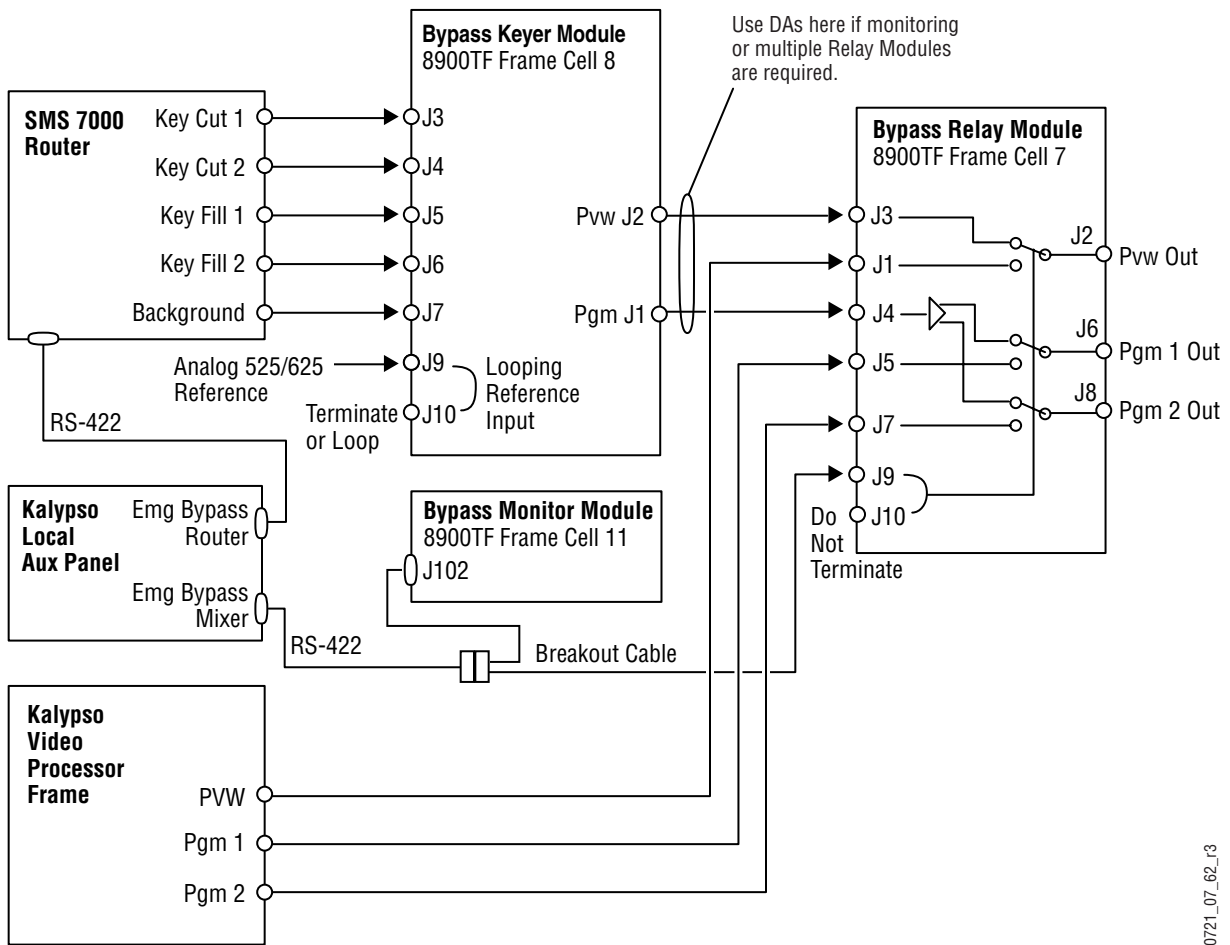
Note Some early production models of the Kalypso Local Aux panel and 2-M/E Main panel reversed the legends for the Emergency Bypass ports. Later models had corrective labels applied at the factory. Current models are silk-screened correctly. If after installation Emergency Bypass does not work on an older system, try reversing these cables. Labels are provided (EBS MIXER, EBS ROUTER) that can be cut out and affixed over incorrect legends. Ensure proper system operation before relabeling the connectors.

Refer to [Figure 8](#).

