

Kalypso Classic

VIDEO PRODUCTION CENTER

Installation and Service Manual

SOFTWARE VERSION 11.0

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

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Preface

About This Manual

This *Kalypso Installation & Service Manual* is designed for technical personnel responsible for installing and maintaining Kalypso Classic systems.

Standard Documentation Set

The standard Kalypso documentation set consists of a:

- User Manual,
- Reference Manual,
- Installation & Service Manual, and
- Release Notes.

The *Kalypso User Manual* contains background information about the Kalypso Video Production Center, and describes operating procedures. This manual can be used while learning about Kalypso, and for enhancing your basic knowledge of the system.

The *Kalypso Reference Manual* contains comprehensive and concise information about the Kalypso panel controls and menus. Refer to this manual to learn the functions of specific Kalypso system controls.

The *Kalypso Installation & Service Manual* contains information about installing, configuring, and maintaining the system.

Note Different Installation & Service Manuals ship with Kalypso Classic and Kalypso HD/Duo systems. Be sure to use the correct manual for your type of system.

The *Kalypso Release Notes* contain information about new features and system enhancements for a specific software version, and also includes software installation procedures. Always check the release notes for your current system software before you begin operating your system.

Other Documentation

The *Kalypso Machine Control Interfaces Installation Instructions*, provided with the KAL-IF-PROFILE and KAL-IF-VTR options, contains information about installing and configuring external machine control software.

The *Kalypso Emergency Bypass Option Instruction Manual*, shipped with the Emergency Bypass option hardware, contains information about installing, configuring, and operating this option.

The *Kalypso/Zodiak Protocols Manual* is available for developers and software engineers to use to design interfaces to the Kalypso system.

Regulatory Notices

Certifications and Compliances

FCC Emission Control

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by Grass Valley can affect emission compliance and could void the user's authority to operate this equipment.

Canadian EMC Notice of Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

EN55103-1/2 Class A Warning

For products that comply with Class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC Emission Limits

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation.

Certification and Compliance

This product has been evaluated for Electromagnetic Compatibility under the EN 55103-1/2 standards for Emissions and Immunity and meets the requirements for E4 environment.

This product complies with Class A (E4 environment). In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

This product has been evaluated and meets the following Safety Certification Standards:

4-M/E and 2-M/E Kalypso Systems

Category	Standard	Designed/tested for compliance with:
Safety	UL1950	Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition, 1993).
	IEC 950	Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition, 1991).
	CAN/CSA C22.2 No. 950-93	Safety of Information Technology Equipment, including Electrical Business Equipment.
	EN60950	Safety of Information Technology Equipment, including Electrical Business Equipment.

1-M/E Main Panel

Category	Standard	Designed/tested for compliance with:
Safety	UL60950	Safety of Information Technology Equipment, including Electrical Business Equipment (Third edition revision 3/15/02).
	IEC 60950	Safety of Information Technology Equipment, including Electrical Business Equipment (Third edition, 1999).
	CAN/CSA C22.2 No. 60950-00	Safety of Information Technology Equipment, including Electrical Business Equipment.
	EN60950	Safety of Information Technology Equipment, including Electrical Business Equipment.

Safety Summary

Read and follow the important safety information below, noting especially those instructions related to risk of fire, electric shock or injury to persons. Additional specific warnings not listed here may be found throughout the manual.

WARNING Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Safety Terms and Symbols

Terms in This Manual

Safety-related statements may appear in this manual in the following form:

WARNING Warning statements identify conditions or practices that may result in personal injury or loss of life.

CAUTION Caution statements identify conditions or practices that may result in damage to equipment or other property, or which may cause equipment crucial to your business environment to become temporarily non-operational.

Terms on the Product

The following terms may appear on the product:

DANGER — A personal injury hazard is immediately accessible as you read the marking.

WARNING — A personal injury hazard exists but is not immediately accessible as you read the marking.

CAUTION — A hazard to property, product, and other equipment is present.

Symbols on the Product

The following symbols may appear on the product:



Indicates that dangerous high voltage is present within the equipment enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



Indicates that user, operator or service technician should refer to product manual(s) for important operating, maintenance, or service instructions.



This is a prompt to note fuse rating when replacing fuse(s). The fuse referenced in the text must be replaced with one having the ratings indicated.



Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.



Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.



Indicates that static sensitive components are present which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.

Warnings

The following warning statements identify conditions or practices that can result in personal injury or loss of life.

Dangerous voltage or current may be present — Disconnect power and remove battery (if applicable) before removing protective panels, soldering, or replacing components.

Do not service alone — Do not internally service this product unless another person capable of rendering first aid and resuscitation is present.

Remove jewelry — Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.

Avoid exposed circuitry — Do not touch exposed connections, components or circuitry when power is present.

Use proper power cord — Use only the power cord supplied or specified for this product.

Ground product — Connect the grounding conductor of the power cord to earth ground.

Operate only with covers and enclosure panels in place — Do not operate this product when covers or enclosure panels are removed.

Use correct fuse — Use only the fuse type and rating specified for this product.

Use only in dry environment — Do not operate in wet or damp conditions.

Use only in non-explosive environment — Do not operate this product in an explosive atmosphere.

High leakage current may be present — Earth connection of product is essential before connecting power.

Dual power supplies may be present — Be certain to plug each power supply cord into a separate branch circuit employing a separate service ground. Disconnect both power supply cords prior to servicing.

Double pole neutral fusing — Disconnect mains power prior to servicing.

Use proper lift points — Do not use door latches to lift or move equipment.

Avoid mechanical hazards — Allow all rotating devices to come to a stop before servicing.

Cautions

The following caution statements identify conditions or practices that can result in damage to equipment or other property

Use correct power source — Do not operate this product from a power source that applies more than the voltage specified for the product.

Use correct voltage setting — If this product lacks auto-ranging power supplies, before applying power ensure that the each power supply is set to match the power source.

Provide proper ventilation — To prevent product overheating, provide equipment ventilation in accordance with installation instructions.

Use anti-static procedures — Static sensitive components are present which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.

Do not operate with suspected equipment failure — If you suspect product damage or equipment failure, have the equipment inspected by qualified service personnel.

Ensure mains disconnect — If mains switch is not provided, the power cord(s) of this equipment provide the means of disconnection. The socket outlet must be installed near the equipment and must be easily accessible. Verify that all mains power is disconnected before installing or removing power supplies and/or options.

Route cable properly — Route power cords and other cables so that they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.

Use correct power supply cords — Power cords for this equipment, if provided, meet all North American electrical codes. Operation of this equipment at voltages exceeding 130 VAC requires power supply cords which comply with NEMA configurations. International power cords, if provided, have the approval of the country of use.

Use correct replacement battery — This product may contain batteries. To reduce the risk of explosion, check polarity and replace only with the same or equivalent type recommended by manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Troubleshoot only to board level — Circuit boards in this product are densely populated with surface mount technology (SMT) components and application specific integrated circuits (ASICs). As a result, circuit board repair at the component level is very difficult in the field, if not impossible. For warranty compliance, do not troubleshoot systems beyond the board level.

System Overview

Introduction

The Kalypso Video Production Center is much more than a switcher. The Kalypso system not only features powerful digital video switching, mixing, and keying with E-MEM, but also provides integrated control of other production devices (e.g., facility routers, external effects systems, DDRs). The Kalypso Video Production Center also has a flexible, scalable, and quickly reconfigurable architecture able to meet the demanding requirements of live production and post production applications.

Two different Kalypso systems are available, one supporting standard definition video (Kalypso Classic), and the other supporting high definition video (Kalypso HD). These systems use different processing hardware, and so have different Video Processor frames, but both systems use the same types of control panels.

Note This manual covers the Kalypso Classic system. Refer to the separate *Kalypso HD/Duo Installation and Service Manual* for information about the Kalypso HD or Duo systems.

Features

4-M/E Kalypso Classic Standard Features

- SMPTE 259M video and key,
- 16 auto-timed inputs (configured as single inputs or video/key pairs),
- Eight timed outputs (configured as single outputs or video/key pairs),
- Four identical Mix Effects (M/E) subsystems (3 M/E, 1 PGM PST),
- 32 Source Selection buttons on each M/E bus row,
- Four keyers per M/E, with Borderline on each keyer,
- Status display on each M/E,
- Source name display standard on PGM PST,

- Effects Send (internal and external) available on every key bus,
- Unlimited re-entry,
- Look ahead and other preview modes,
- Touch screen Menu panel,
- Local Aux panel, with source name display standard,
- E-MEM (100 registers) with disk storage,
- Tally Module (64 tally contacts),
- Serial control of VTR/DDR (BVW 75 protocol)
- Router Interface,
- Hot swappable modules (including power supplies),
- Resource Sharing, and
- Macros.

4-M/E Kalypso Classic Options

Selected sets of options may be combined into packages for initial purchase. Individual options can be purchased and added to a Kalypso system at a later time. Some Kalypso system options contain hardware components and some are software enabled.

- Input modules (16 inputs each), up to 80 total inputs,
- Output modules (8 outputs each), up to 48 total outputs,
- Source Name displays for M/E 1, 2, and 3,
- Chromatte Advanced Dual Chroma Keyer, adds two floating chroma keyers, able to be assigned to any keyer in the system at any time. Up to eight dual chroma keyers (16 total) can be installed,
- FlexiKey Programmable Clean Feed, permits two independent program streams, using key substitution, through one or more M/Es,
- Transform Engine, adds three channels of video/key digital transform effects. Up to two Transform Engines can be installed,
- Kurl (for Transform Engine), with Splits and Mirrors,
- SuperStill, adds advanced Still Store capabilities with two inputs, eight outputs, animation, disk storage, and includes the Still Store Loader application for image transfer to and from PCs,
- KlipCache (for SuperStill), increases cache storage capacity to about 1800 frames,
- DoubleTake, permits two completely independent M/E composites in a single M/E, producing the power of 8 M/Es in a 4-M/E system,
- Machine control of Profile VDR channels via Ethernet,

- Machine control of VTRs via Ethernet,
- AMP Serial Machine Control,
- Additional Tally Module, adding 64 more tally contacts,
- Backup Video Processor power supply,
- Redundant Main panel power supply,
- 24 and 32-Crosspoint Remote Aux panels,
- Shot Box,
- Emergency Bypass, and
- NetCentral

2-M/E Kalypso Classic Standard Features

The 2-M/E Kalypso system has the same features as the 4-M/E Kalypso system, with the following differences:

- One full featured M/E bank and one full featured PGM PST bank on the Main panel,
- 24 Source Selection buttons on each M/E bus row, and
- Local Aux panel functions incorporated into the Main panel.

2-M/E Kalypso Classic Options

The 2-M/E Kalypso system has the same options as the 4-M/E Kalypso system, with the following differences:

- Additional Output modules can be added, providing up to 40 outputs, and
- Up to two additional M/E modules can be installed, accessed from the M/E and PGM PST banks via delegation (an additional Crosspoint module is required).

External Interfaces Supported

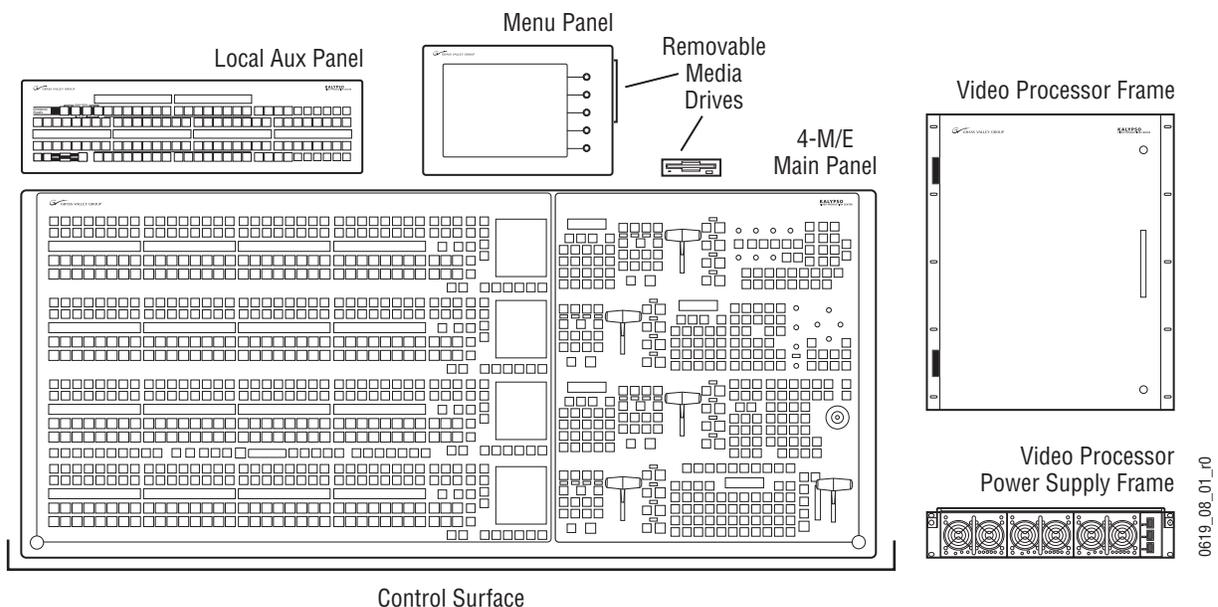
All Kalypso systems support the following control interfaces and types of external devices:

- GPI Inputs and Outputs,
- Tally (contact closure),
- Peripheral Bus II Protocol,
- Facility Routers,
- External Digital Effects Systems, including CPL,
- Digital Disk Recorders,
- Video Tape Recorders,
- Character Generators, and
- Still Stores.

System Components

A Kalypso System consists of a Control Surface comprised of two or more control panels, a Video Processor frame, Video Processor Power Supply, and removable media drives. Several of the standard 4-M/E system components depicted in [Figure 1](#) are also common to 2-M/E systems. Remote Aux panels and accessory satellite panels are available as options.

Figure 1. 4-M/E Kalypso System Components

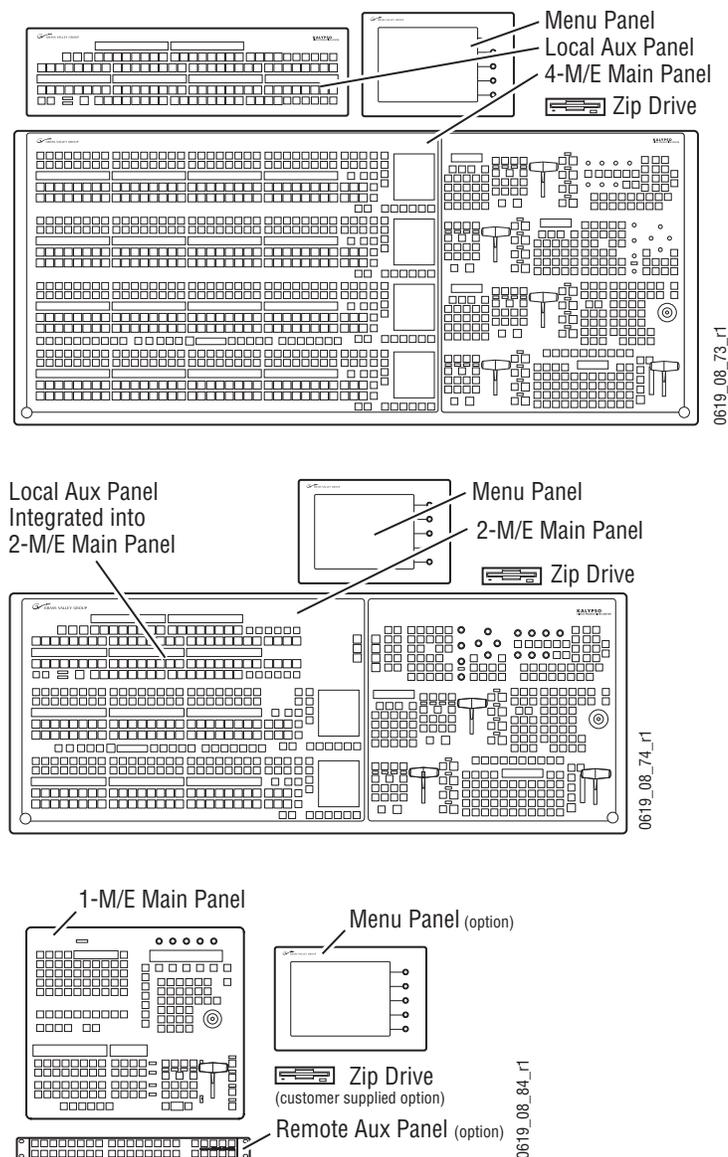


Control Surface

The modular design of Kalypso control panels provides flexibility for mounting component panels in various environments, and allows the addition of specialized accessory control panels. A group of panels available to a single operator is called a Control Surface. A single Kalypso Video Production Center may have multiple Control Surfaces, allowing more than one operator to control some or all of the Kalypso system.

A Control Surface consists of at least two components, a Main panel and a Menu panel. The 4-M/E has a separate Local Aux panel, while the 2-M/E has a Local Aux subpanel integrated into the Main panel. A 1-M/E control surface is designed to operate in conjunction with a 4-M/E or 2-M/E Main panel as an accessory workstation (refer to Figure 2).

Figure 2. Kalypso Control Surface

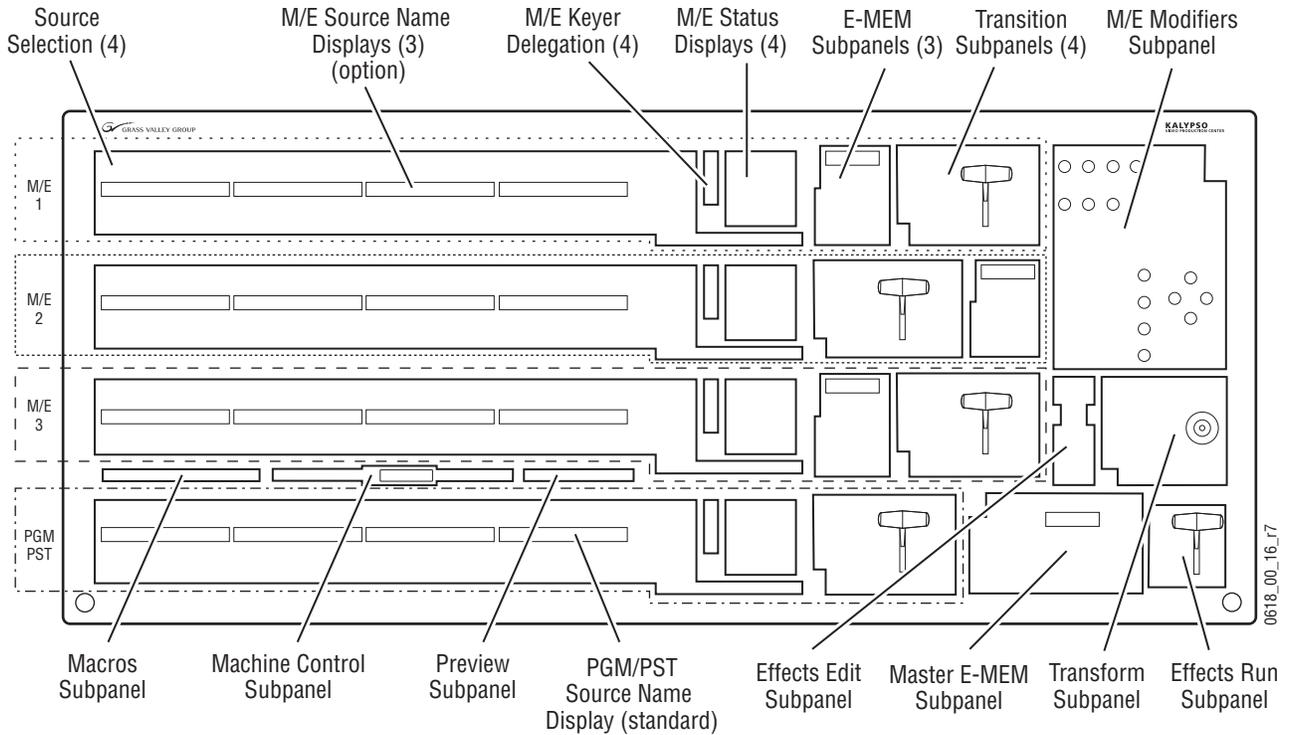


4-M/E Kalypso System

4-M/E Main Panel

The Main panel provides real time button, knob, and lever arm control of the Kalypso system. The panel is organized into subpanels that contain groups of related controls (Figure 3).

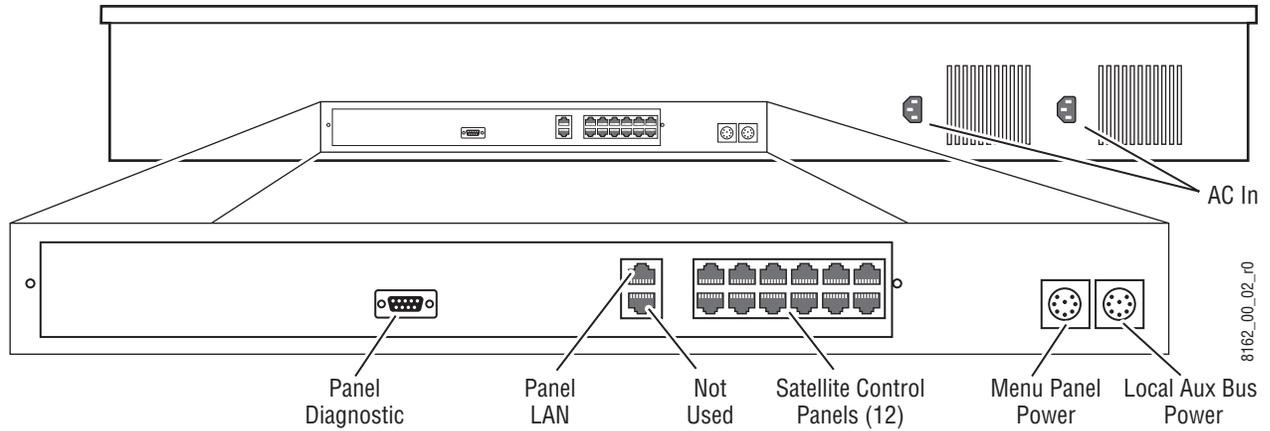
Figure 3. Kalypso 4-M/E Main Panel



Connections to the Kalypso Processor and to other components of the Kalypso Control Surface are located on the rear of the Main panel (Figure 6).

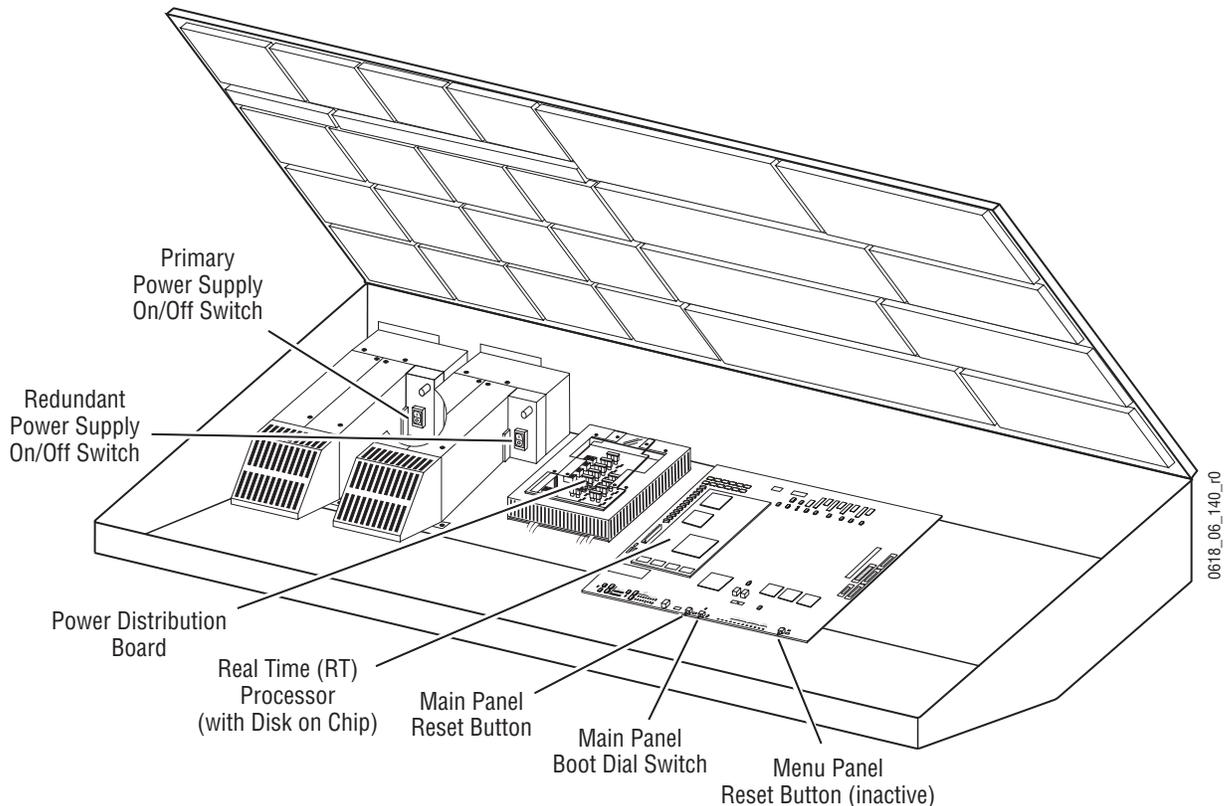
Two models of 4-M/E Main panel exist. Late model designs shipping at the time of this manual's publication have the connections shown in Figure 4. This model Main panel works with the Enhanced Menu panel.

Figure 4. Late Model 4-M/E Main Panel, Rear View



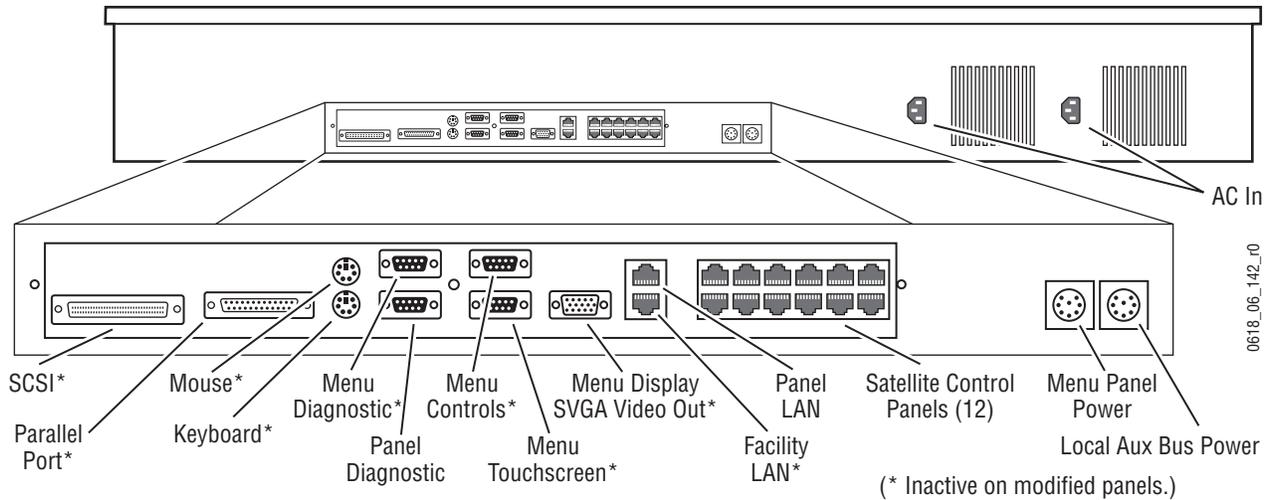
Main panel power switches and the Main panel reset button are accessed by lifting the top of the Main panel (Figure 5). A redundant power supply can be installed into the tub of the Main panel as an option. The Main panel provides power to the separate Menu panel and Local Aux panel.

Figure 5. Late Model 4-M/E Main Panel Inside View



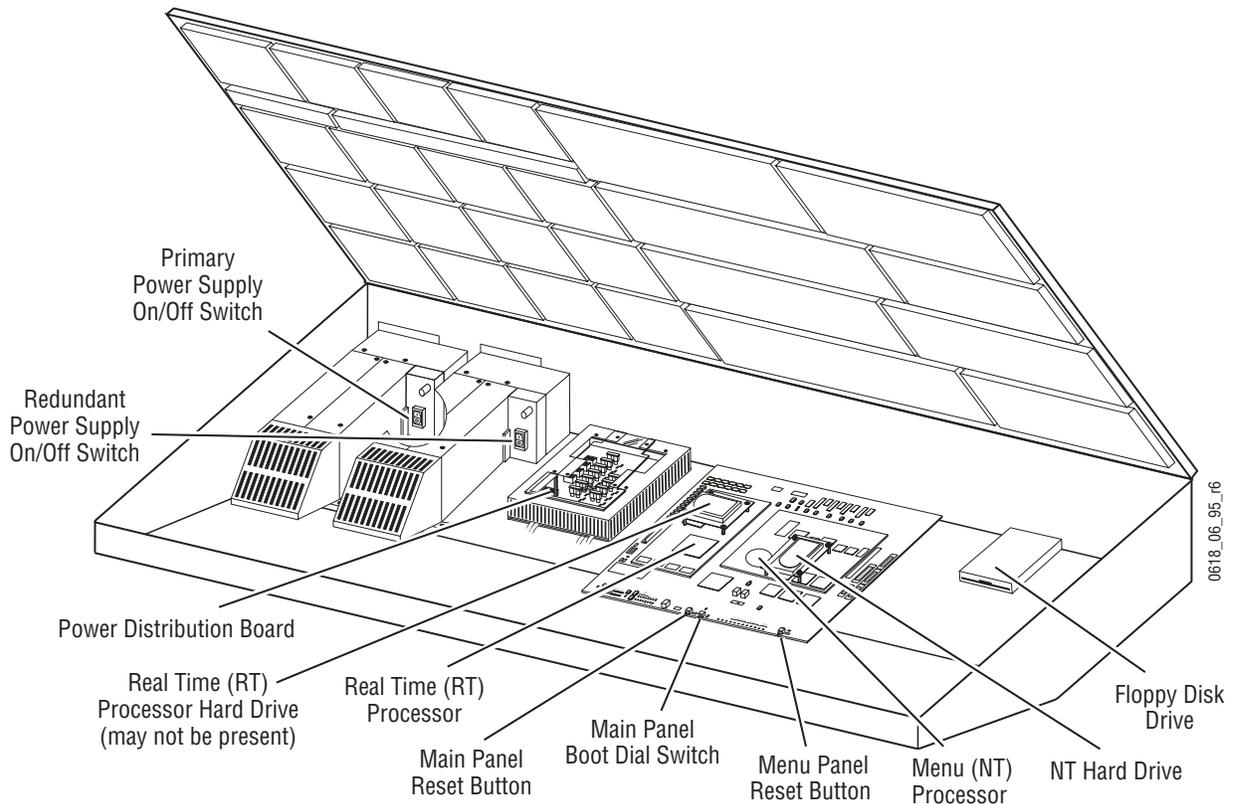
Earlier model 4-M/E Main panels have additional connectors (Figure 6) used with the original Kalypso Menu panel. If this model is modified for Enhanced Menu panel operation, the indicated connectors are inactive.

Figure 6. Early Model 4-M/E Main Panel, Rear View



The early model Main panel power switches, reset buttons, and floppy drive are located under the Main panel lid (Figure 7).

Figure 7. Early Model 4-M/E Main Panel Inside View



The actual location of and type of equipment installed in early model Main panels varies, depending on date of manufacture. Some earlier designs used Hard Disk drives with the Real Time (RT) processor, and some used Disk on Chip hardware. Also, drives may be mounted directly on the processor boards or on separate brackets. If modified for Enhanced Menu panel operation, unnecessary hardware is removed and some rear connectors become inactive.

Regardless of the equipment involved, the various model Kalypso systems generally operate identically, except late model systems do not have floppy disk drives.

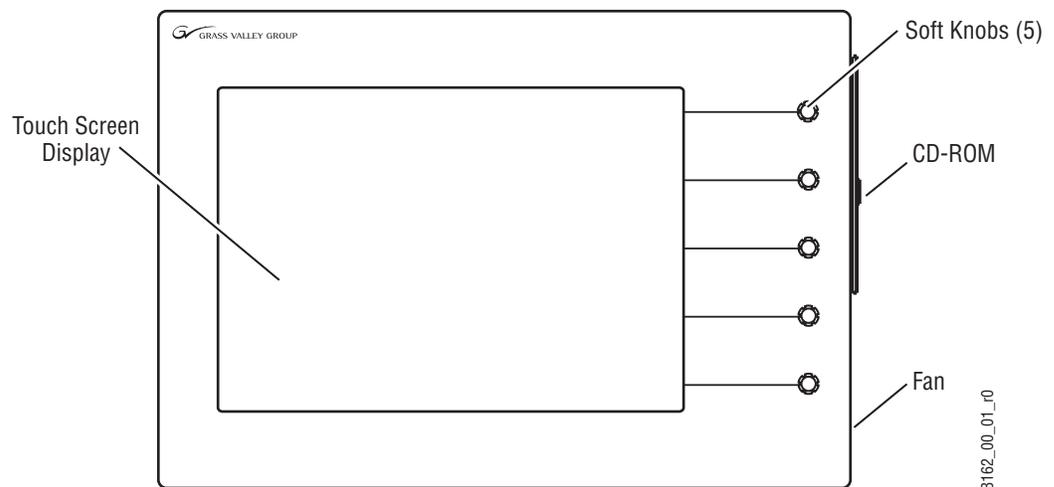
Menu Panel

The Menu panel provides access to additional system controls that generally do not require real time adjustment. The Menu panel can be installed above or to either side of the Main panel, and should be oriented so the screen directly faces the operator. Additional Menu panels can also be configured with a Kalypso Control Surface.

Two models of Kalypso Menu panel exist, an Enhanced Menu panel and the Original Menu panel. The Enhanced Menu panel operates with late model Main panels (or modified early model panels). The Original Menu panel only works with unmodified early model Main panels.

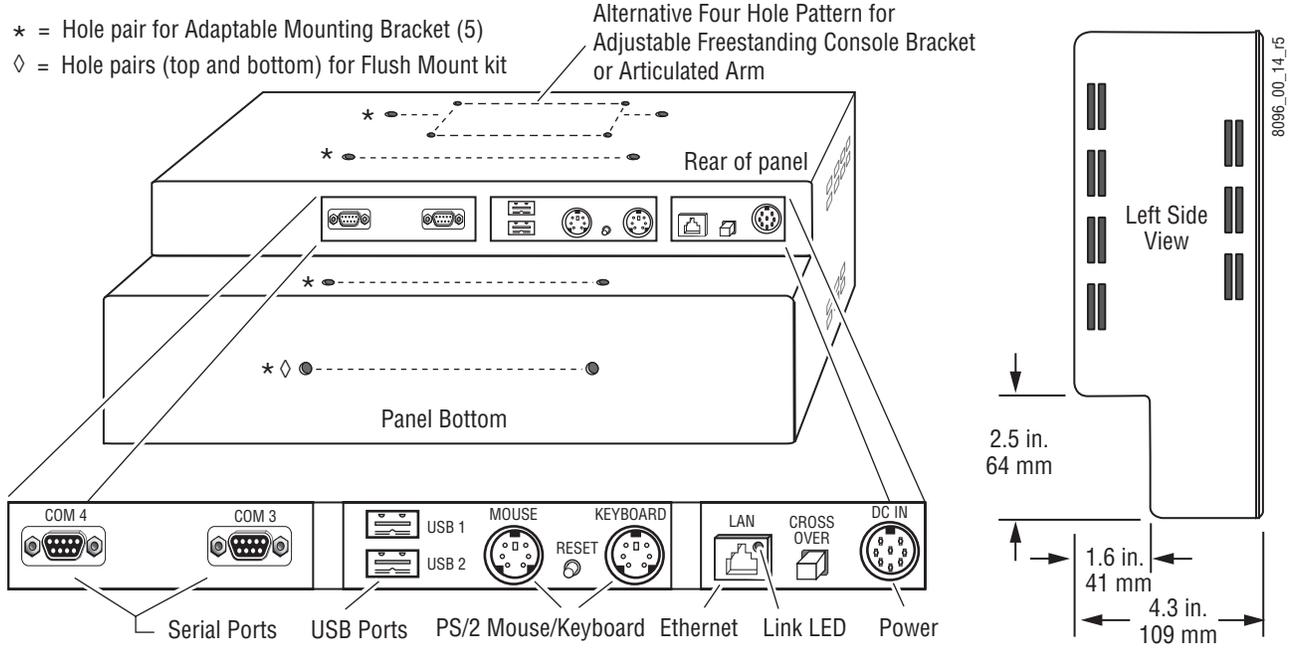
The Enhanced Menu panel ([Figure 8](#)) includes a touch screen display, five knobs for adjusting parameter values, a cooling fan, and an internal CD-ROM drive. This model houses the Menu System Processor and runs the Windows 2000 operating system.

Figure 8. Enhanced Menu Panel, Front View



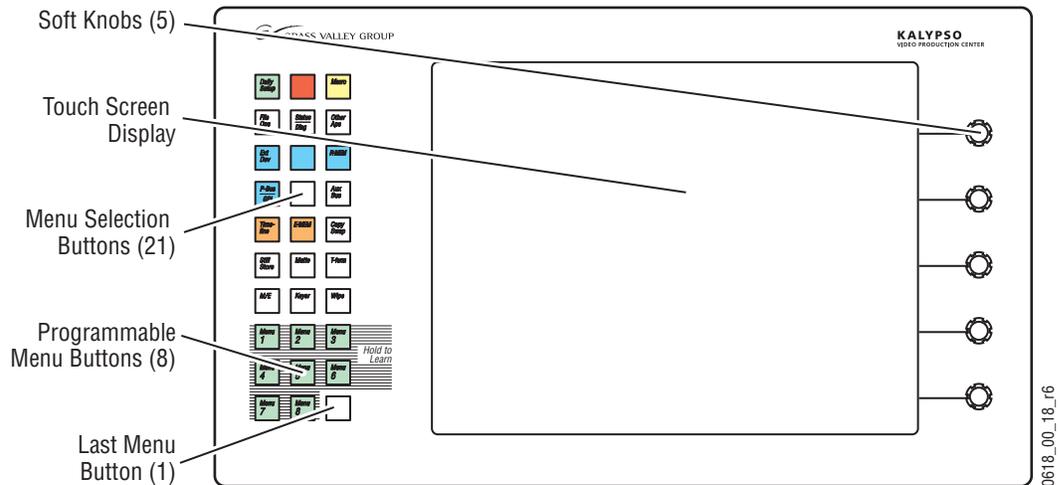
Ports located on the rear of the Menu panel (Figure 9) provide connections to the Main panel, Video Processor frame, an external Zip drive, a PS/2 mouse and keyboard, and other devices. A reset button is also available.

Figure 9. Enhanced Menu Panel, Bottom View of Connectors



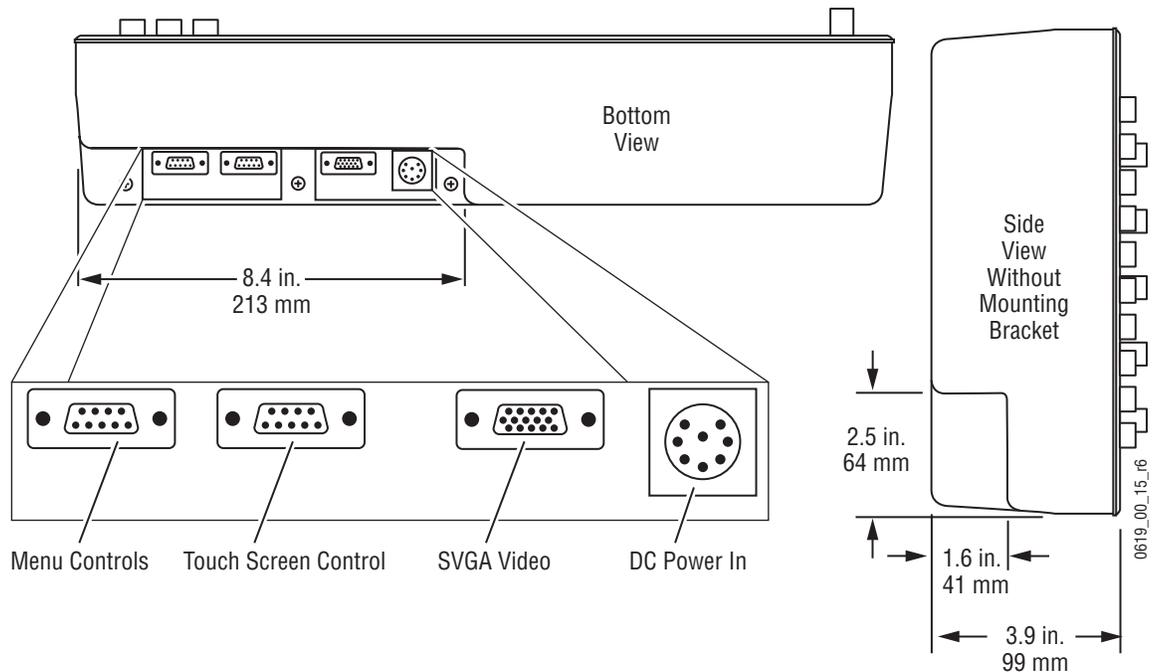
The original Kalypso Menu panel (Figure 10) has a touch screen display and knobs for adjusting parameter values, and also includes Menu Selection buttons on the left. This model Menu panel runs the Windows NT operating system.

Figure 10. Original Menu Panel, Front View



The Menu System Processor for these models resides in the Main panel, and so extra connections are required for operation (Figure 11).

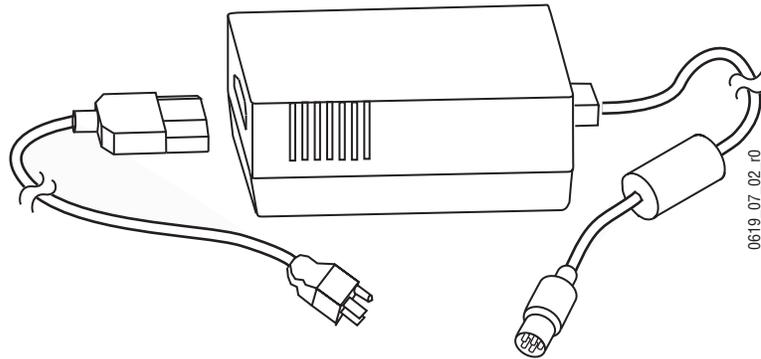
Figure 11. Original Menu Panel, Bottom View of Connectors



Power Cabling

The Menu panel normally receives its power from the Main panel. An optional brick style external power supply is available that allows the Menu panel to be powered independently from the Main panel (Figure 12). This same type of power supply can be used with the Local Aux panel.

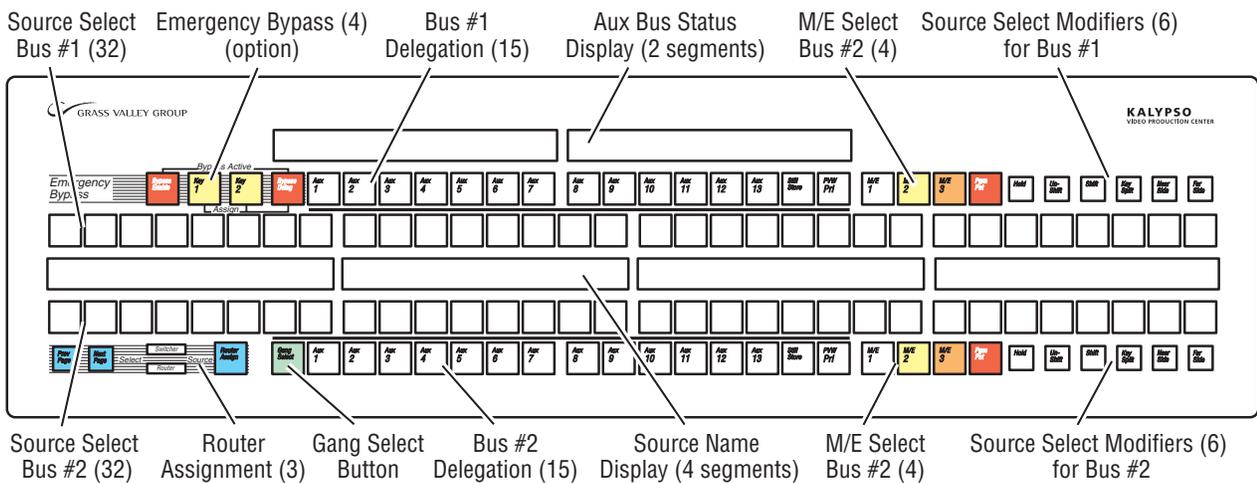
Figure 12. Optional External Power Supply



Local Aux Panel

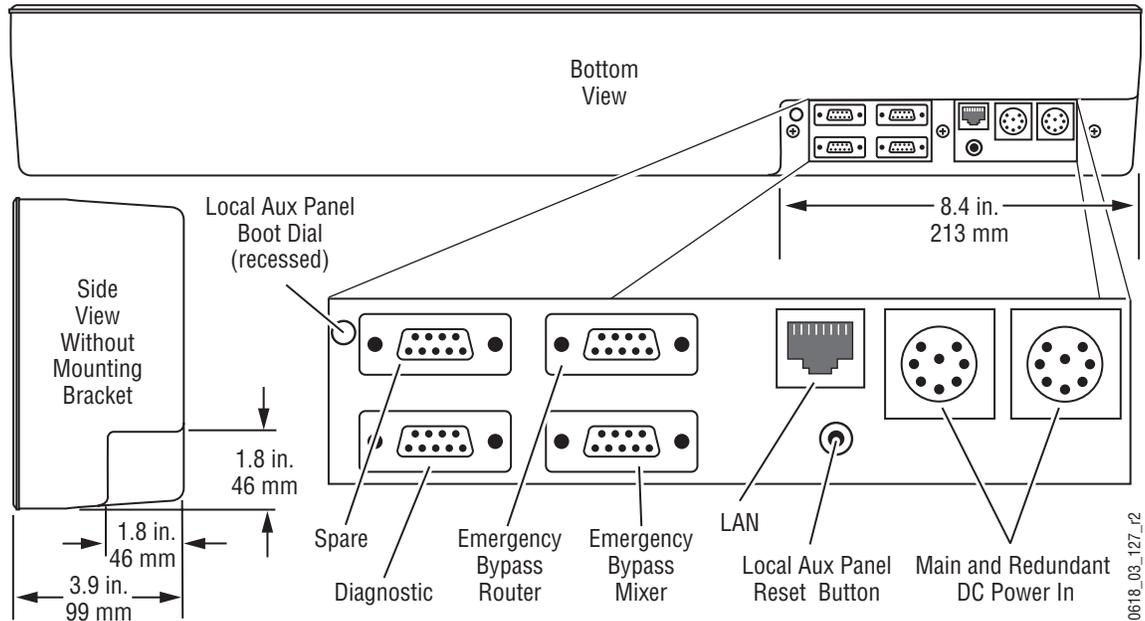
The Local Aux panel provides control of the Kalypso System Aux buses, Still Store source selection, some switched preview, and also supports Router source selection and Emergency Bypass option operation (Figure 13).