- Connect an RS422 cable from the Emergency Bypass Mixer port on the Local Aux panel or 2-M/E Main panel to the provided breakout serial cable.
- Connect the multi-pin breakout connector to the serial port (J102) on the rear of the Emergency Bypass frame, then connect the BNC breakout connector to the J9 or J10 port of the slot where the Bypass Relay is placed (typically slot 7). Do not terminate the open J9 or J10 port. It can be used to control additional Bypass Relay modules. The BNC on the breakout cable is used for contact closure only, and does not carry any signal.
- Connect an RS422 cable from the Emergency Bypass Router port on the Local Aux panel or 2-M/E Main panel to the serial port for the CIF Module Option (ASYNC 1B) on the SMS 7000 MCPU/Controller Frame.

Note The ground connection on the SMS 7000 serial connector is different. Please refer to the *SMS 7000 Installation Manual* for cable details.

Figure 8. Emergency Bypass Cabling



0721_07_62_13

Video Cabling

Note Label templates are provided (BYPASS KEYER and BYPASS RELAY) that can be placed over the BNC connectors on the rear of the Emergency Bypass frame. These templates identify the signals for each module.

Refer to [Figure 8](#).

- Connect the Router destinations for Key Cut, Key Fill, and Background signals to the Bypass Keyer Module, using the J connector numbers shown in the figure. Alternatively, the Key Cut and Fill signals can come from an external device, but then these signals cannot be switched from the Kalypso Local Aux panel.
- Connect the Program 1 Output from the Kalypso Video Processor frame to the Relay Module, as shown. You can also connect another Program output and a Preview output if you wish.
- Connect the J1 output (Program) from the Keyer Module to the J4 input of the Relay Module, and the J2 output (Preview) to the J3 input.

- Connect the J6 Program 1 (and J8 Program 2 if used) outputs of the Relay Module to your downstream targets (monitor, transmitter). The bypass program output signals are identical.
- Connect the J2 Pvw Out of the Relay Module to a Kalypso system preview monitor (typically switched preview or PGM PST PVW A). When Emergency Bypass is not active, this output shows the normal preview signal. When Emergency Bypass is active, the preview for the Emergency Bypass keyer is shown, consisting of the current background with both keys on.

Reference

Connect a black burst video reference to J9 or J10 on the Keyer module, either terminated or looped through (Figure 8).

Configuration

SMS 7000 Router

If the SMS 7000 router is not already configured, you will need to define the node controller, physical matrix, virtual matrix, levels, sources, and destinations (see the *SMS 7000 Configuration Manual*).

Confirm that a CIF Module Option is installed, with its Serial Mezzanine in module position 1. To configure this option for communication with the Kalypso Local Aux panel:

1. Open your existing Router configuration using the SMS 7000 GUI.
2. Go to **Setup/Cfgd Np Internet**, and edit **NPI1**, identifying the levels you wish the Kalypso system to be able to control.
3. Go to the Serial Amezi menu, and select the **Native (& m2100)** protocol, and set it to RS422.
4. Set the following serial settings:
 - 422 driver, 9600 baud, 8 data bits, no parity, 1 stop bit.
5. In the Co-processors menu, create a new co-processor for this serial Amezi.
6. If necessary, go to **Configuration/Destination** and add any new destinations that will be used for the Emergency Bypass system. You will need to specify the proper levels if a destination is a video /key pair and note the names and connector numbers.

7. Send this configuration to the SMS 7000 system. The router is now configured for serial communication.

Encore Router

Encore router configuration procedures are similar to those used for the SMS 7000 system. An Encore router communicates to the Kalypso system via an RCL client. RCL is a superset of the SMS 7000 native protocol. The Encore serial COM 2 port is configured for RCL at the factory.

Refer to the Encore system documentation for detailed instructions. Specifically, see the *Encore Installation and Service Manual* for information about installing the SIO mezzanine, and see the *Encore User Manual* for configuration instructions.

The Kalypso system must have access to the Encore router serial digital video and key levels feeding the Emergency Bypass system.

Kalypso System

Relay Module Switch Setting

The Emergency Bypass Relay Module switch must be set to the center **Remote** position before the Kalypso system will be able to control it.

Switch position up forces bypass operation, and switch position down forces normal operation.