Figure 13. Kalypso Local Aux Panel



Connections to the Kalypso Main panel are located on the bottom of the Local Aux panel (Figure 14). A reset button is also available.

Figure 14. Local Aux Panel, Bottom View of Connectors



The Local Aux panel is generally installed directly above the left side of the Main panel so the Source Select buttons are aligned, though it can be mounted in any convenient location.

If the Emergency Bypass option is installed, a redundant power supply for the Local Aux panel is available to ensure bypass operation even if the Main panel loses power.

Power Cabling

The Local Aux bus is normally powered from the Main panel. The Local Aux panel can also accept a redundant power source, and/or be powered separately from the Main panel using the same model optional power supply available for the Menu panel (see Figure 12 on page 34).

Removable Media Drives

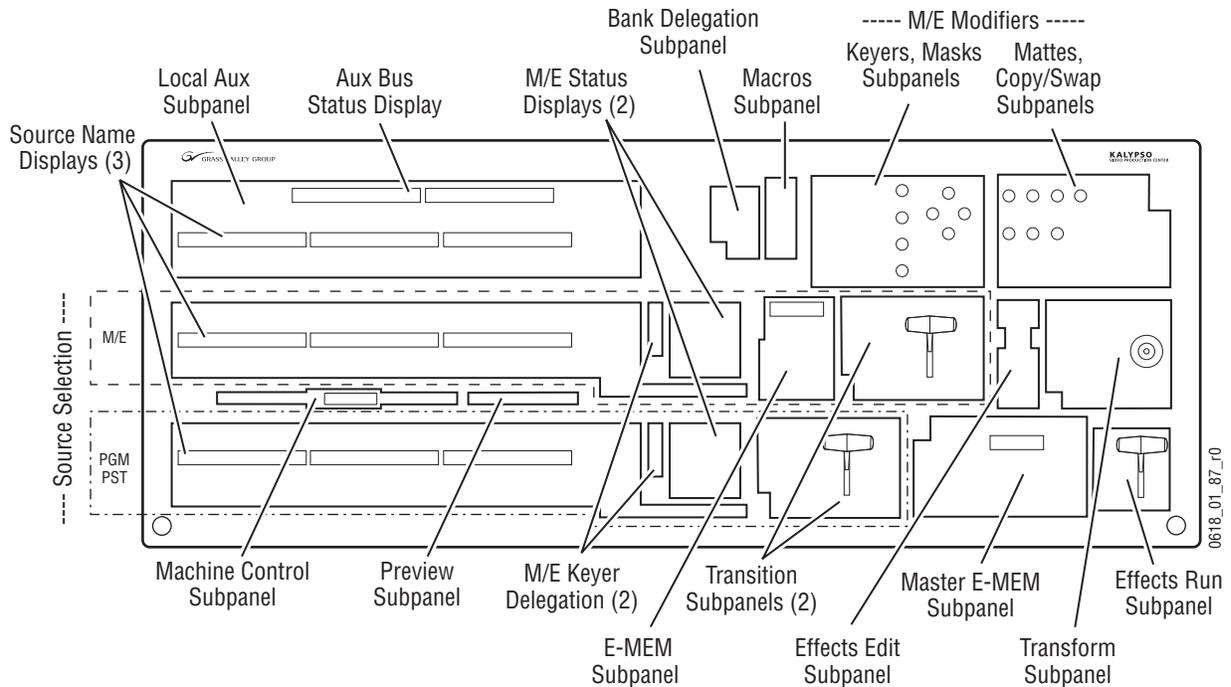
Different Removable Media Drives are provided, depending on Kalypso model. Late model Kalypso systems ship with a USB 250 MB Zip drive that connects to the Menu panel, and a CD-ROM drive built into the Menu panel. If the Enhanced Menu panel Flush Mount kit is specified, an external USB CD-ROM drive is included.

Early model Kalypso systems shipped with three removable media drives which connect to the Main panel. Included are a SCSI CD-ROM drive, a 250 MB Zip drive (which is connected to the SCSI chain via the CD-ROM), and a standard 1.4 MB 3.5 in. floppy disk drive. The floppy drive is mounted in the Main panel tub and is not intended for routine user access.

2-M/E Main Panel

The 2-M/E Main panel is similar to the 4-M/E panel (Figure 15). Instead of 3 M/Es and a PGM PST, the 2-M/E Main panel has one M/E bank and one PGM PST bank, though three M/Es and PGM PST are accessible via delegation. Local Aux Bus control capabilities are also built in as a subpanel.

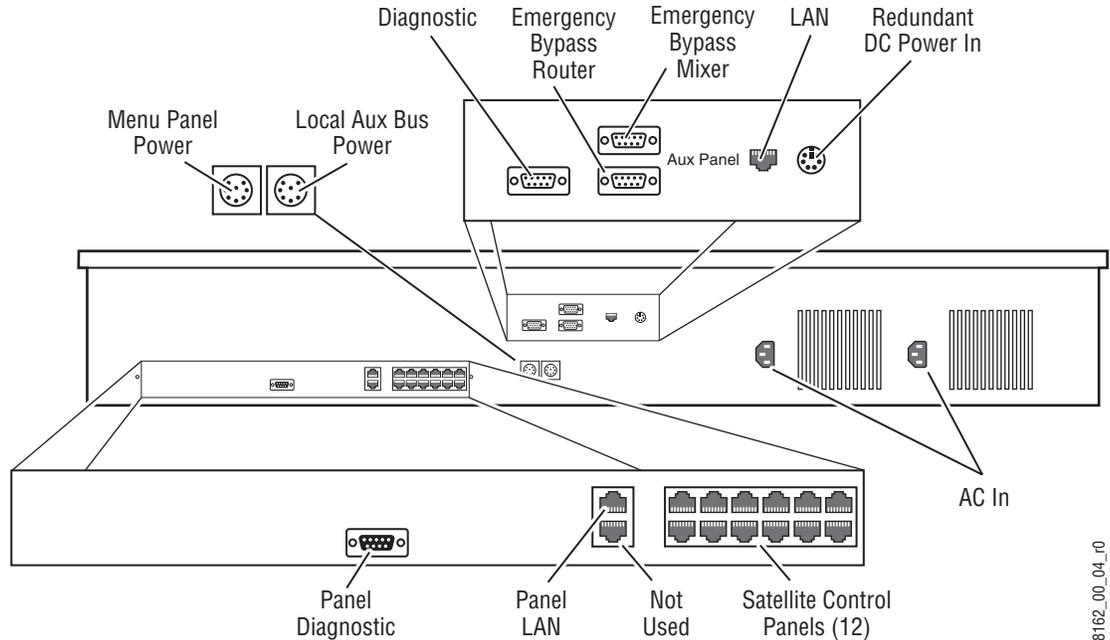
Figure 15. Kalypso 2-M/E Main Panel



Two models of 2-M/E Main panel exist. Late model systems operate with the Enhanced Menu panel, and early model systems operate with the Original Menu panel.

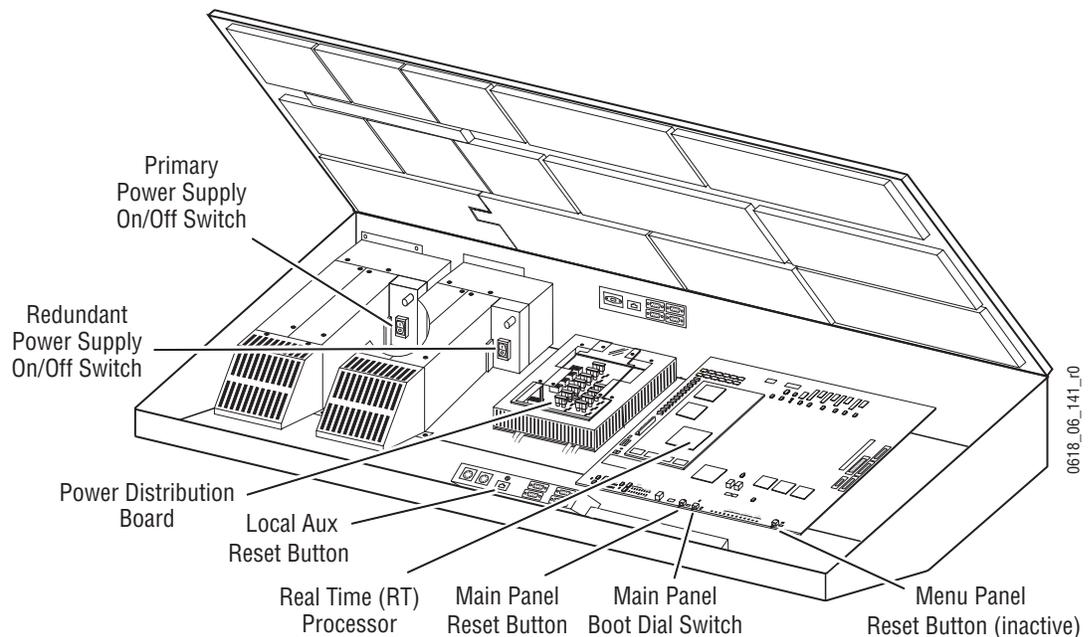
Late model Kalypso 2-M/E Main panels have connectors at the rear that are identical to those on a late model 4-M/E system, except there are additional Local Aux panel connections (Figure 16).

Figure 16. Late Model 2-M/E Main Panel, Rear View



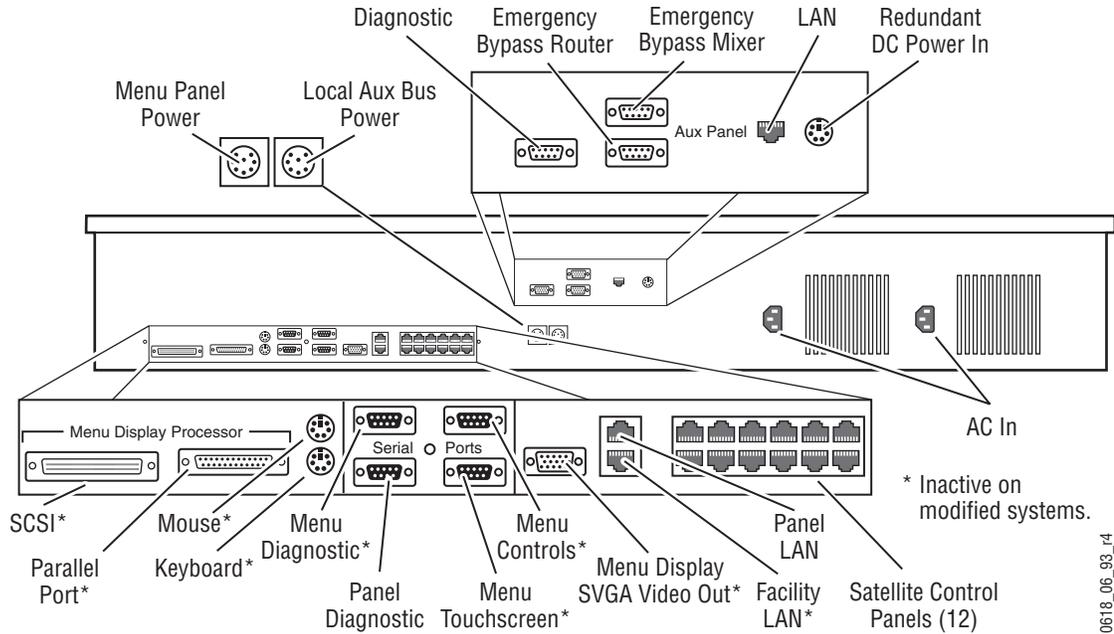
The late model Kalypso 2-M/E Main panel power switches, reset buttons, and circuit boards (including the Local Aux panel) are accessed by lifting the top of the Main panel (Figure 17).

Figure 17. Late Model 2-M/E Main Panel, Inside View



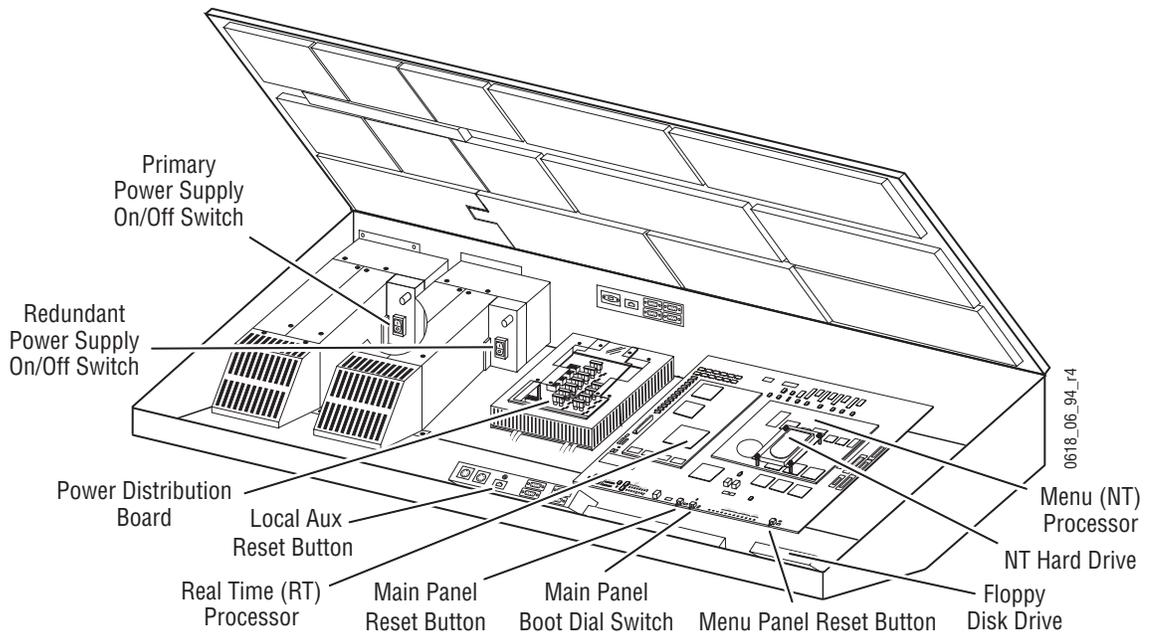
Early model 2-M/E Main panel rear connectors are shown in Figure 18. If modified for Enhanced Menu panel operation the indicated connectors are inactive.

Figure 18. Early Model 2-M/E Main Panel, Rear View



Early model Kalypso 2-M/E Main panel power switches, reset buttons, floppy drive, and circuit boards (including the Local Aux panel) are shown in (Figure 19). Modified panels have unnecessary hardware removed.

Figure 19. Early Model 2-M/E Main Panel, Inside View



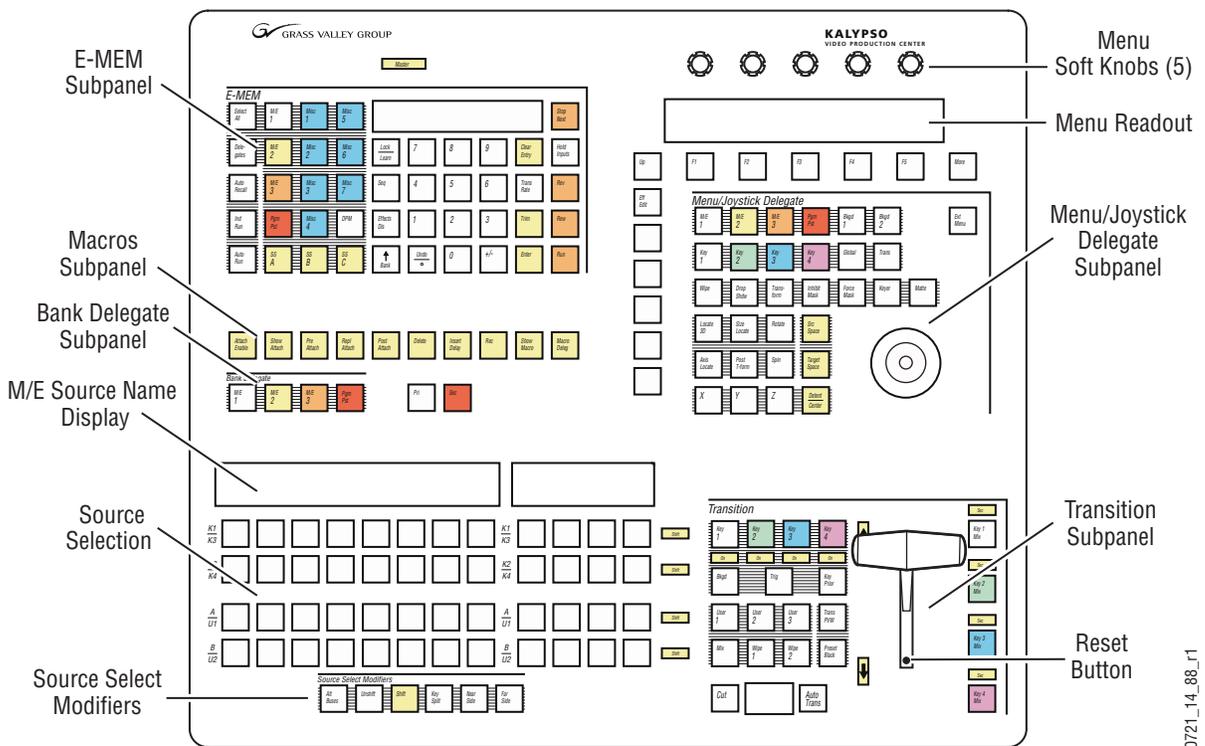
1-M/E Main Panel

A 1-M/E Main panel is intended to act as an accessory control surface for a 4-M/E or 2-M/E Kalypso system, not as the primary system control point. A 1-M/E Main panel can be used for pre- or post-production, or be used during live production to permit another operator to assist the TD. Intended uses for the 1 M/E panel include:

- Effects creation,
- Setup activities away from the main panel,
- Back room editing,
- Preselection and/or upstream effects layout, and
- Branding or other downstream activities.

Though the 1-M/E Main panel has only one M/E control bank, it can be delegated to control any of the M/Es of a 2 or 4-M/E Kalypso system.

Figure 20. Kalypso 1-M/E Main Panel

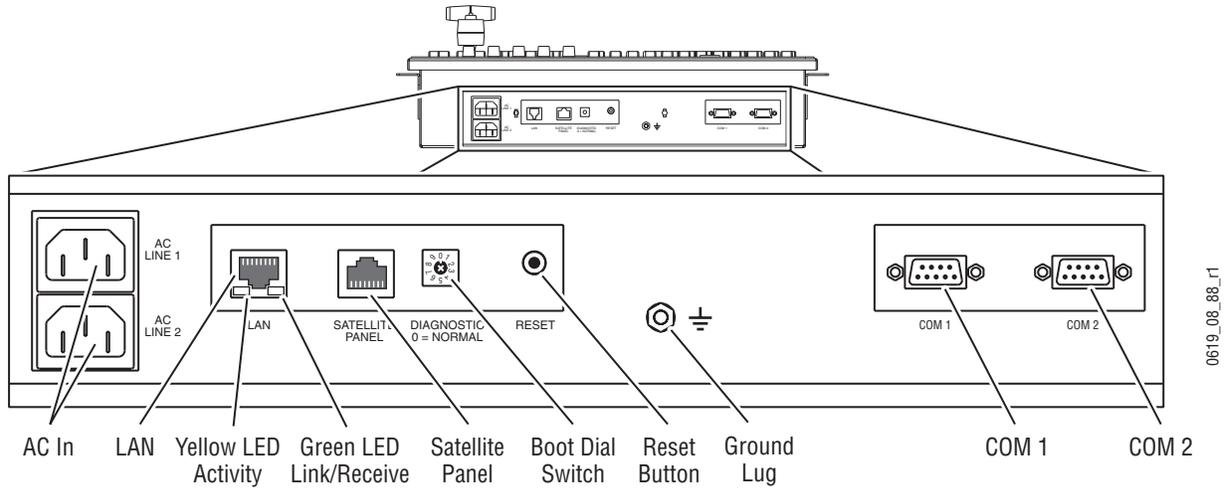


The 1-M/E Main panel's top lid is held closed with screws and is not designed to be opened by the operator. No user controls or field serviceable parts reside in the unit.

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The 1-M/E Main panel has a reset button on the rear and one inside the lever arm slot, to permit easy reset when installed in a console.

Figure 21. Kalypso 1-M/E Main Panel, Rear View



Control Panel Options

Remote Aux Panels

Remote Aux panels provide control of selected Kalypso Aux buses from a remote location. Three 24-Crosspoint and two 32-Crosspoint Remote Aux panels are available for 4-M/E and 2-M/E systems. Any combination of these aux panels may be used in a Kalypso system.

24-Crosspoint Remote Aux Panels

The three 24-Crosspoint panel models are designed to select 48 external sources (24 unshifted and 24 shifted). The 1 and 2 RU panels (KAL-24AUX1 and KAL-24AUX2) are dedicated to a single bus (Figure 22, Figure 23.) The 3 RU panel (KAL-24AUX3) panel is multi-destination with 18 bus delegate buttons (Figure 24). All 24-Crosspoint panels are powered by a separate power supply brick.

Figure 22. KAL-24AUX1 (1 RU) Remote Aux Panel

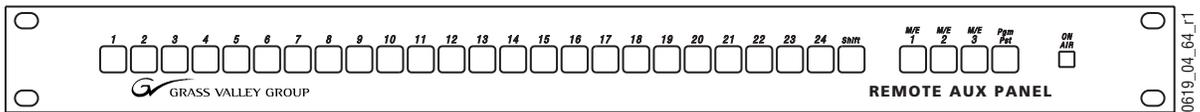


Figure 23. KAL-24AUX2 (2 RU) Remote Aux Panel

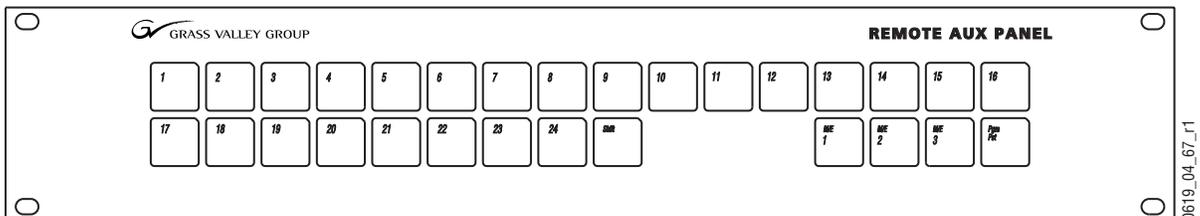
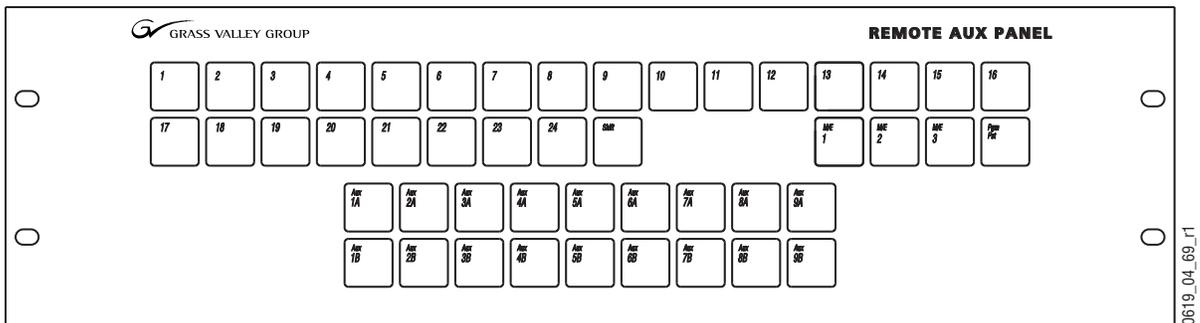
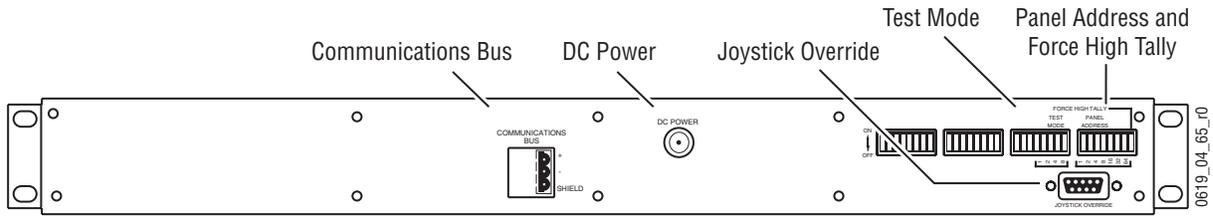


Figure 24. KAL-24AUX3 (3 RU) Remote Aux Panel



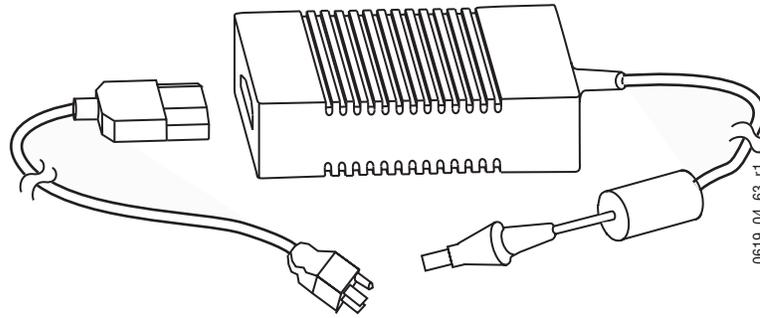
All three 24-Crosspoint panels have the same rear panel layout (Figure 25).

Figure 25. 24-Crosspoint Remote Aux Panel Rear Panel



24-Crosspoint Remote Aux panels uses an external, brick type power supply (Figure 26).

Figure 26. KAL-24AUX Power Supply



32-Crosspoint Remote Aux Panels

Both 32-Crosspoint Remote Aux panel models are designed to select 64 external sources (32 unshifted and 32 shifted). The 1 RU panel (KAL-32AUX1) is dedicated to a single bus (Figure 27). The 2 RU panel (KAL-32AUX2) is multi-destination with 16 bus delegate buttons (Figure 28).

Figure 27. KAL-32AUX1 (1 RU) Remote Aux Panel

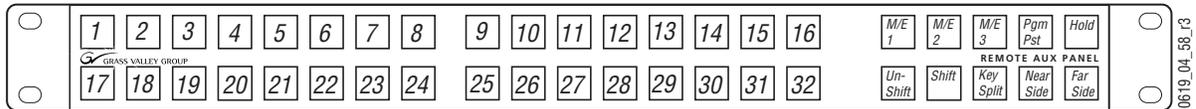
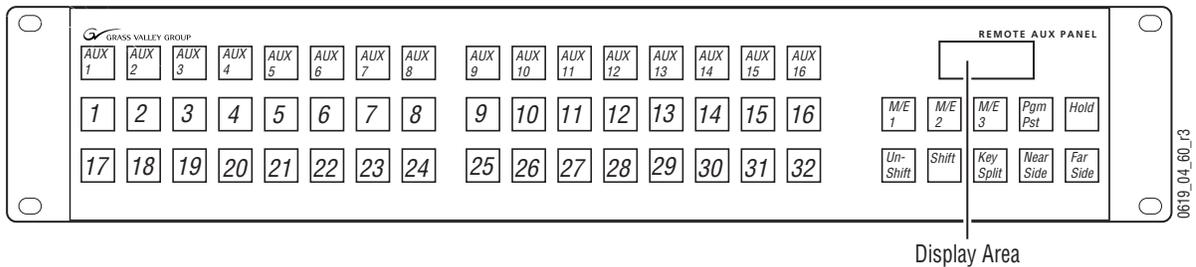
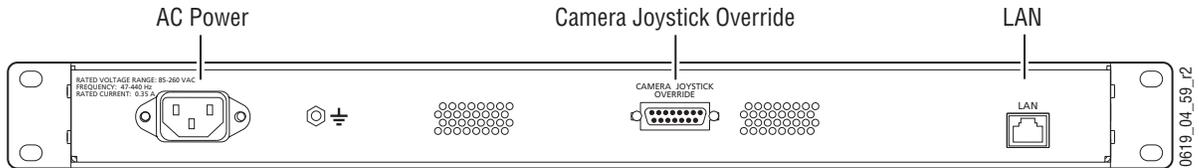


Figure 28. KAL-32AUX2 (2 RU) Remote Aux Panel



Both 32-Crosspoint Panels have the same rear panel layout (Figure 29). These panels have a built-in power supply and use a standard removable AC power cable.

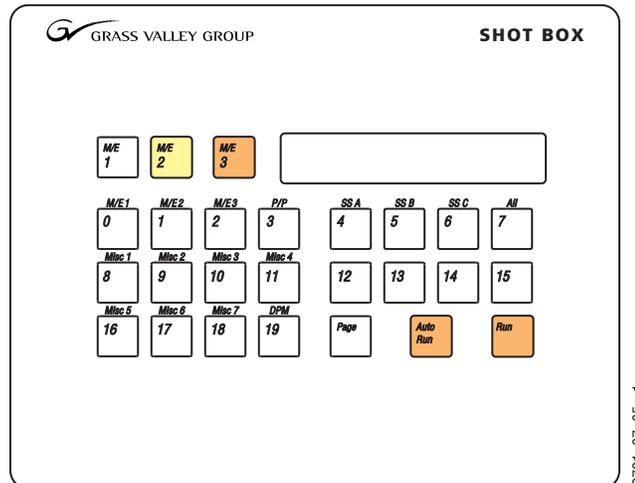
Figure 29. 32-Crosspoint Remote Aux Panel Rear View



Shot Box Option

The E-MEM Shot Box is a separate panel used to rapidly recall previously built effects (Figure 30).

Figure 30. Kalypso Shot Box



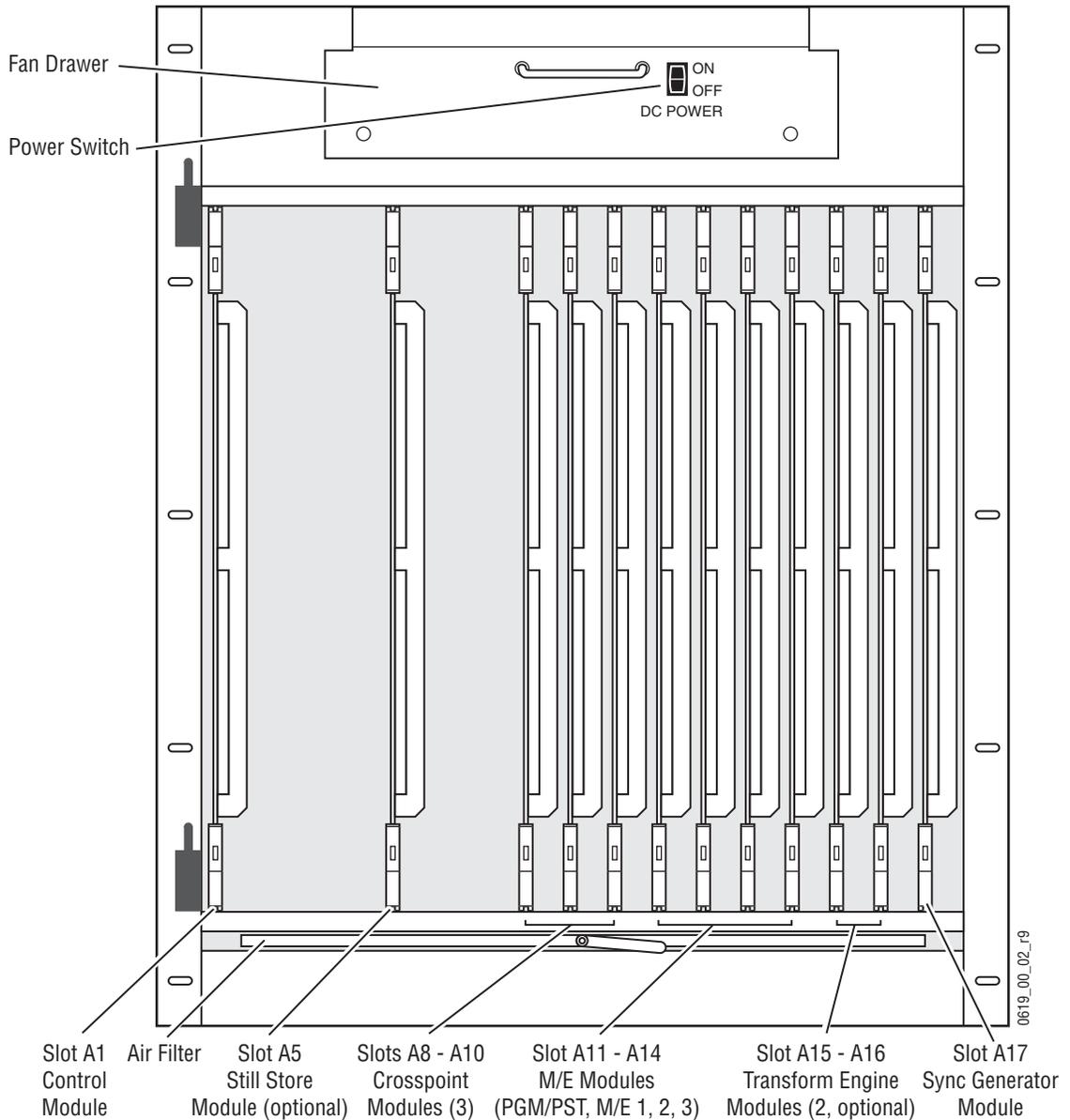
The Shot Box can be powered from the Main panel through the cables provided. If located more than 3 m (10 ft) from the Main panel, an optional Satellite Panel extension kit is available that includes a brick type power supply.

Kalypso Classic Video Processor Frame

4-M/E Kalypso Classic Video Processor Frame

The Kalypso Classic Video Processor frame houses most of the system electronics, with slots in the front and rear that hold individual modules. The front bay holds system control, video routing, and signal processing modules. A fully loaded system is shown in Figure 31.

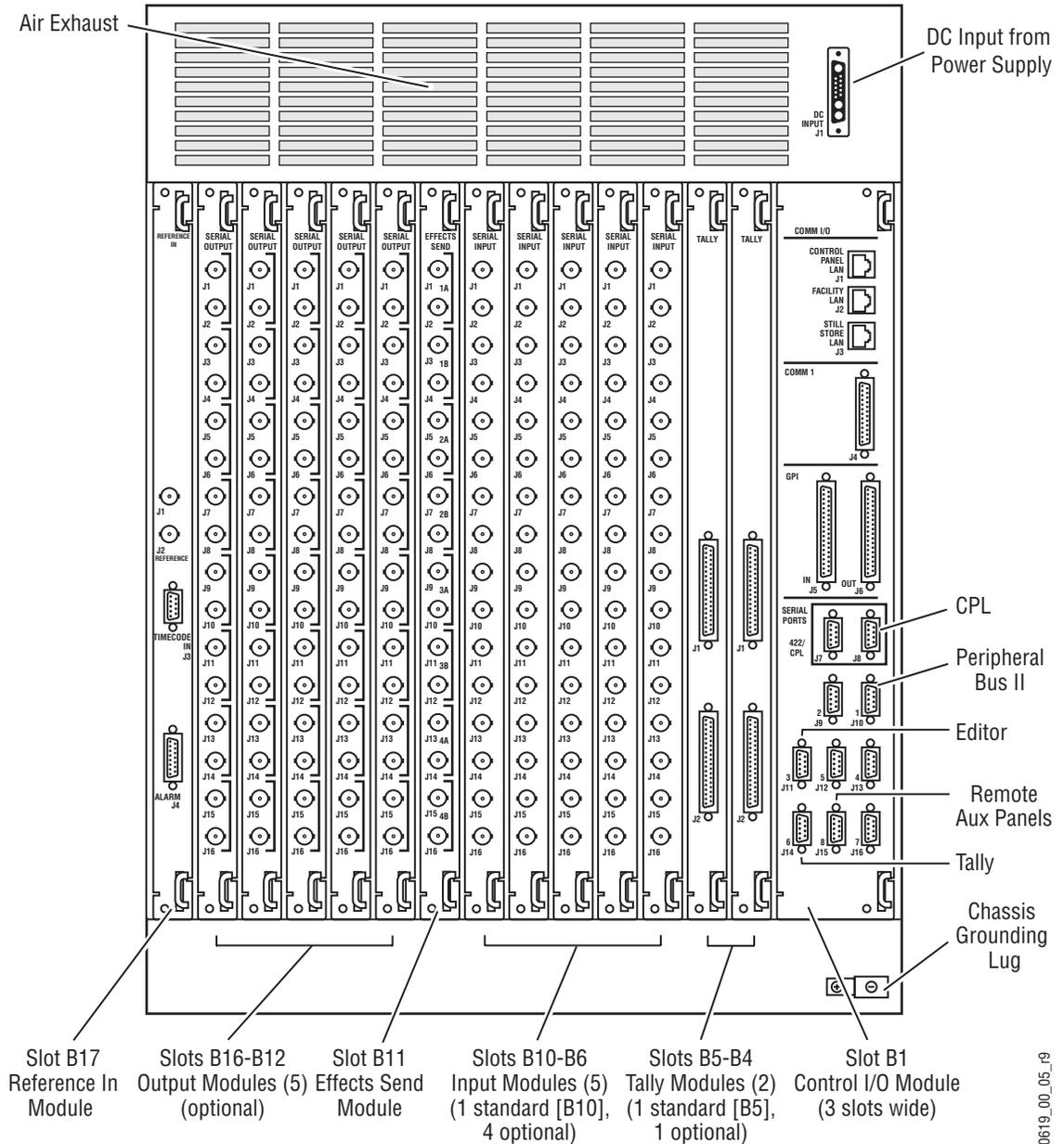
Figure 31. Fully Equipped Kalypso Classic Video Processor Frame Front View, Door Removed



CAUTION The front door of the Kalypso Video Processor must remain closed during normal system operation for proper cooling airflow.

The rear bay holds input and output modules and provides reference and system control connections. A fully loaded system is shown in Figure 32. Some of the modules illustrated are optional and may not be included in your Kalypso system. The slots on the rear of the Video Processor frame are numbered from right to left.

Figure 32. Fully Equipped Kalypso Classic Video Processor Frame, Rear View



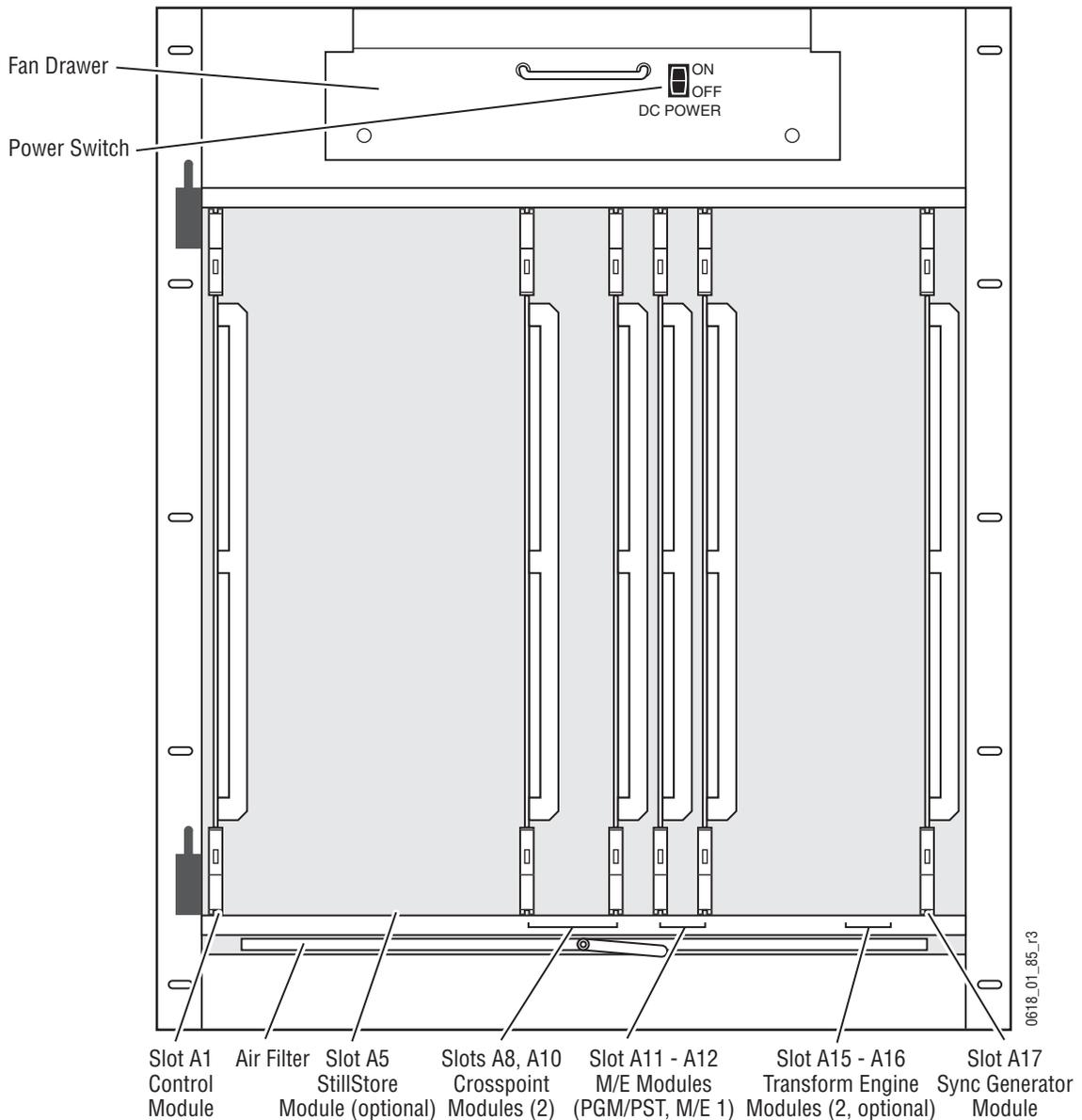
The Kalypso system has been designed for easy maintenance. All modules of the same type are identical, and can be swapped with one another. Modules can be removed and replaced safely with the power on, simplifying troubleshooting to the module level.

2-M/E Kalypso Classic Video Processor Frame

The 2-M/E Kalypso Classic system uses the same frame hardware as the 4-M/E Kalypso system, except some slots are not filled in the standard configuration. Because only two M/Es are standard (M/E 1 and PGM PST), only two M/E modules and two crosspoint modules are provided (Figure 33).

The 2-M/E Kalypso system supports the Still Store and Transform Engine options, and up to two additional M/E modules can also be added.

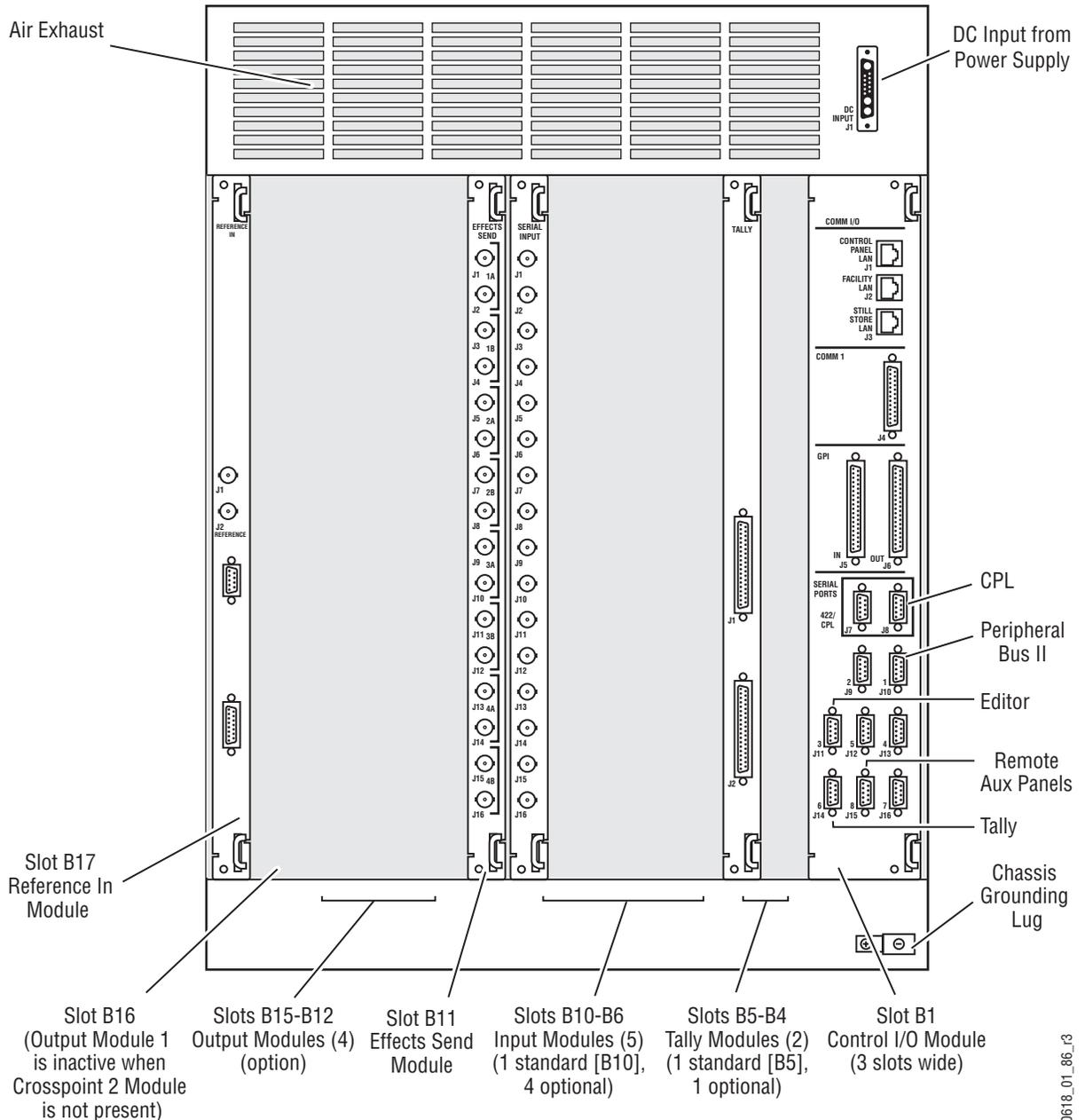
Figure 33. Standard 2-M/E Kalypso Video Processor Frame, Front View



CAUTION The front door of the Kalypso Video Processor must remain closed during normal system operation for proper cooling airflow.