Specifying Shaped or Unshaped Sources

The Keyer module can be set to accept shaped or unshaped video for keying. The same selection is applied to all sources. Settings are retained when power to the frame is cycled.

1. Set the dial switch on the Keyer Module (slot 8) to the desired mode:
 - Select 1 for shaped video.
 - Select 2 for unshaped video.
2. Press the toggle switch to enact the change.

Mapping Router Sources

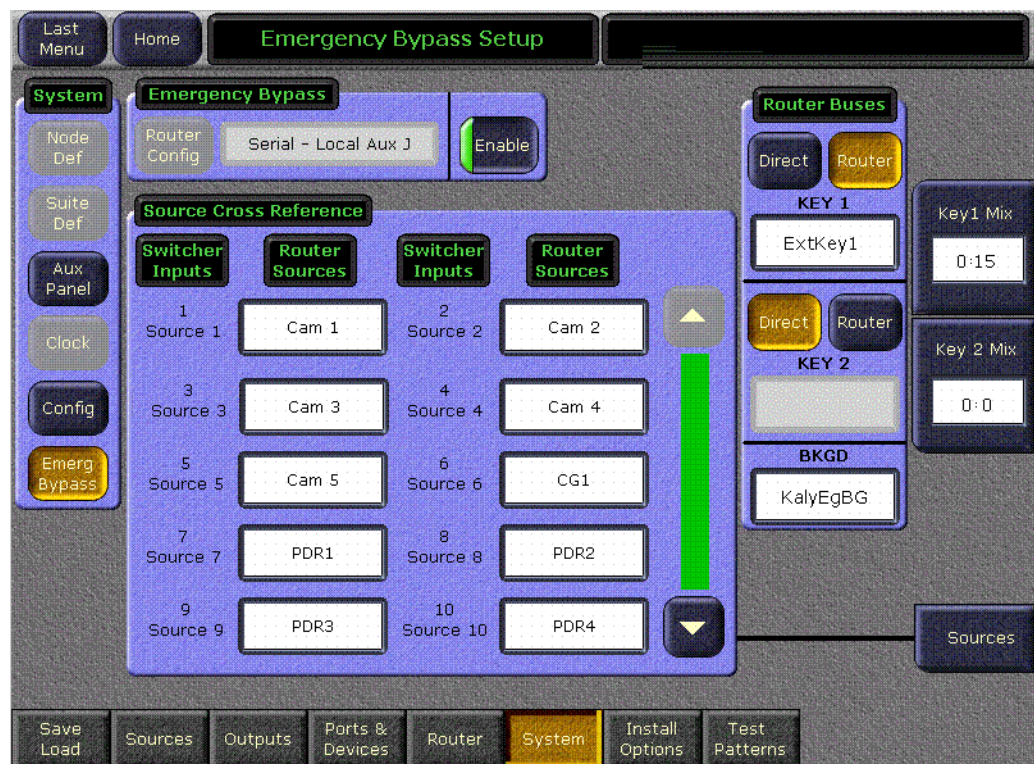
You need to know the exact names of the router sources and destinations that will be used by the Emergency Bypass system. Router names are case sensitive, with a maximum of eight characters.

The router sources you use with the Emergency Bypass system must be the same sources used by the Kalypso system. Any sources connected to the Kalypso system that are not connected to the router will not be available when emergency bypass is activated.

Emergency bypass configuration menus are available with Kalypso Release 6.0 and higher software.

1. Press the **Eng Setup** button on the Menu panel, touch the **System** category selection button, then touch the **Emerg Bypass** button to go the Emerg Bypass menu (Figure 9).

Figure 9. Emerg Bypass Menu



2. In the Source Cross Reference pane, touch the data pad for a switcher input (the Source ID and source name is displayed), and enter the exact name of the router source you wish to use for this switcher source during Emergency Override operations. Typically this will be the same signal, coming from the router instead of feeding the Kalypso system. Repeat for all the sources you intend to use. The **Sources** soft knob can be used to scroll the list.
3. In the Router Buses pane, touch the **BKGD** data pad and enter the exact name of the router destination to be used for the Emergency Bypass background signal. This destination is the one connected to the Keyer Module in the Emergency Bypass frame.