The standard 2-M/E Kalypso system includes one Input module and the Effects Send module to support video inputs and outputs (Figure 34). Up to four additional Input and Output modules can be installed. Slot B16 (labeled on the frame as Output 1, 1-8) is not available for use on a standard 2-M/E Kalypso system.

Figure 34. Standard 2-M/E Kalypso Video Processor Frame, Rear View



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Kalypso Classic M/E Module Control Assignments

Table 1 shows how the Main panel banks are assigned to M/E modules in a factory configured Kalypso Classic Video Processor frame.

Table 1. Banks and M/E Module Locations

Bank	Video Processor Frame Slot	
	4-M/E	2-M/E
PGM PST	A 11	A 11
M/E 1	A 12	A 12
M/E 2	A 13	-
M/E 3	A 14	-

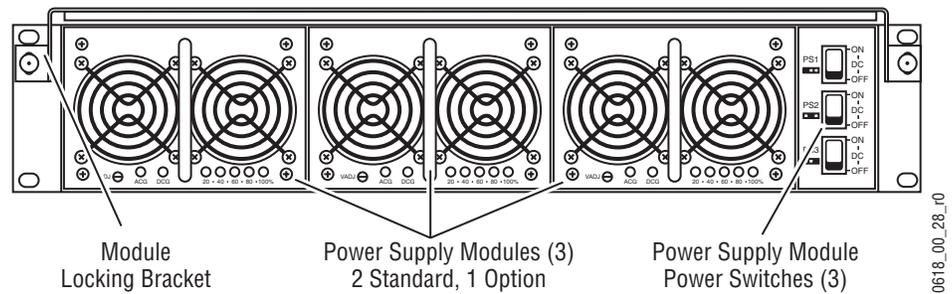
2-M/E Kalypso Classic systems ship with only two M/E modules standard, for control by the PGM PST and M/E 1 banks. Adding M/E modules in the slots listed allows delegated control of the added M/Es. An additional Crosspoint module in slot A9 is also required.

Note The Resource Sharing feature permits the logical assignment of any Main panel bank to any physical M/E.

Kalypso Video Processor Power Supply

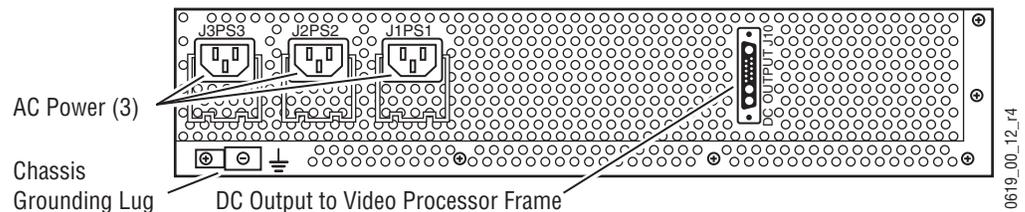
A separate Video Processor Power Supply provides power to the Kalypso Video Processor. The same type of power supply is used by Kalypso Classic and Kalypso HD systems. The Video Processor Power Supply frame holds up to three Video Processor Power Supply modules (Figure 35). Two modules are required for system operation. The third module is an optional backup. A locking bracket can be slid down to secure the modules in their slots. A locking bracket can be slid down to secure the modules in their slots.

Figure 35. Kalypso Video Processor Power Supply, Front View



Power connectors are located on the rear of the Video Processor Power Supply (Figure 36), including a special connector for feeding power to the Video Processor. Each module has its own power connection. Though not required, we recommend each module be plugged into a separate AC circuit.

Figure 36. Kalypso Video Processor Power Supply, Rear View



Video Processor Frame Options

Still Store Option

The Kalypso Still Store is used to grab, save, and display images. Still Store features include:

- Instant access to non-volatile stills (fixed names “Still 1”, “Still 2”, etc.),
- Up to 1800 full frame images,
- Full frame grab,
- Partial frame (fenced) grab
- Image positioning and cropping,
- Animation,
- Display entire frame, or each field with either field interpolation or replication,
- Video key pairs,
- Grabbed images automatically saved to hard disk on Still Store module,
- Eight outputs that can be used independently,
- Preview bus shows Still Store output #8,
- E-MEM control of still output loading, and
- Machine Control subpanel control of still output loading.

An additional KlipCache memory option is also available to increase the storage capacity of the Still Store cache.

Sources to be captured are selected on the Local Aux panel. That source can then be grabbed, repeatedly if necessary until the desired image is caught. The captured image is then saved to the Still Store hard disk. Any still image can be assigned to any of the eight Still Store outputs. These outputs are internal Kalypso system sources, which can be mapped to any desired source select buttons.

Transform Engine Option

The Kalypso Transform Engine option provides 3-D planar image translation and transformation from within the Kalypso system. Each Transform Engine module houses three Transform Engines. Up to two Transform Engine modules can be installed in a Kalypso system, permitting manipulation of six video and key pairs at the same time. A Global channel is also available on each M/E for easy control of complicated transforms. The Kalypso system uses its Effects Send feature to supply translation and transformation capabilities to any keyer on any M/E.

Transform Engine features include:

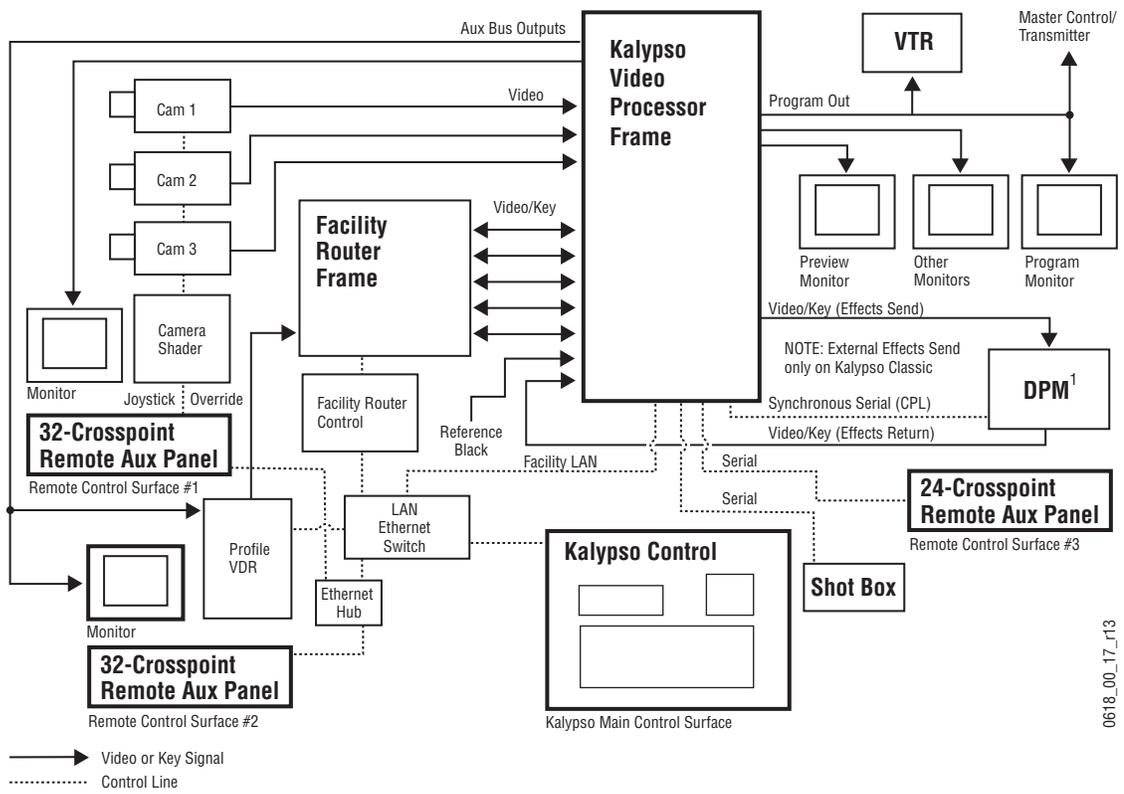
- Source and Target space selection,
- 3-D Locate, Size Locate, Rotate, Spin, Locate Axis,
- Anti-alias filtering control through transform parameters,
- Aspect, Skew, Perspective,
- Post Transform,
- Global channel on each M/E and PGM PST, to which the Transform Engine channels in that M/E can be individually assigned,
- Raster Cropping,
- E-MEM keyframe control,
- Near/Far & Front/Back, with horizontal and vertical reverse selection, and
- Tally (performs on screen/off screen and front/back calculations to tally only on air images).

An additional software enabled Kurl/Splits and Mirrors Transform Engine optional feature is also available.

Kalypso Facility Example

A simplified diagram of a small live studio is shown in Figure 37. In this facility the Kalypso Video Production Center has control of a portion of the facility router for pre-selecting various sources into the switcher. The camera control operator is able to remotely control a Kalypso Aux bus for selecting camera views to shade. A Profile VDR operator also remotely controls an Aux bus for recording selected iso cameras. After the clips have been recorded to the Profile, the Technical Director at the Kalypso Main panel can select and roll the Profile clips from his location. This facility also has a Krystal DPM system configured for Effects Send. The Technical Director can recall and run DPM effects from the Kalypso Main panel.

Figure 37. Basic Live Production Studio System Configuration Example



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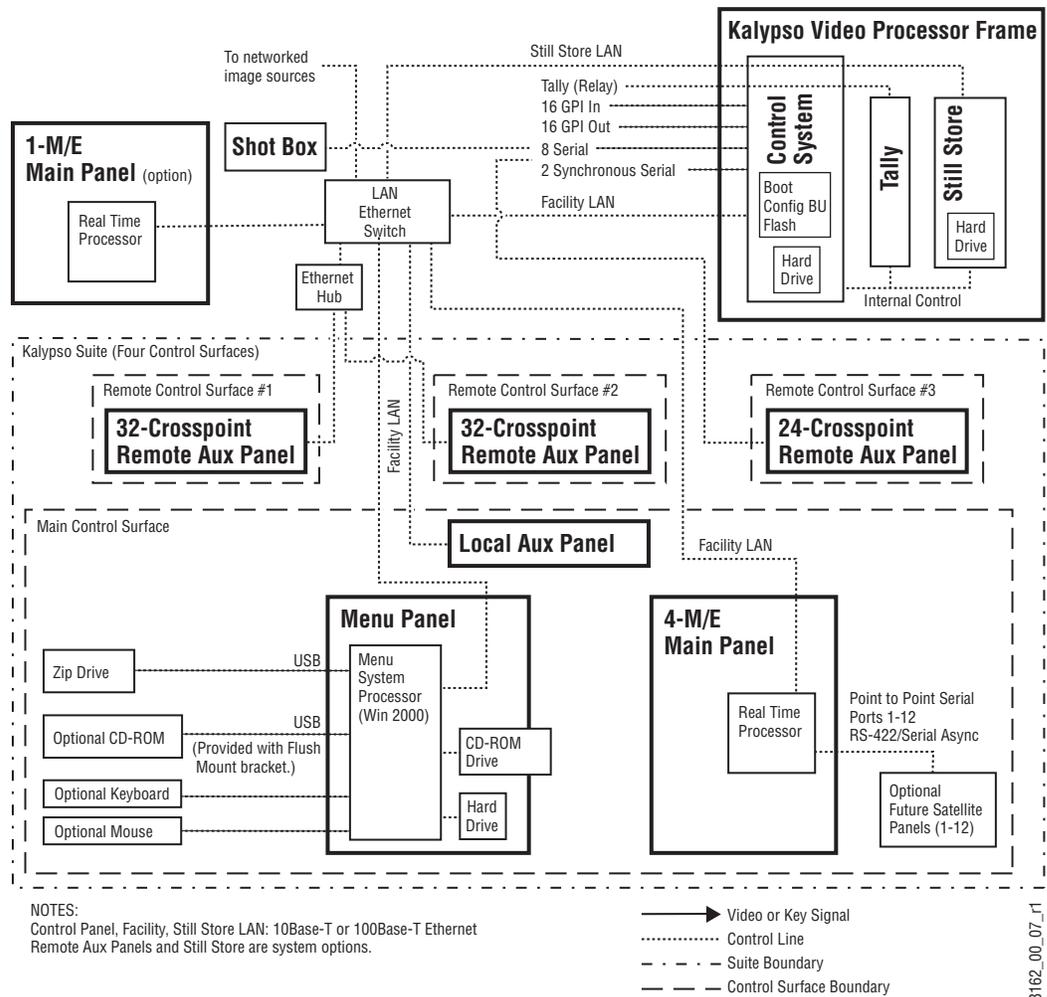
Functional Overview

Kalypso System Control

System control for the Kalypso Video Production Center is designed for flexibility and simplicity. Ethernet and other standard data interfaces are used for system component interconnections. Multiple hard disks are included to permit storage of large numbers of data files. A Windows OS drives the Menu panel touch screen, which is an SVGA monitor.

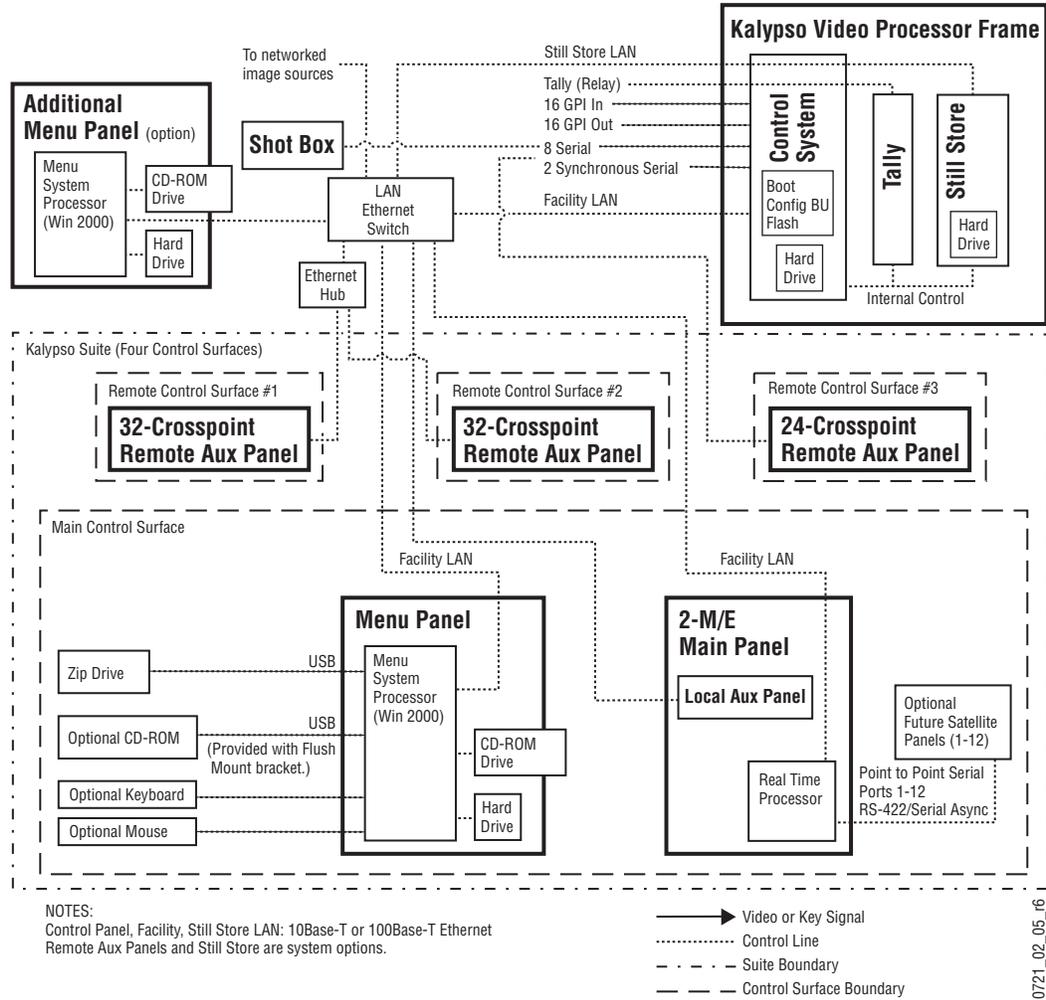
Late model 4-M/E Kalypso system control is shown in [Figure 38](#).

Figure 38. Late Model 4-M/E Kalypso Control



Late model 2-M/E Kalypso system control is the same as the 4-M/E Kalypso system, except the Local Aux panel is built into the 2-M/E Main panel (Figure 39).

Figure 39. Late Model 2-M/E Kalypso Control



Early model Kalypso system control is shown in Figure 40 (4-M/E system) and Figure 41 (2-M/E system).

Figure 40. Early Model 4-M/E Kalypso Control

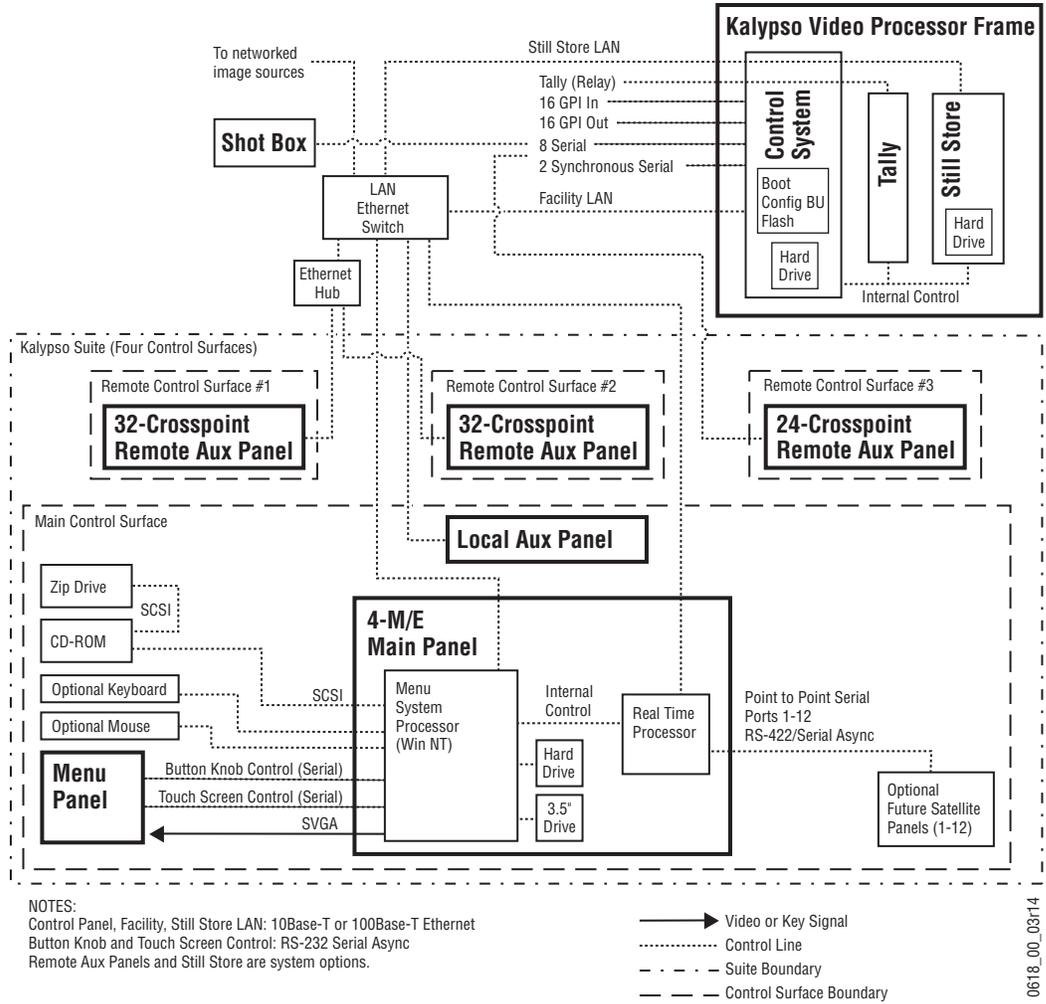
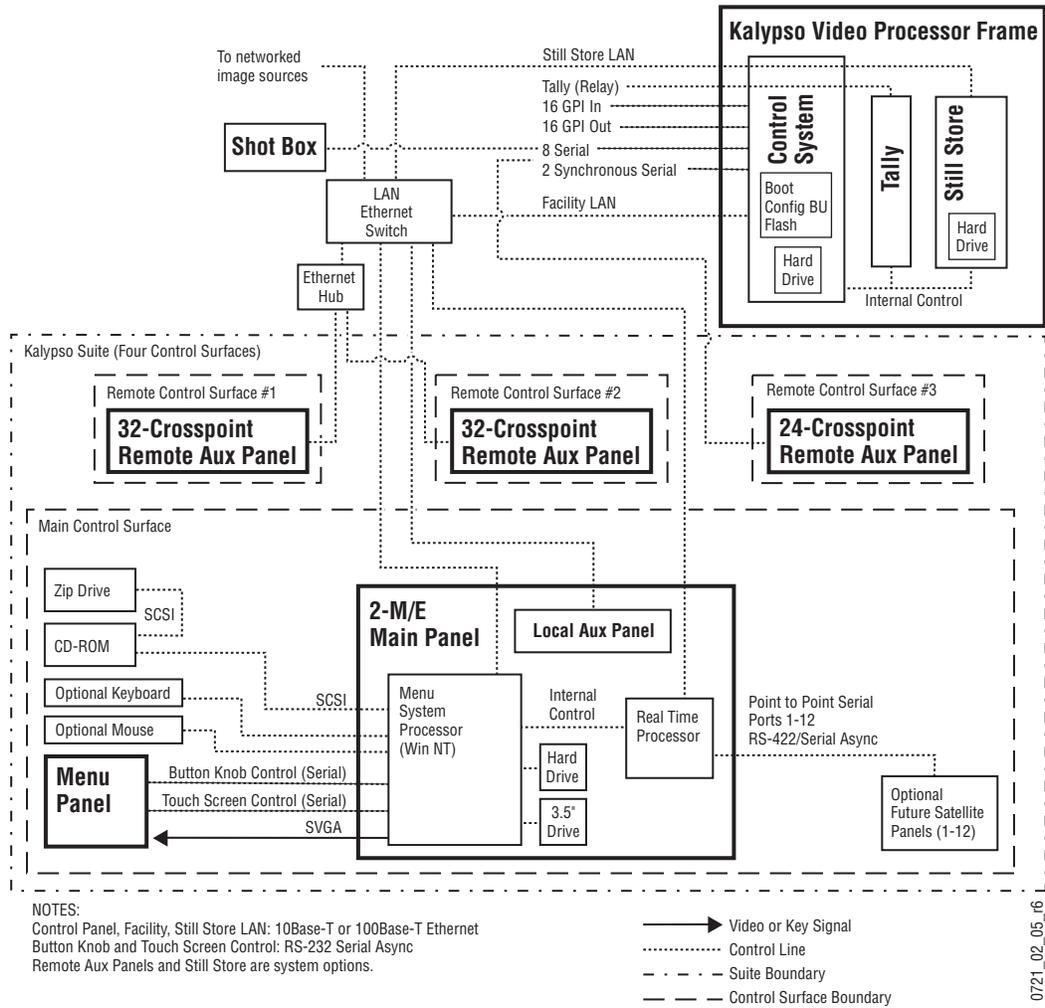


Figure 41. Early Model 2-M/E Kalypso Control.



Video Signal Flow

The Kalypso Video Production Center has been designed for operational flexibility. This is reflected in the basic system architecture. For example, all the outputs from every M/E are routed back to the video crosspoint matrix, making all these signals accessible to the entire system (see [Figure 42](#) and [Figure 43](#)). The only exception is Effects Send, where the outgoing signal is routed directly to its internal or external destination.

The Kalypso system does not have any dedicated inputs or outputs (except Black and Test outputs on Kalypso Classic systems). The inputs and outputs of the system can be assigned as needed. For example, after defining the program, preview, and any other necessary signal outputs, all the remaining outputs can be configured as Aux buses.

Kalypso Classic System Signal Flow

Figure 42. Simplified Kalypso Classic Video Flow Diagram (part 1)

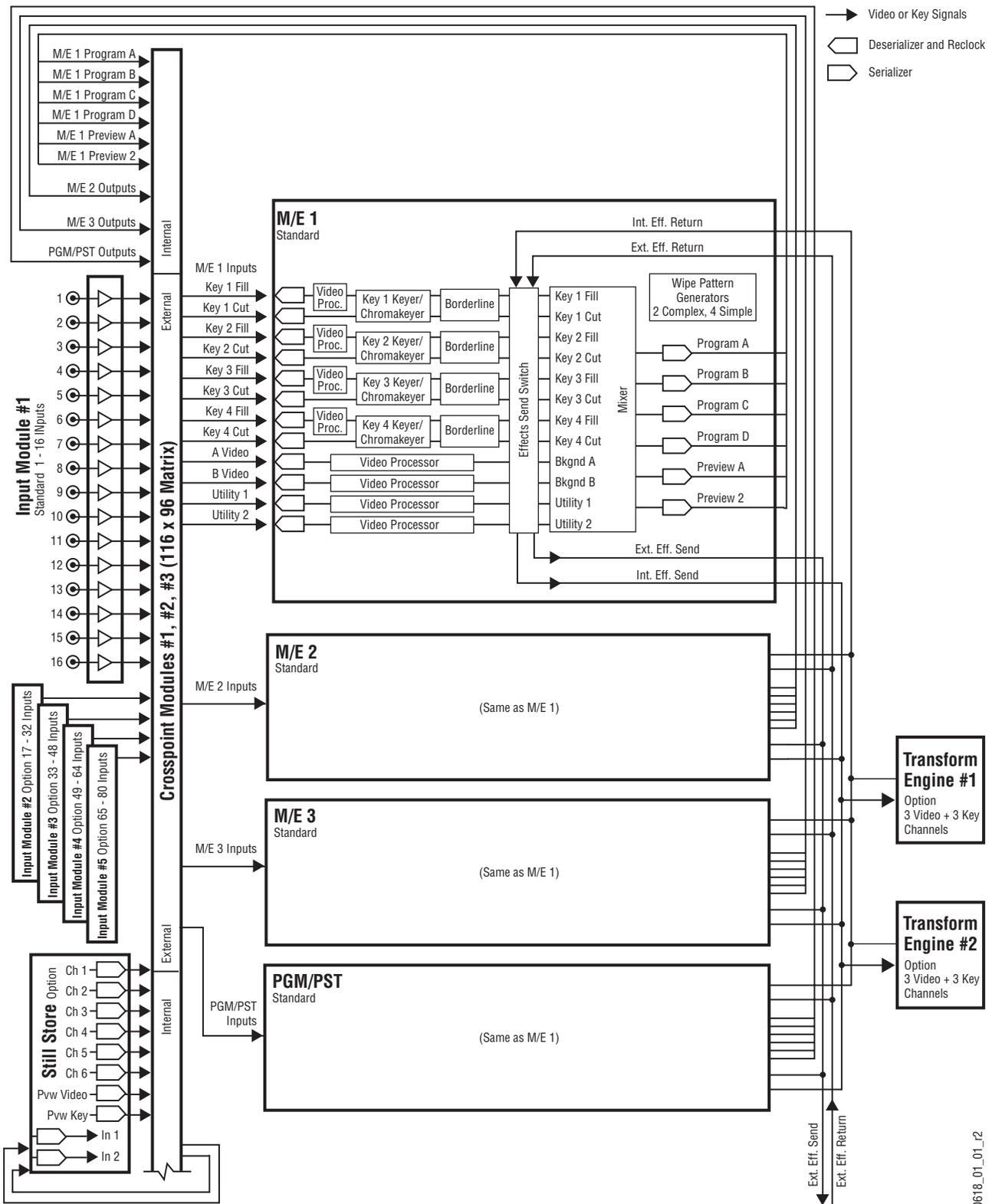
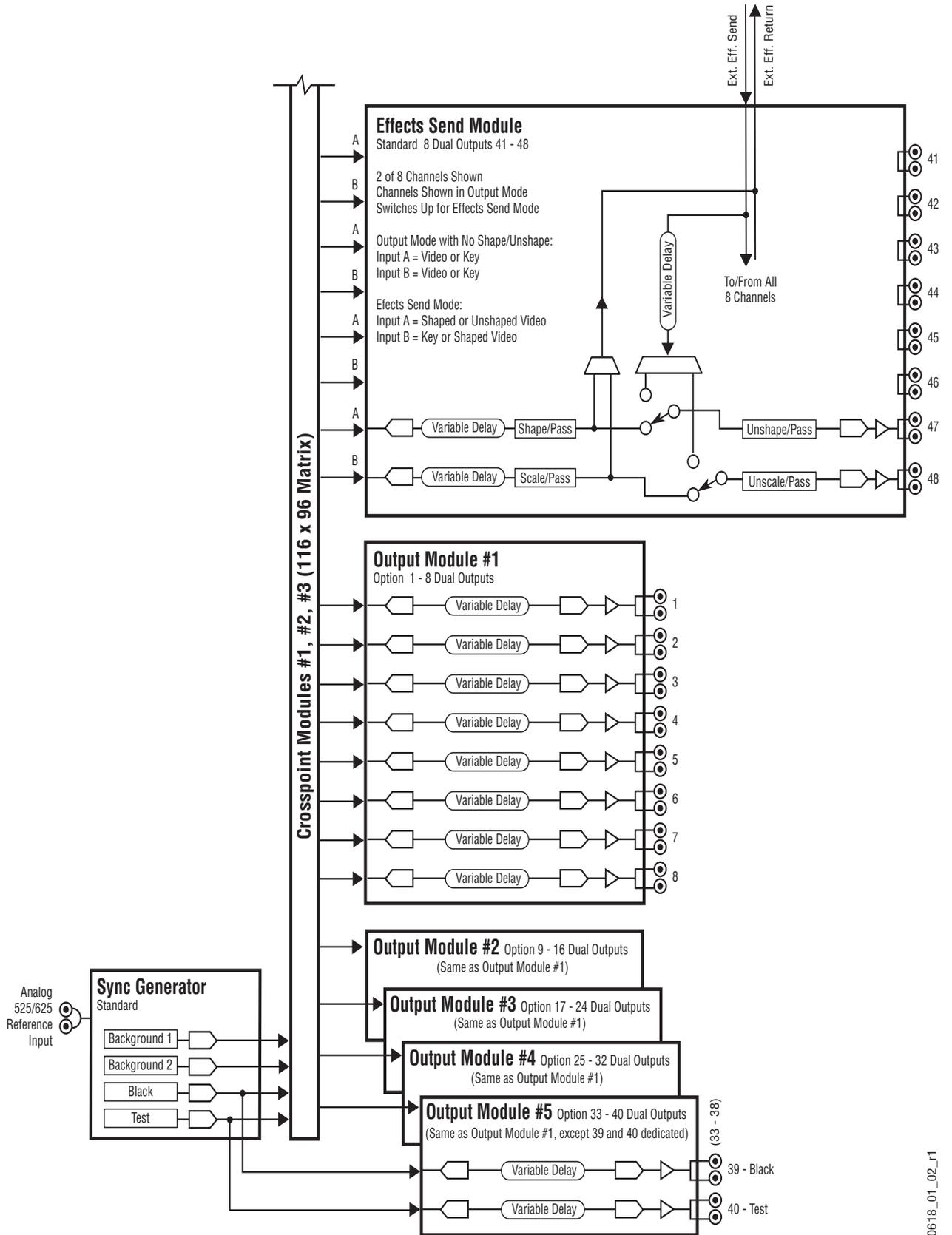


Figure 43. Simplified Kalypso Classic Video Flow Diagram (part 2)



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Installation

This section describes the installation and setup of Kalypso hardware. Software installation and configuration is described in [Section 3-Configuration](#).

Note Detailed procedures in this section apply to the installation of late model Kalypso systems equipped with an Enhanced Menu panel. Refer to [page 139](#) if you are installing an earlier model Kalypso system.

Pre-Installation Procedures

Before you physically install the Kalypso system, familiarize yourself with the tools required, physical specifications, and safety and power requirements covered in this section.

System Survey

Check all parts received against the packing list enclosed with your shipment, and examine the equipment for any shipping damage. Immediately report any missing or damaged items to the carrier and to your Grass Valley Service Representative.

Line Voltage

Kalypso components utilize autoranging power supplies which accommodate all facility supply voltages. No switch settings are required, nor are any possible.

Required Tools

The following tools are required for installation, but are not supplied:

- Medium flat blade screwdriver,
- Medium Philips cross head screwdriver,
- #10, #15, & #20 Torx screwdrivers, and
- 1/4 inch Hex driver.

Customer Supplied Equipment

All Ethernet hardware and cabling is to be supplied by the customer. Note that an Ethernet switch (not a hub) is required for Kalypso system operation.

Safety Requirements

To prevent injury or equipment damage, read, understand, and follow all installation safety precautions.

WARNING The Video Processor frame weighs approximately 72.57 kg (160 lb). Provide appropriate equipment to support the frame during installation.

WARNING Electrical potential is still applied to some internal components even when power to the frame is off. To prevent electrical shock when working on this equipment, disconnect the AC line cord from the AC source before working on any internal components. Residual voltage may be present immediately after unplugging the system; wait thirty seconds to allow capacitors to discharge before working on the system.

CAUTION To avoid static damage to sensitive electronic devices, protect the Kalypso system from static discharge. Avoid handling frame modules in a high static environment. Use a grounding strap when handling modules, and touch the frame before you remove any modules.

Installation Tasks

After completing the Pre-Installation procedures, installation tasks should be completed in the following order:

1. Unpack the equipment.
2. If desired, perform a bench test to ensure that the major system components are operational (see [page 63](#)).
3. Install the Kalypso Video Processor frame ([page 75](#)), Video Processor Power Supply ([page 88](#)), and any Video Processor frame hardware options (modules) that are not already installed in the frame ([page 86](#)).
4. Install the Kalypso Main panel ([page 90](#)).
5. Install the Kalypso Menu panel ([page 111](#)) and removable media Zip drive ([page 119](#)).
6. On 4-M/E Kalypso systems only, install the Local Aux panel ([page 124](#)).
7. Connect control (Ethernet) equipment and cables ([page 129](#)).

8. If necessary, configure Ethernet IP addresses (see [page 148](#)).
9. Connect cables to video inputs and outputs ([page 133](#)).
10. Connect the Kalypso system equipment power cables.
11. Test power, system communications, and basic system operation.
12. Install and test any Main panel options ([page 99](#)).
13. Connect cables for any external interfaces, configure the external interfaces, and test them for proper operation (see [External Interfaces on page 365](#)).

After installation, additional configuration steps are required to make the Kalypso system fully operational for your facility (see [Configuration on page 145](#)).

Bench Test

It is wise to do a preliminary test before installing system components at their final locations. It is easier to diagnose and correct problems if the components are in close proximity. This bench test ensures that the major components power up, communicate with one another, generate video signals, and pass video from an input to an output.

Materials Required

To perform this bench test you will need the following:

- Serial digital signal source (signal generator or video source),
- House reference analog black signal,
- Serial digital picture monitor,
- Two 75 Ω video cables and a 75 Ω terminator,
- Standalone Ethernet switch with four or five ports (fifth port used for the Still Store option)
- Four or five Ethernet Category 5 cables (fifth cable used for the Still Store option).

Note Known good condition Category 5 cables must be used. Using second-hand cables with an unknown history will compromise test validity.

Bench Test Procedure

Note This test uses Kalypso system default IP addresses and should be performed in isolation from any existing facility LAN.

1. Unpack the Video Processor frame, Video Processor power supply, Menu panel, and the Local Aux panel (2-M/E systems do not have a separate Local Aux panel). Ensure all fan vents are fully exposed and all units are disconnected from any power sources.
2. Ensure all the boards in the front bay of the Video Processor frame are properly seated.
3. Ensure the power supply modules in the Video Processor power supply are properly seated.
4. Connect the supplied multi-pin DC power cable from the Video Processor frame to the Video Processor power supply.
5. Connect Cat 5 straight-through Ethernet cables from open ports on the Ethernet switch to each of the following locations (see [Figure 44](#) and [Figure 45](#)).
 - Main panel (the upper port of two),
 - Menu panel (LAN),
 - Local Aux panel (on 2-M/E systems the Local Aux panel LAN connector is located on the upper rear of the Main panel),
 - Video Processor frame Facility LAN (J2, the middle port of three), and
 - If equipped with the Still Store option, Video Processor frame Still Store LAN (J3, the bottom port of three).

Note that in an actual installation additional cabling is required (refer to [Figure 107 on page 127](#) and [Figure 108 on page 128](#)).

Figure 44. Kalypso 4-M/E Bench Test Ethernet Cabling

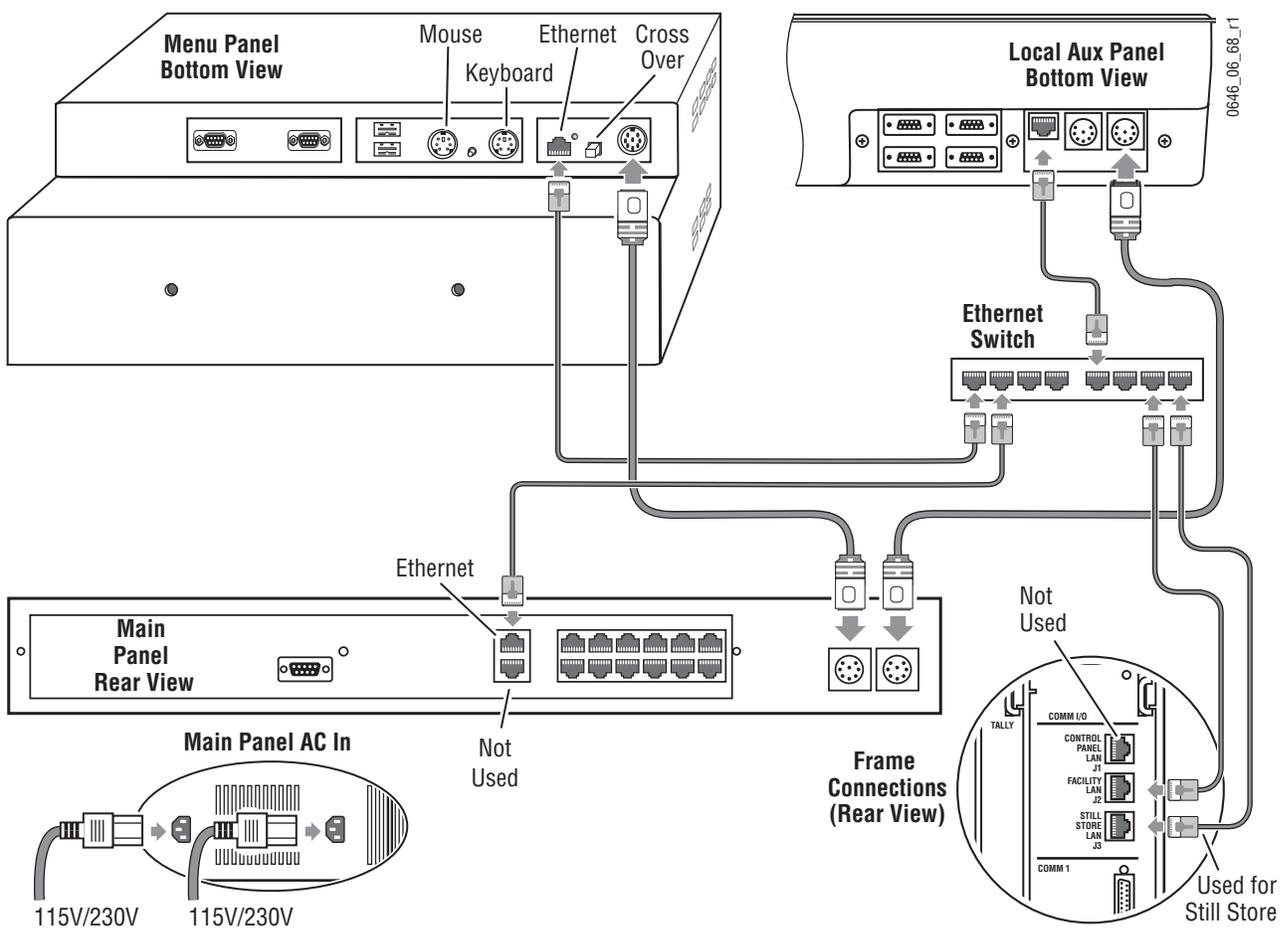
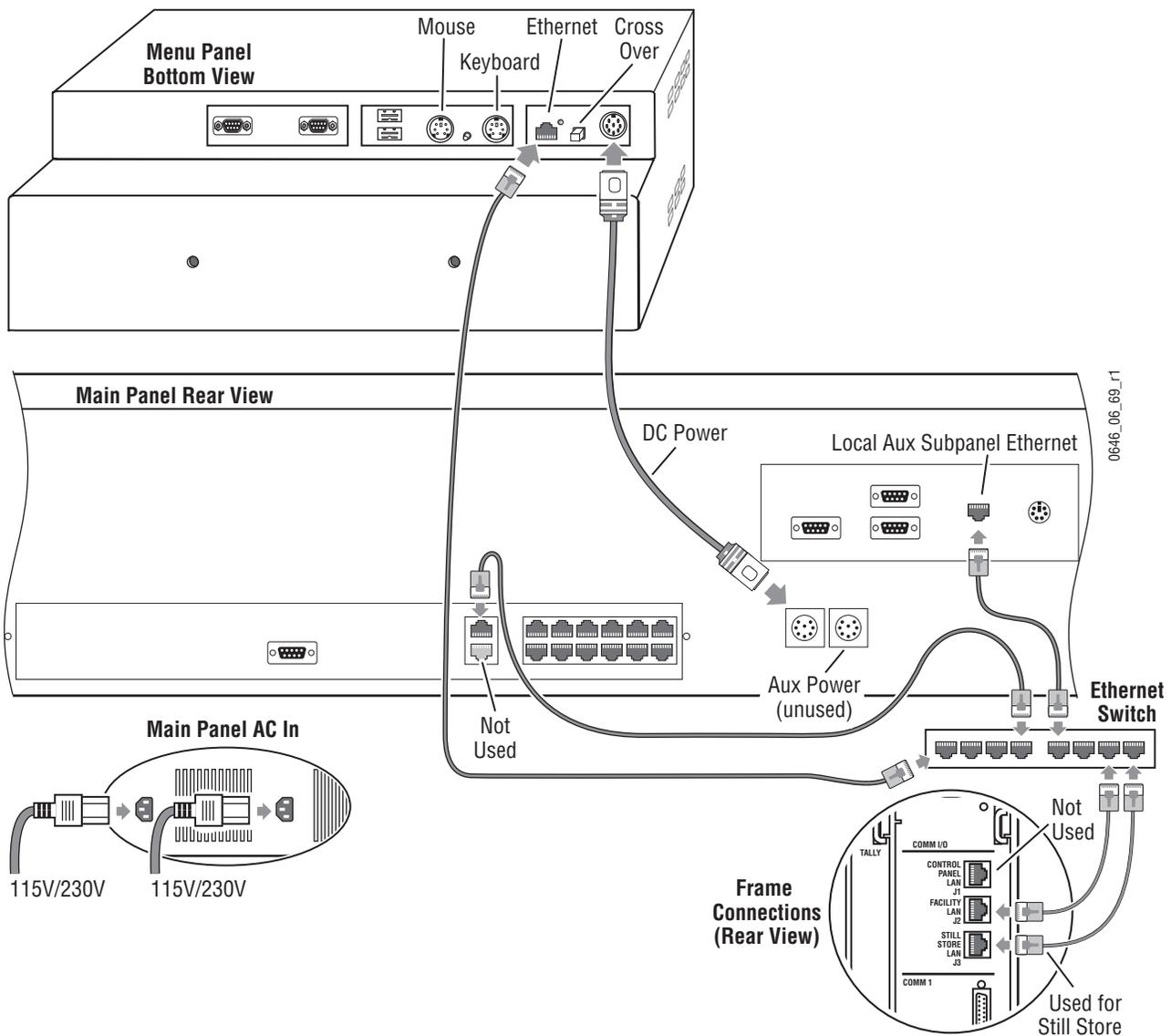


Figure 45. Kalypso 2-M/E Bench Test Ethernet Cabling



6. Power up the Ethernet switch and ensure its basic operating indicators illuminate. Because the rest of the system is not yet operational no LAN activity will be reported.
7. Connect the supplied 8-pin DIN power cable from the Main panel to the Menu panel.
8. On 4-M/E systems, connect the supplied 8-pin DIN power cable from the Main panel to the Local Aux panel.
9. Plug in all the AC power cables to the Video Processor power supply (Figure 60 on page 89). The ACG (AC Good) LEDs on the front of each power supply module should illuminate, indicating AC power is present.