4. Setup the keyer signals that are connected to the Keyer Module in the Emergency Bypass frame.
 - If you are using a key from the router, touch the **Router** button for the keyer and enter the exact name of router destination to be used for that keyer.
 - If you are using a direct input for a key, touch the **Direct** button.
5. Enter the mix rate for each key, by touching the **Key Mix** data pad and entering a value, or using the soft knob. The key mix rate is displayed in seconds : frames format. The knob can be rotated to increment and decrement the mix rate in frames. The mix rate can also be entered from the keypad in seconds : frames format or just as frames. A value of 0 frames causes a cut transition.
6. Touch the **Enable** button to enable the option. This initiates communication between the Local Aux panel, Emergency Bypass frame, and external Router, and activates the bypass buttons on the Local Aux panel.

If the Emergency Bypass option is not present, but it is enabled in this menu, pressing the bypass buttons on the Local Aux panel will display a warning message indicating the system is not responding. If the Emergency Bypass option is not present, it should be shut down in this menu to deactivate the Local Aux panel bypass buttons and prevent display of the warning message.

Test Emergency Bypass

You can now test Emergency Bypass operation (this should be done when not actually on-air, of course). See [page 10](#) for operating instructions.

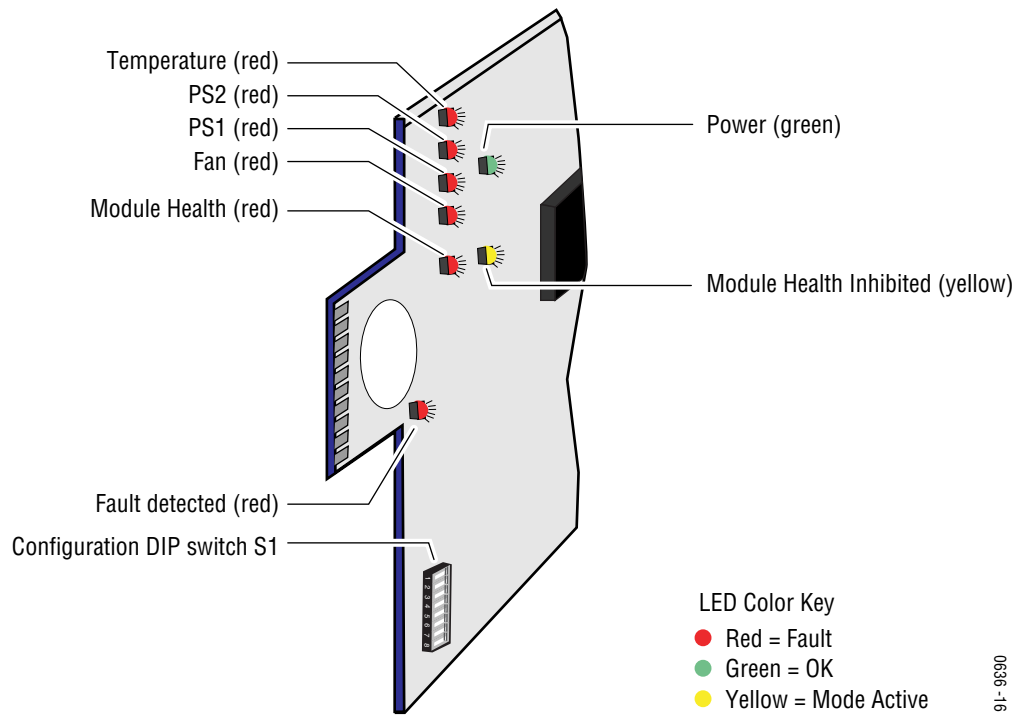
Maintenance

Bypass Frame Monitor Module

Indicator LEDs

The Bypass Frame Monitor Module provides indicator LEDs on the front of the module (visible when fan front cover is removed) that report alarm conditions and module power status. The front edge of the Bypass Frame Monitor Module is shown in [Figure 10](#).

Figure 10. Bypass Frame Monitor Module Front View



The possible LED status and conditions indicated are shown in [Table 1](#).