10. Turn on all the power supply modules (see [Figure 61 on page 89](#)).
11. Open the front door of the Video Processor frame and turn on its power switch (see [Figure 55 on page 76](#)). With the power supply modules and the frame switches on, ensure the DCG (DC Good) power indicators on the front of each power supply module illuminates and the fans spin.
12. Open the Main panel and turn on the Primary and (if present) Redundant power supply switches (see [Figure 122 on page 146](#)). Ensure the Main panel power indicators illuminate and the fans spin. Allow the system to boot up completely.
13. The Main panel feeds power to the Menu panel and Local Aux panel. Ensure these devices power up along with the Main panel.
14. On the rear of the Menu panel a LAN indicator LED should be illuminated, indicating a physical Ethernet connection exists. If this indicator is not on, press the Crossover button next to the port to reverse the sense of the cable (see [Figure 44](#) or [Figure 45](#)). This should illuminate the LED if it was not on.
15. Default IP addresses assigned at the factory allow the system to operate in a stand-alone environment. If a **No Communication With Frame** message appears on any device, a LAN problem probably exists. Check the LAN cable connections and the operational status of the Ethernet switch.

16. The Menu panel should now display the Kalypso splash screen (Figure 46). This confirms the Menu panel is running the Kalypso software.

Figure 46. Kalypso Splash Screen



17. Touch the **Home** button on the top line of the touch screen to bring up the Home menu (Figure 47).

Figure 47. Kalypso Home Menu



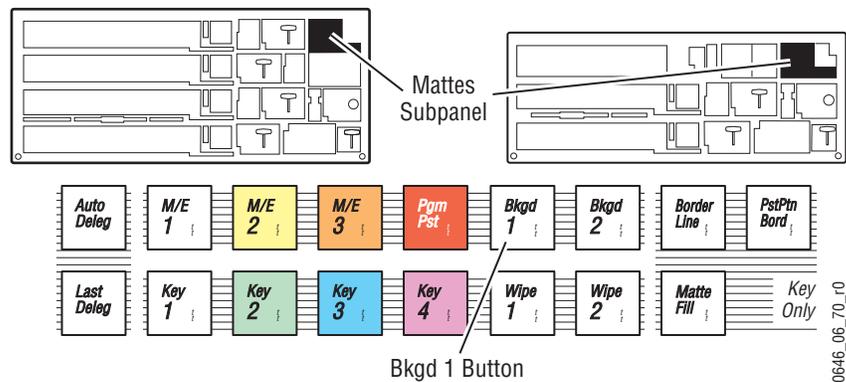
18. Touch the **Status & Diags** button to go to the Versions menu (Figure 48). The software reported for each system component should be the latest version, and all the versions should be the same (if the Still Store option is not installed its version will be blank). This confirms the correct Kalypso software is loaded on all system components.

Figure 48. Kalypso Versions Menu



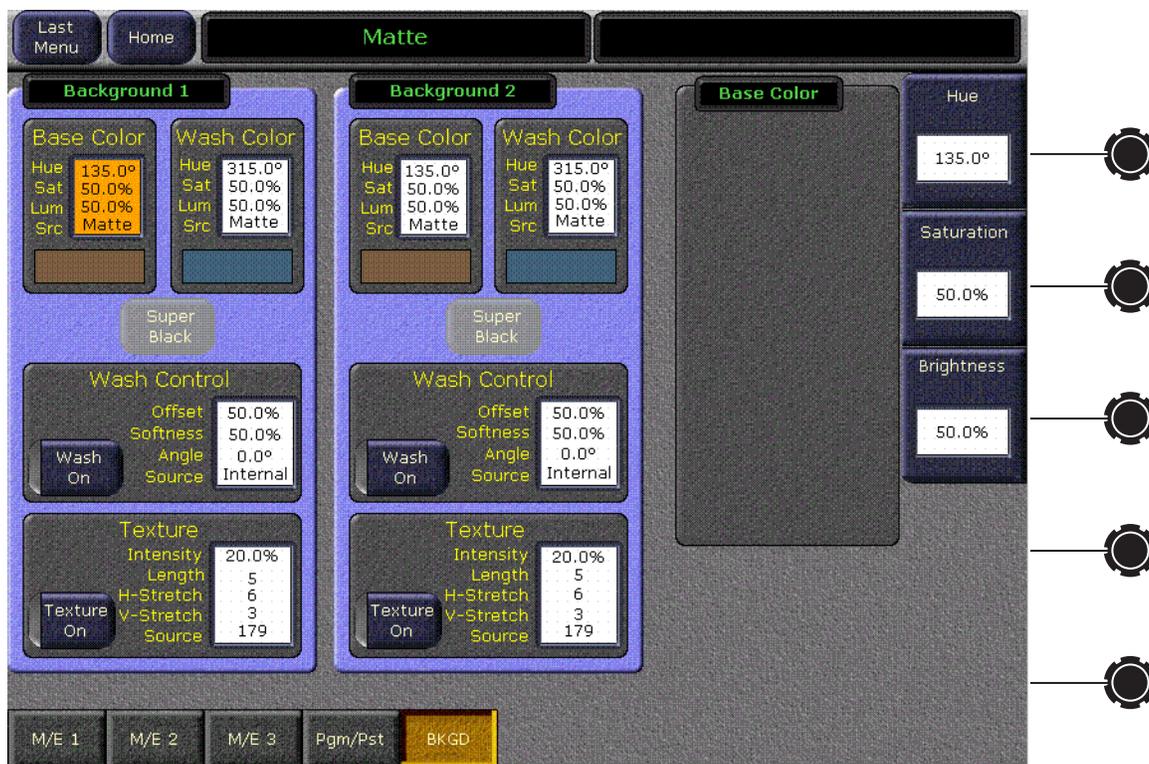
19. Locate the **Bkgd 1** button on the Main panel in the Mattes subpanel (Figure 49).

Figure 49. Bkgd 1 Button Location



20. Press the **Bkgd 1** button twice rapidly (double press). The Menu panel touch screen should change to the Matte menu (Figure 50). This confirms communication between the Main panel and Menu panel.

Figure 50. Kalypso Matte Menu



21. The Local Aux panel should have one source selection button on each bank illuminated. Press a different source selection button. The button you pressed should illuminate. This confirms the Local Aux panel is communicating with the Video Processor frame.

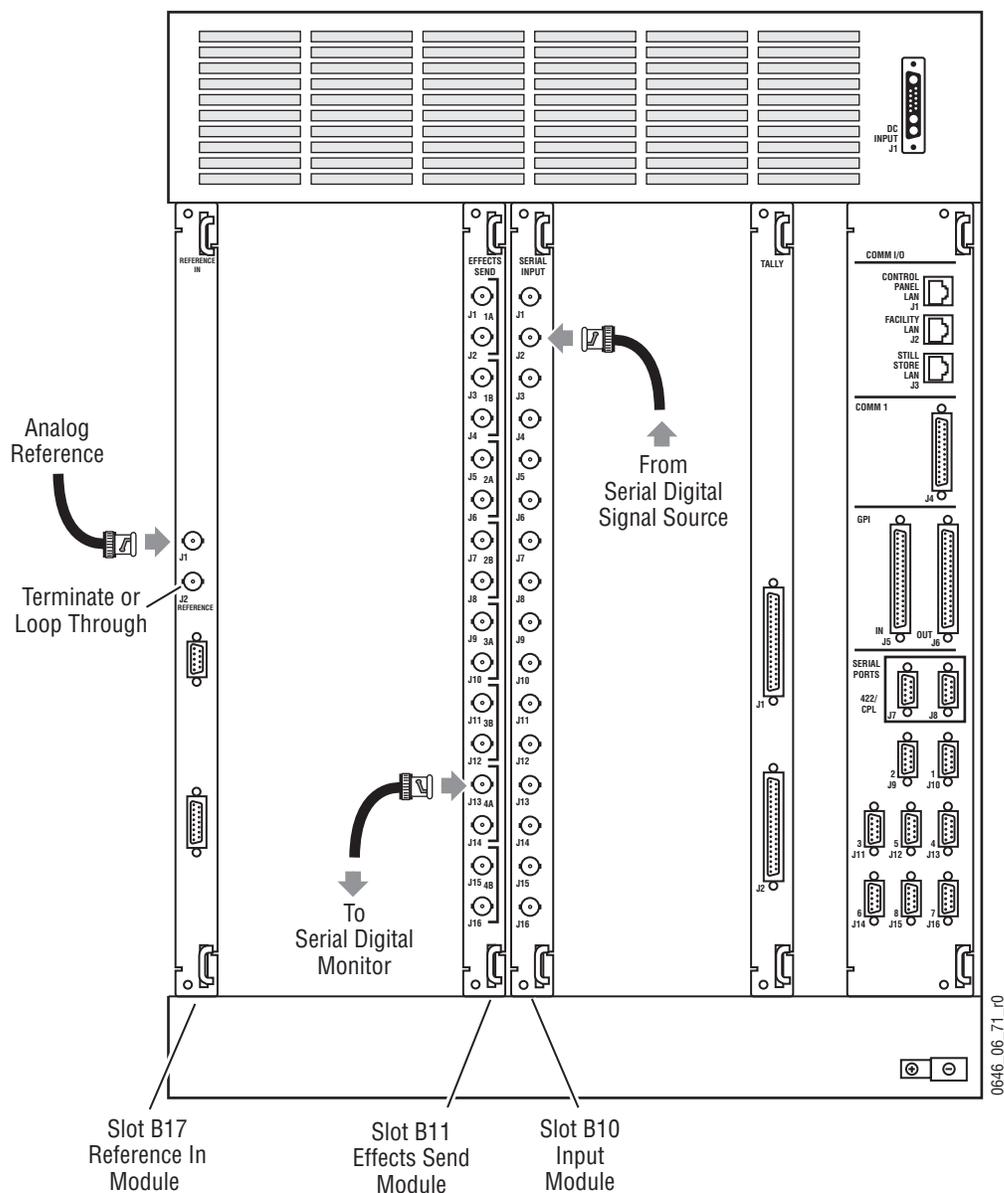
22. If your system is equipped with the Still Store option, go to the Still Store menu on the Menu panel. Touch the menu title on the left of the top line of the touch screen to return to the Home menu, touch the Menu panel **Still Store** button, then touch the **Cache** menu selection button at the bottom of the touch screen. In the center of this menu the Cache Usage pane should report either 109 or 1815 Total Cache Pages (Figure 51). If either number is reported in this menu the Still Store is communicating properly.

Figure 51. Kalypso Still Store Cache Menu



23. The following video signal cables need to be connected to the rear of the Video Processor frame (Figure 52):
 - Connect an analog reference signal to J1 of the Reference In module (Slot B17), and loop through or terminate J2.
 - Connect a serial digital monitor to J13 (Output #47) of the Effects Send module (slot B11) at the rear of the Video Processor frame. By default this is the PGM PST bank Program A output.
 - Connect a known good serial digital video source to J2 (Input #2) on Input Module 1 (slot B10) at the rear of the Video Processor frame. By default this input maps to the second source selection button.

Figure 52. Bench Test Video Connections

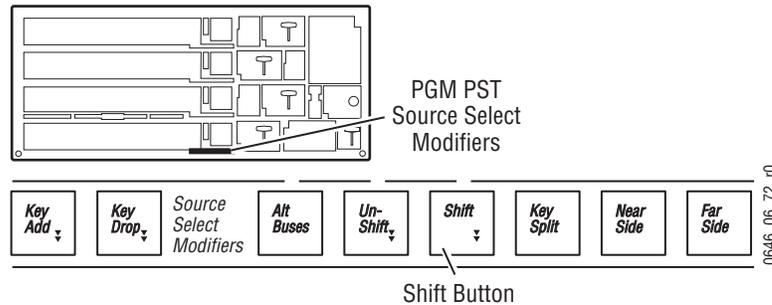


Note Your Kalypso system may have additional I/O modules installed. This bench test only uses the standard modules provided with all systems.

24. Move the transition lever arms on all M/Es to either limit (all the way up or down).
25. The Kalypso system should have come up with the left most source selection button illuminated on all banks, which by default is black. If it is not selected, do so now. Black should appear on the monitor.

26. Hold down the **Shift** button for the PGM PST bank (Figure 53), and press the left most source select button. This shifted source selection is by default a test signal, which should appear on the monitor. This confirms the system is generating and outputting video.

Figure 53. PGM PST Shift Button Location



27. Press the right most source select button on the A bus of PGM PST bank. This is by default the **Bg 1** matte signal, which should appear on the monitor. Return to the Matte menu by double pressing the **Bkgd 1** button (refer to Step 20). You should now be able to change the color of the matte with the top **Hue** knob on the right side of the Menu panel. This confirms you can control video generated by the system.
28. Press the second to the left button on the A bus of the PGM PST bank (by default this button is labeled **2**). You should see the source you connected to J2 on slot B10 on your monitor. This confirms the system passes video from input to output.

This concludes the bench test. If you encountered any problems contact Grass Valley Customer Service to resolve the issue before you proceed with your actual system installation.

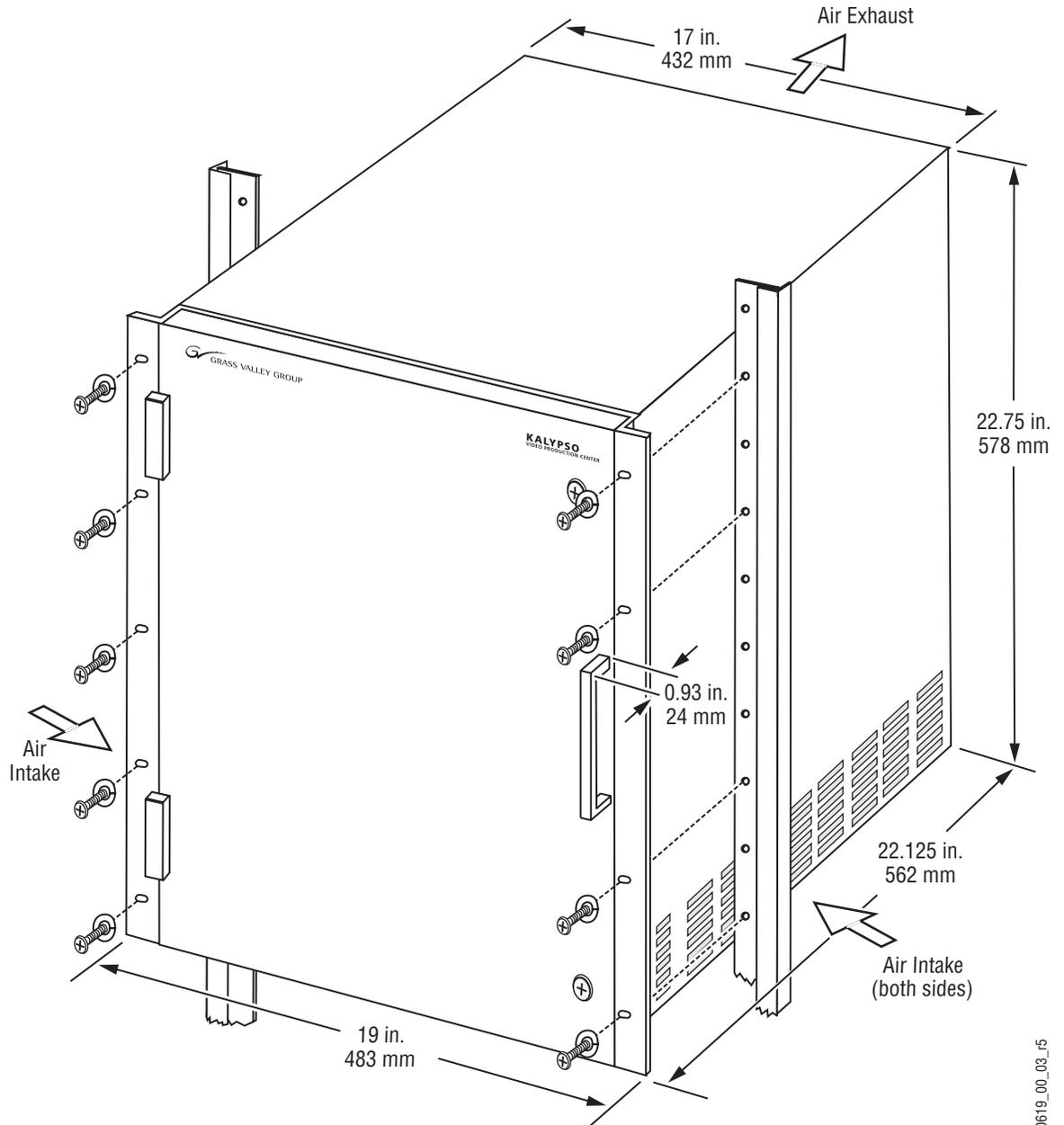
Bench Ethernet Configuration

With the Kalypso system powered up and operational using default settings, now is a good time to re-configure your Ethernet communications if this is necessary for your facility. After re-configuration, you will be able to connect the Kalypso system to your facility network and confirm the settings are compatible. See [page 129](#) and [page 148](#) for more information.

Video Processor Frame Installation

The Kalypso Video Processor frame is a 13 rack unit chassis which mounts in a standard 483 mm (19 in.) rack (Figure 54). It has a built-in cooling system consisting of a fan/plenum mounted in the upper section of the frame, and an air filter in the lower section. Cooling air is drawn in at the lower sides of the frame, up through the filter and modules, then expelled out the back of the fan/plenum unit.

Figure 54. Video Processor Frame Rack Installation



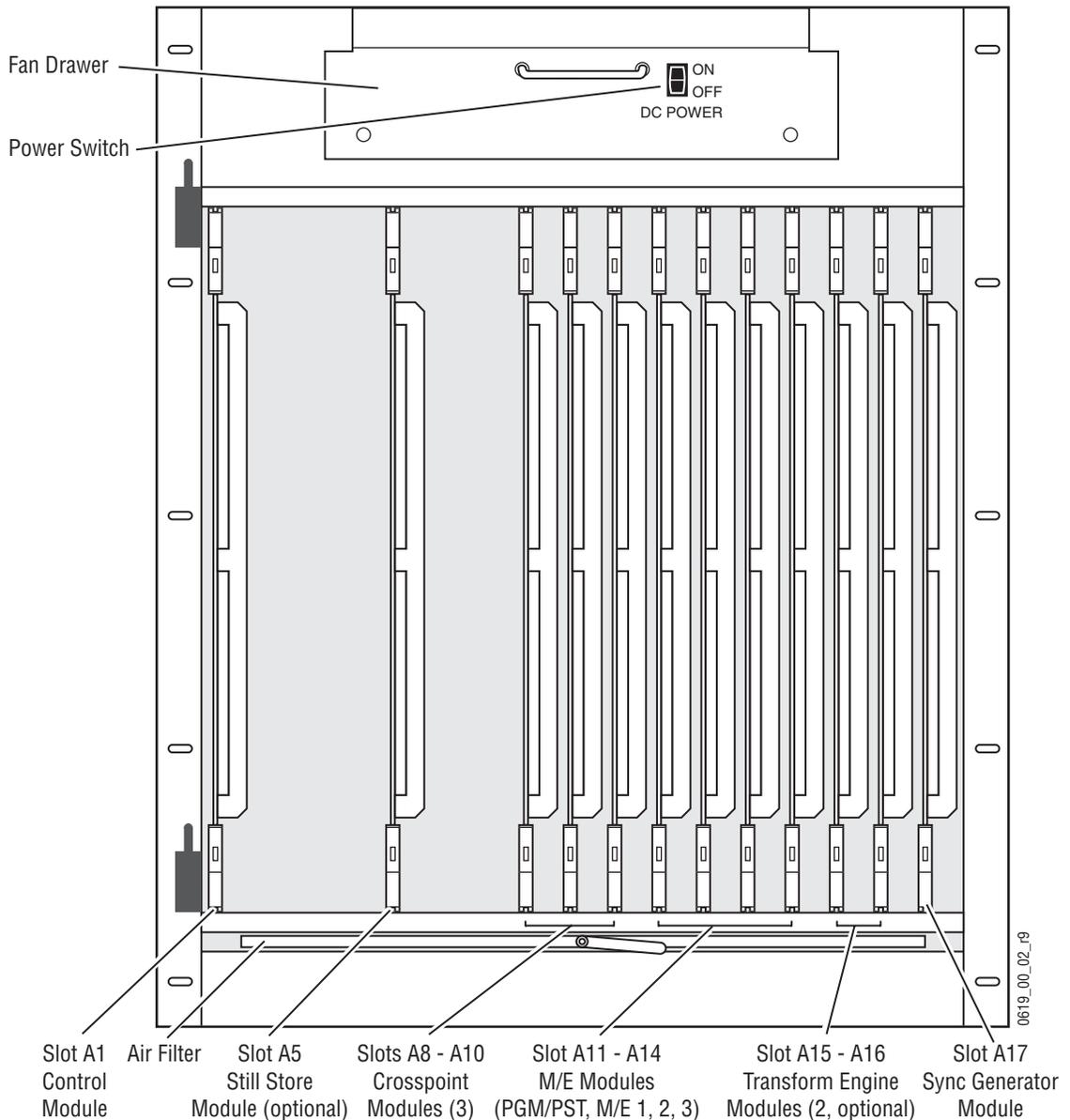
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The Kalypso Video Processor frame has front and rear bays. The front bay provides access to the Fan Drawer, Air Filter, and removable modules such as the Control, Sync, Crosspoint, and M/E modules. The rear bay holds video and control I/O modules. The Video Processor frame slots in 4-M/E and 2-M/E systems are filled differently (see [Figure 55](#) through [Figure 58](#)).