Table 1. Indicator LEDs and Conditions Indicated

LED	LED State	Condition
Power (green)	Off	Power is off or onboard regulator has failed
	On continuously	Module is powered
PS2 (red)	Off	Normal operation or alarm disabled
	On continuously	Power supply 2 is present and reporting an alarm condition
PS1 (red)	Off	Normal operation or alarm disabled
	On continuously	Power supply 1 is present and reporting an alarm condition

Table 1. Indicator LEDs and Conditions Indicated - (continued)

LED	LED State	Condition
FAN (red)	Off	Normal operation or alarm disabled
	On continuously	One or more fans in the front cover assembly is not rotating
MOD (red)	Off	Normal operation or alarm disabled
	On continuously	Module health bus is not disabled and one or more modules is reporting an internal fault
	Flashing	One or more modules is reporting a data error
INHIB (yellow)	Off	Normal operation or alarm disabled
	On continuously	A non-compliant module in the frame has disabled the module health bus
FAULT (red)	Off	Normal operation
	On continuously	One or more of the onboard fault LEDs is illuminated or flashing

Enabling Alarms and Fan Speed Control Option

The Bypass Frame Monitor Module has an eight position DIP switch (S1) that enables or disables the alarm functions and the variable fan speed function, same as a standard 8900 Frame Monitor module. In addition, an RS-422 setting used only by the Bypass module is available, but must be set to the normal position.

Refer to [Figure 10](#) for the location of S1 and [Table 2](#) for the possible settings.

Table 2. Configuration DIP Switch Settings

Segment	Left Position (open)	Right Position (closed)
1	PS1 Fault Reporting Enabled	PS1 Fault Reporting Disabled
2	PS2 Fault Reporting Enabled	PS2 Fault Reporting Disabled
3	Overtemp Fault Reporting Enabled	Overtemp Fault Reporting Disabled
4	Fan Fault Reporting Enabled	Fan Fault Reporting Disabled
5	Module Fault Reporting Enabled	Module Fault Reporting Disabled
6	Fan Speed Controlled by Temperature	Fan Speed Fixed at Maximum
7	Not Used	
8	RS-422 Normal	RS-422 Reversed ^a

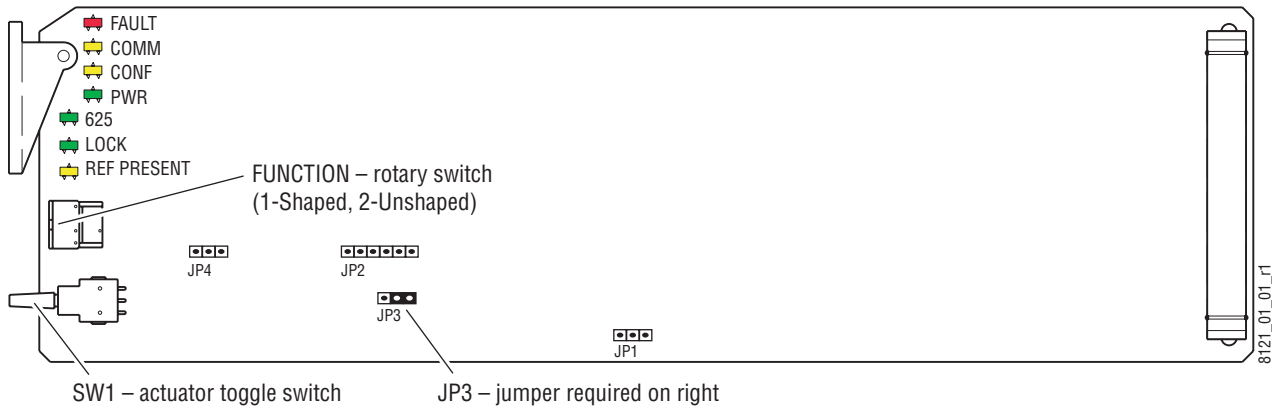
^a Emergency Bypass does not operate with a reversed setting.

Bypass Keyer Module

Indicator LEDs

The Bypass Keyer module has LED indicators above the rotary switch (Figure 11).

Figure 11. Bypass Keyer Module



The possible LED status and conditions indicated are shown in Table 1.

Table 1. Indicator LEDs and Conditions Indicated

LED	LED State	Condition
FAULT (red)	Off	Normal operation
	On continuously	Module FPGA is not configured or fails to configure
COMM (yellow)	Off	-
	Flickers	Communications activity under way
CONF (yellow)	Off	-
	On continuously	Module is being configured
PWR (green)	Off	Power is off or onboard regulator has failed
	On continuously	Module is powered
625 (green)	Off	-
	On continuously	625 line reference is detected
LOCK (red)	Off	-
	On continuously	Module has acquired lock on reference input
REF PRESENT (red)	Off	Reference signal not detected
	On continuously	Reference signal detected

Rotary and Actuator Switches

The rotary switch sets a module operating mode, which is enacted by moving the toggle switch either up or down. Rotary position 1 selects shaped video for keying, position 2 selects unshaped video. The remaining settings are for factory test and should not be used in the field.

Jumper Setting

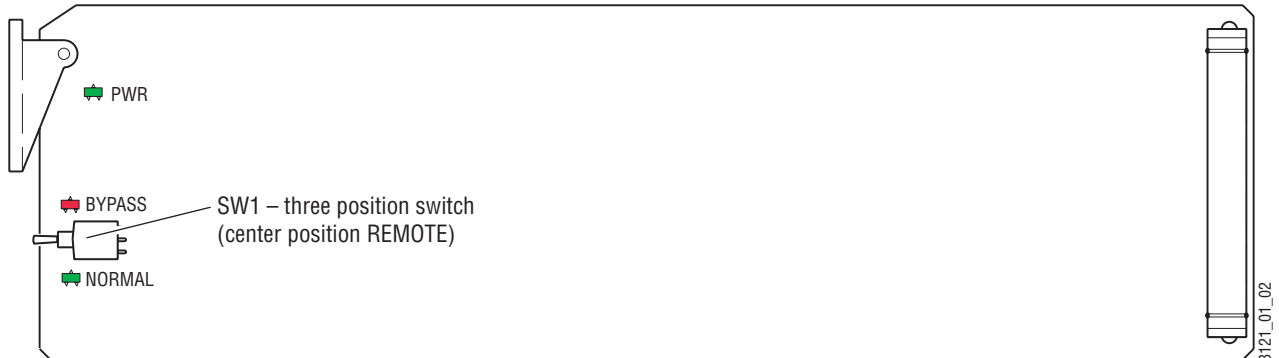
The JP3 jumper needs to be bridged on the right (LOCAL) position (Figure 11) for normal operation. All other jumpers are used for factory test and should remain empty.

Bypass Relay Module

Indicator LEDs

The Emergency Bypass Relay module (Figure 12) has a single Power LED, and two operating mode LEDs above and below the mode switch. The top red LED indicates the module is in bypass operation. The lower green LED indicates normal (non-bypass) operation.

Figure 12. Bypass Relay Module



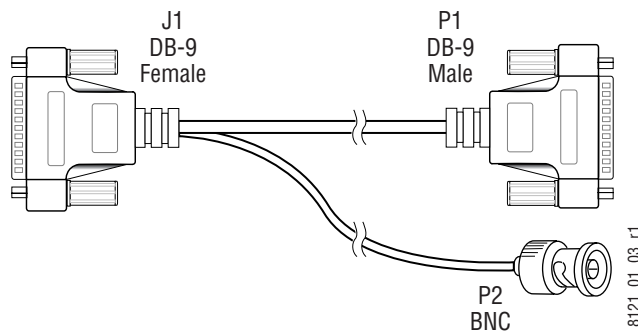
Relay Module Switch

The three position switch (SW 1) can be used to change module operating modes. The up position forces bypass operation, and the bottom position forces normal (non-bypass) operation. The center **Remote** position permits remote mode switching from the Local Aux panel.

Breakout Cable

The breakout Y cable (Figure 13) used between the Local Aux panel and Emergency Bypass frame includes a BNC connector, which is used for contact closure.

Figure 13. Breakout Cable and Pin Connections



From	To	Note
J1-1	P1-5	Use cable drain wire
J1-2	P1-2	Twisted pair
J1-7	P1-7	
J1-4	P2-Center	BNC connector
J1-6	P2-Shield	
J1-3	P1-3	Twisted pair
J1-8	P1-8	

Field Replaceable Units

Figure 14. FRU List and Replacement Notes and References

Name	Part Number	Replacement Notes and References
Emergency Override Option		
Bypass Frame Monitor module	671-4802-10	
Bypass Relay module	671-5198-00	
Bypass Keyer module	671-5175-00	
Wire Harness, Bypass Control Y Cable	179-3027-00	
Machine Control Cable (RS-422)	054602-16	
Ribbon Cable Assembly, (2-ME upgrade)	174-8067-01	For older 2-M/E systems only.
Frame 8900TX/TF/TFN	630-0063-00	
Front Panel with Fan	644-0944-01	
Power Supply Module (for Frame)	119-6055-51	

Index

Numerics

- 2-M/E System
 - Local Aux Processor I/F board versions [14](#)
- 2-M/E System cable replacement [13](#)

A

- alarms [9](#)
 - enabling [24](#)

B

- Background bypass source
 - selecting [11](#)
- breakout cable [27](#)
 - pinouts [27](#)
- button
 - Bypass Deleg [10](#)
 - Bypass enable [10](#)
 - Key 1, 2 [10](#)
- Bypass Deleg button [10](#)
- Bypass Enable button [10](#)
- Bypass Frame Monitor module [9](#)
 - LED status [23](#)
- Bypass Keyer module [9](#)
 - jumper setting [26](#)
 - LED status [25](#)
 - switch [26](#)
- bypass operating mode
 - enable [11](#)
- Bypass Relay module [9](#)
 - LED location [27](#)
 - switch [27](#)
 - switch setting [20](#)

C

- cable
 - breakout [27](#)
 - breakout pinouts [27](#)
- cable replacement

- new board [15](#)
- old board [14](#)
- cabling
 - control [17](#)
 - reference [19](#)
 - video [18](#)
- cell
 - module placement [12](#)
- components [6](#)
- configuration
 - Encore router [20](#)
 - Kalypso System [20](#)
 - SMS 7000 router [19](#)
- control cabling [17](#)
- controls [9](#)
- cooling [8](#)

D

- disables [24](#)
- documentation online [2](#)

E

- Emergency Bypass frame
 - installing [12](#)
- Emergency Bypass option
 - general description [5](#)
- enable bypass operating mode [11](#)
- enables [24](#)
- Encore router
 - configuration [20](#)
 - interface requirements [12](#)
- Ethernet connector [8](#)
- external power supply brick [13](#)

F

- fan [8](#)
- fan speed control [24](#)
- FAQ database [2](#)

- features 6
- field replaceable units (FRU) 28
- frame 7
 - front cover 8
 - module cells 12
 - restrictions 9
- Frame Monitor module
 - see Bypass Frame Monitor module
- frequently asked questions 2
- front cover
 - frame 8

G

- Grass Valley web site 2

I

- installation
 - 2-M/E System cable replacement 13
 - Emergency Bypass frame 12
 - Encore router requirements 12
 - SMS 7000 router requirements 12

J

- jumper
 - Bypass Keyer Module setting 26

K

- Kalypso System configuration 20
- key
 - mixing on and off 11
- Key 1,2 button 10
- key source
 - selecting 11
- Keyer module
 - see Bypass Keyer module

L

- LED location
 - Bypass Frame Monitor module 23
 - Bypass Keyer module 25
 - Bypass Relay Module 27
- LED status

- Bypass Frame Monitor module 23
- Bypass Keyer Monitor module 25
- Local Aux Processor I/F board versions
 - 2-M/E System 14

M

- mapping router sources 20
- mixing a key on and off 11
- modules
 - cell placement 12
 - packaged separately 12
 - pre-installed 12
- Monitor module
 - see Bypass Frame Monitor module

O

- online documentation 2
- operation 11
- options 6

P

- pinouts
 - breakout cable 27
- power supply brick 13

R

- redundant power 13
- reference cabling 19
- Relay module
 - see Bypass Relay module
- RS-422 communications 8

S

- selecting background bypass source 11
- selecting key source 11
- shaped video
 - selecting 20
- SMS 7000 router
 - configuration 19
 - interface requirements 12
- software download from web 2

Source Selection bus
 use with Emergency Bypass option [10](#)

sources
 mapping [20](#)

switch
 Bypass Keyer module [26](#)
 Bypass Relay module [27](#)

U

unshaped video
 selecting [20](#)

V

variable fan speed [24](#)
video cabling [18](#)

W

web site documentation [2](#)
web site FAQ database [2](#)
web site Grass Valley [2](#)
web site software download [2](#)