4-M/E Video Processor Frame

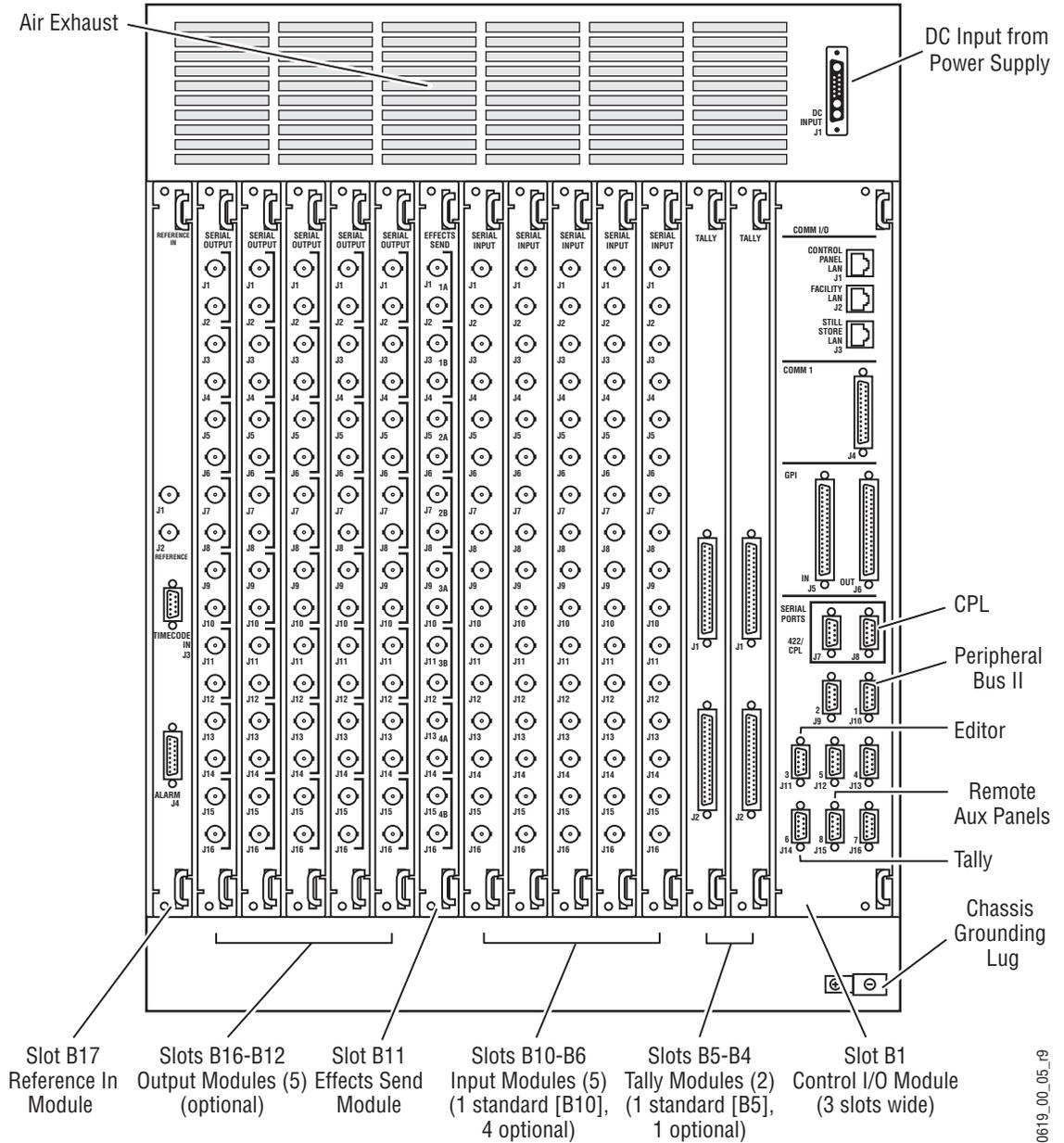
CAUTION For clarity, the Video Processor frames are shown with the front door removed. The front door must remain in place and closed during normal system operation to maintain maximum cooling efficiency.

Figure 55. Fully Equipped 4-M/E Kalypso Video Processor Frame, Front View



Power, control, and video connections are made at the rear of the Video Processor. Figure 56 shows a fully loaded rear bay. Some of the modules shown are optional and may not be included in your system configuration.

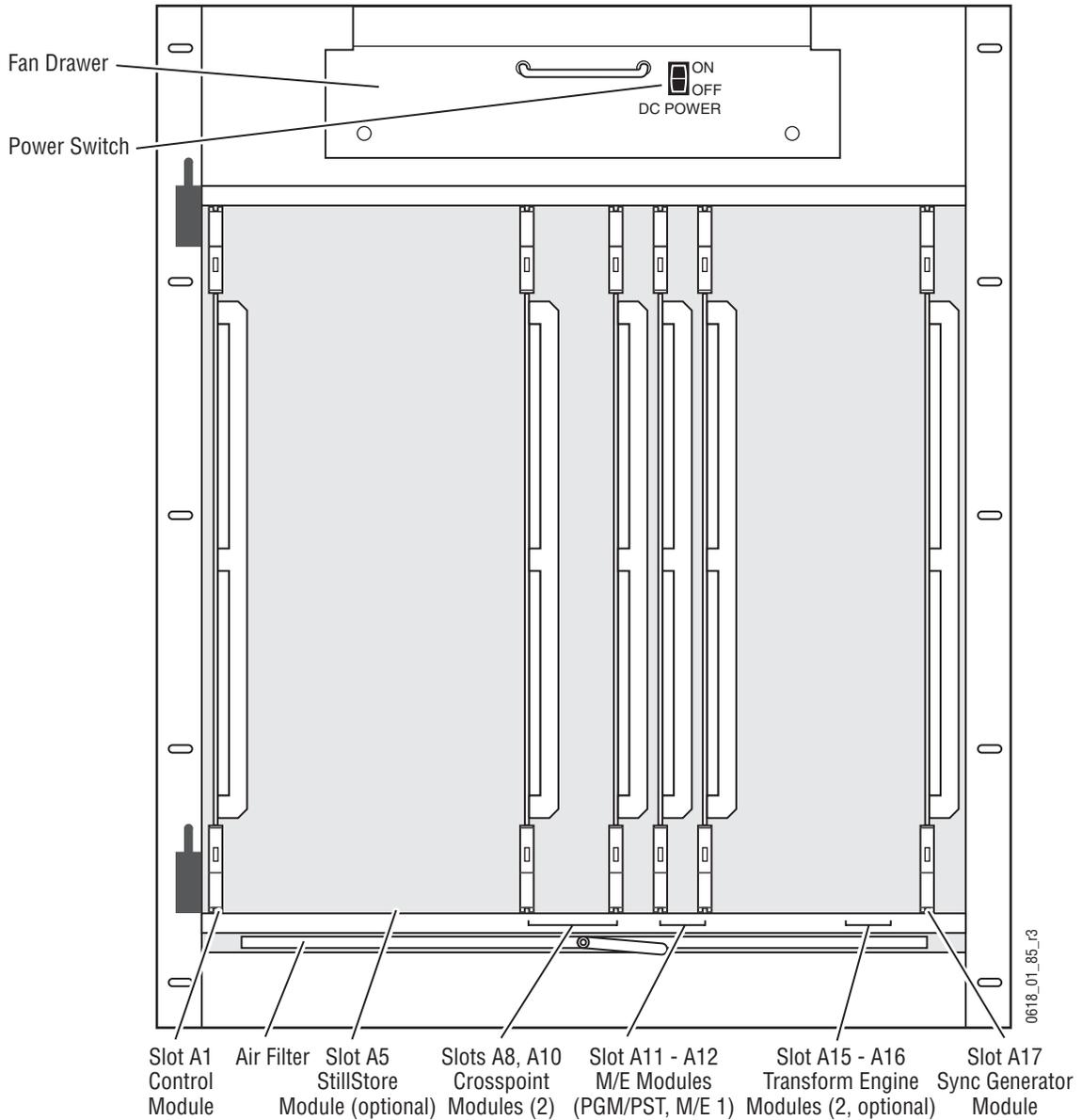
Figure 56. 4-M/E Kalypso Video Processor Frame, Rear View



2-M/E Video Processor Frame

The 2-M/E Kalypso system uses the same frame hardware as the 4-ME Kalypso system, except some slots are not filled in the standard configuration. Because only two M/Es are standard (M/E 1 and PGM PST), only two M/E modules and only two crosspoint module are provided standard (Figure 57). The 2-M/E Kalypso system supports the Still Store and Transform Engine options, and up to two additional M/E modules and another Crosspoint module may be added.

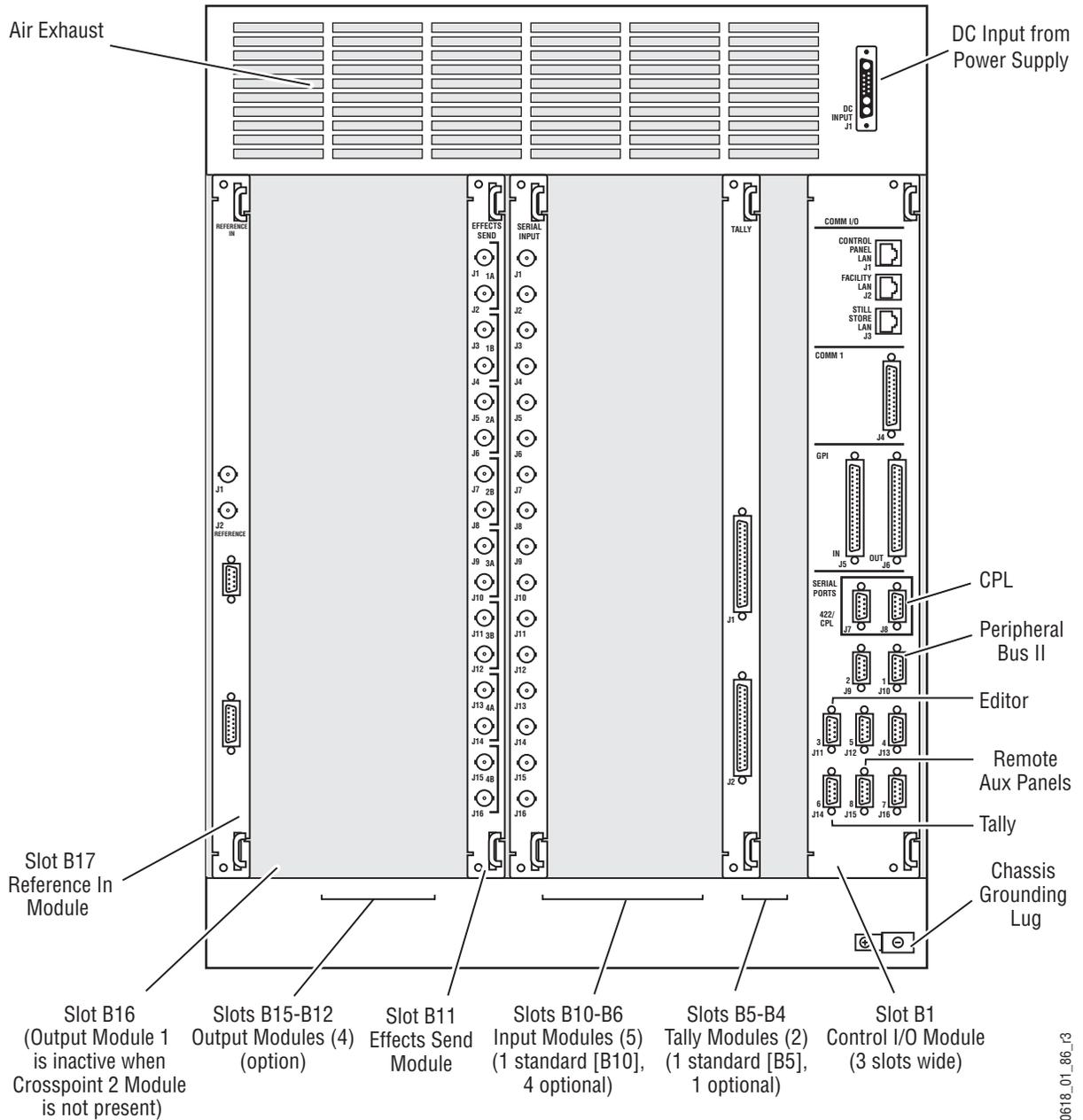
Figure 57. Standard 2-M/E Kalypso Video Processor Frame, Front View



The standard 2-M/E Kalypso system includes one Input module and the Effects Send module to support video inputs and outputs (Figure 58). Up to four additional Input and Output modules can be installed. Slot B16 (labeled on the frame as Output 1, 1-8) is not available for use on a standard 2-M/E Kalypso system.

Note If Crosspoint module 2 (option) is inserted in Slot A9, it activates Slot B16 (Output module 1). See Figure 58. If Crosspoint module 2 is not inserted in Slot A9, Slot B16 is inactive.

Figure 58. Standard 2-M/E Kalypso Video Processor Frame, Rear View

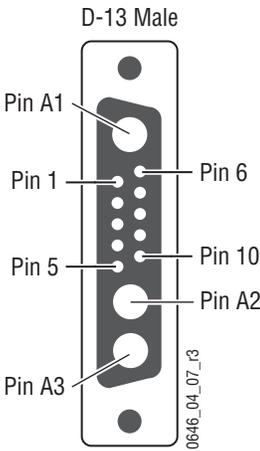


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Video Processor Pinouts

DC Input

Table 2. DC Power Input Connector

DC Input - J1	Pin	Function
	A1	48+ Volts Main
	A2	48- Volts Main
	A3	Chassis Ground
	1	Power Module #1 not present if open. Connect to pin 10 if installed.
	2	Power Module #2 not present if open. See pin 1.
	3	Power Module #3 not present if open. See pin 1.
	4	Power Module #1 DC fail output. Low if DC OK. High or open if DC failed, front panel switch off, or module absent.
	5	Power Module #2 DC fail output. See pin 4.
	6	Power Module #3 DC fail output. See pin 4.
	7	DC Disable Input. Open circuit disables all power modules. Connected to thermostat that opens at high temperature. DC power enabled when connected to pin 10.
8	Unassigned	
9	Unassigned	
10	Common. Return path for control signals. Connected to chassis via load wiring	

Control I/O Module

Table 3. RS-232 Port

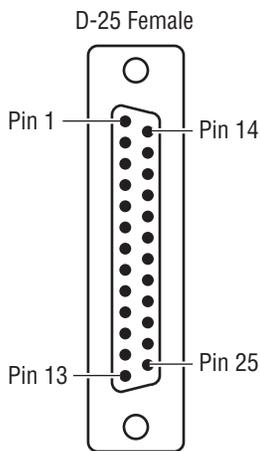
COM1 Port - J4	Pin	Function	Pin	Function
	1	Chassis Ground	14	Not Used
	2	RXD	15	Not Used
	3	TXD	16	Not Used
	4	RTS	17	Not Used
	5	CTS	18	Not Used
	6	DSR	19	Not Used
	7	Chassis Ground	20	DTR
	8	DCD	21	Not Used
	9	Not Used	22	Not Used
	10	Not Used	23	Not Used
	11	Not Used	24	Not Used
	12	Not Used	25	Not Used
	13	Not Used		

Table 4. GPI Inputs

GPI Inputs Port – J5		Pin	Function	Pin	Function
<p>D-37 Female</p> <p>Pin 1</p> <p>Pin 20</p> <p>Pin 19</p> <p>Pin 37</p>	1	Chassis Ground	20	IN 1 B	
	2	IN 1 A	21	IN 2 B	
	3	IN 2 A	22	IN 3 B	
	4	IN 3 A	23	IN 4 B	
	5	IN 4 A	24	Chassis Ground	
	6	IN 5 A	25	IN 5 B	
	7	IN 6 A	26	IN 6 B	
	8	IN 7 A	27	IN 7 B	
	9	IN 8 A	28	IN 8 B	
	10	Chassis Ground	29	IN 9 B	
	11	IN 9 A	30	IN 10 B	
	12	IN 10 A	31	IN 11 B	
	13	IN 11 A	32	IN 12 B	
	14	IN 12 A	33	Chassis Ground	
	15	IN 13 A	34	IN 13 B	
	16	IN 14 A	35	IN 14 B	
	17	IN 15 A	36	IN 15 B	
	18	IN 16 A	37	IN 16 B	
	19	Chassis Ground			

Notes:

Inputs are opto-isolated.

A and B are polarity independent.

Apply from 5 to 24 volts between A and B to turn on.

Table 5. GPI Outputs

GPI Outputs Port – J6		Pin	Function	Pin	Function
<p>D-37 Female</p> <p>Pin 1</p> <p>Pin 20</p> <p>Pin 19</p> <p>Pin 37</p>	1	Chassis Ground	20	Out 1 B	
	2	Out 1 A	21	Out 2 B	
	3	Out 2 A	22	Out 3 B	
	4	Out 3 A	23	Out 4 B	
	5	Out 4 A	24	Chassis Ground	
	6	Out 5 A	25	Out 5 B	
	7	Out 6 A	26	Out 6 B	
	8	Out 7 A	27	Out 7 B	
	9	Out 8 A	28	Out 8 B	
	10	Chassis Ground	29	Out 9 B	
	11	Out 9 A	30	Out 10 B	
	12	Out 10 A	31	Out 11 B	
	13	Out 11 A	32	Out 12 B	
	14	Out 12 A	33	Chassis Ground	
	15	Out 13 A	34	Out 13 B	
	16	Out 14 A	35	Out 14 B	
	17	Out 15 A	36	Out 15 B	
	18	Out 16 A	37	Out 16 B	
	19	Chassis Ground			

Notes:

Outputs are normally open relay closures between A and B
 30 volts maximum open circuit between A and B.
 1 amp maximum.

Table 6. Tally Ports

Tally Ports	Pin	Tally Module 1 Tally 1-32, J1	Tally Module 1 Tally 33-64, J2	Tally Module 2 Tally 65-96, J1	Tally Module 2 Tally 97-128, J2
	1	Tally 1	Tally 33	Tally 65	Tally 97
	2	Tally 2	Tally 34	Tally 66	Tally 98
	3	Tally 3	Tally 35	Tally 67	Tally 99
	4	Tally 4	Tally 36	Tally 68	Tally 100
	5	Tally 5	Tally 37	Tally 69	Tally 101
	6	Tally 6	Tally 38	Tally 70	Tally 102
	7	Tally 7	Tally 39	Tally 71	Tally 103
	8	Tally 8	Tally 40	Tally 72	Tally 104
	9	Tally 9	Tally 41	Tally 73	Tally 105
	10	Tally 10	Tally 42	Tally 74	Tally 106
	11	Tally 11	Tally 43	Tally 75	Tally 107
	12	Tally 12	Tally 44	Tally 76	Tally 108
	13	Tally 13	Tally 45	Tally 77	Tally 109
	14	Tally 14	Tally 46	Tally 78	Tally 110
	15	Tally 15	Tally 47	Tally 79	Tally 111
	16	Tally 16	Tally 48	Tally 80	Tally 112
	17	Tally 17	Tally 49	Tally 81	Tally 113
	18	Tally 18	Tally 50	Tally 82	Tally 114
	19	Tally 19	Tally 51	Tally 83	Tally 115
	20	Tally 20	Tally 52	Tally 84	Tally 116
	21	Tally 21	Tally 53	Tally 85	Tally 117
	22	Tally 22	Tally 54	Tally 86	Tally 118
	23	Tally 23	Tally 55	Tally 87	Tally 119
	24	Tally 24	Tally 56	Tally 88	Tally 120
	25	Tally 25	Tally 57	Tally 89	Tally 121
	26	Tally 26	Tally 58	Tally 90	Tally 122
	27	Tally 27	Tally 59	Tally 91	Tally 123
	28	Tally 28	Tally 60	Tally 92	Tally 124
	29	Tally 29	Tally 61	Tally 93	Tally 125
	30	Tally 30	Tally 62	Tally 94	Tally 126
	31	Tally 31	Tally 63	Tally 95	Tally 127
	32	Tally 32	Tally 64	Tally 96	Tally 128
	33	Not Used	Not Used	Not Used	Not Used
	34	Not Used	Not Used	Not Used	Not Used
	35	Not Used	Not Used	Not Used	Not Used
	36	Tally Common Tally 1-32	Tally Common Tally 33-64	Tally Common Tally 65-96	Tally Common Tally 97-128
	37	Chassis Ground	Chassis Ground	Chassis Ground	Chassis Ground

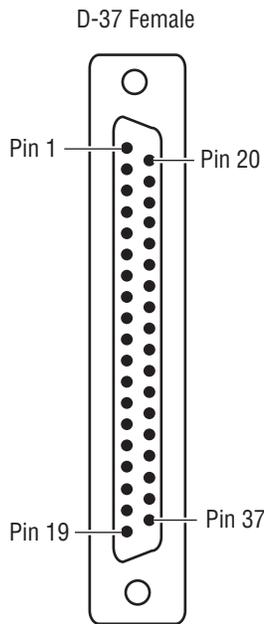
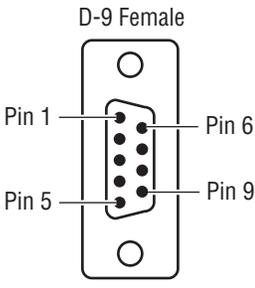


Table 7. Serial Ports

RS-422 Ports	Pin	CPL Ports - J7, J8	J9, J10, J11, J12, J13, J14, J15, J16 Serial Ports
 <p>D-9 Female</p> <p>Pin 1</p> <p>Pin 5</p> <p>Pin 6</p> <p>Pin 9</p>	1	Chassis Ground	Chassis Ground
	2	RX -	RX -
	3	TX +	TX +
	4	Chassis Ground	Chassis Ground
	5	Not Used	Not Used
	6	Common (Ground)	Common (Ground)
	7	RX +	RX +
	8	TX -	TX -
	9	Chassis Ground	Chassis Ground

Notes:

For Ports J9 – J16 only: The data directions specified on pins 2&3 and 7&8 as RX and TX may be reversed in software configuration.

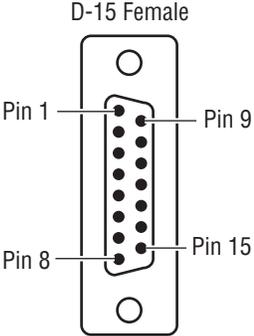
In software versions before Release 7.5 the serial port assignments were fixed. Release 7.5 permits port assignment. The previously fixed assignments are used as the defaults for 7.5 and later software. [Table 8](#) lists these assignments.

Table 8. Kalypso 7.2 and Earlier Software Fixed Serial Port Assignments

Function	J#	Port
DPM Device #2	7	422-CPL
DPM Device #1	8	422-CPL
Unassigned	9	2
Peripheral Bus II	10	1
Editor Interface	11	3
Tally Contribution	12	5
Unassigned	13	4
Unassigned	14	6
Remote Aux Panel	15	8
Unassigned	16	7

Reference In Module

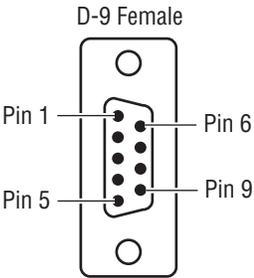
Table 9. Alarms

Alarms Port - J4	Pin	Function	Alarm Status		
			Pins	Normal	Alarm
 <p>D-15 Female</p> <p>Pin 1</p> <p>Pin 8</p> <p>Pin 9</p> <p>Pin 15</p>	1	Normally Closed A	1, 3	Closed	Open
	2	Normally Open A	2, 3	Open	Closed
	3	COM A	4, 6	Closed	Open
	4	Normally Closed B	5, 6	Open	Closed
	5	Normally Open B			
	6	COM B			
	7	Not Used			
	8	Not Used			
	9	Not Used			
	10	Not Used			
	11	Not Used			
	12	Not Used			
	13	Not Used			
	14	Not Used			
	15	Chassis Ground			

Notes:

Relay contacts A and B are totally isolated from each other.

Table 10. Linear Timecode

Linear Timecode Port - J3	Pin	Function
 <p>D-9 Female</p> <p>Pin 1</p> <p>Pin 5</p> <p>Pin 6</p> <p>Pin 9</p>	1	Not Used
	2	Not Used
	3	Not Used
	4	Chassis Ground
	5	LTC +
	6	Not Used
	7	Chassis Ground
	8	Not Used
	9	LTC -

Notes:

Currently unused. A time code reference may be supplied as VITC on the reference input or as LTC to this DB-9.

Video Processor Options

Video Processor options include:

- Video Input expansion modules,
- Video Output expansion modules,
- Tally Expansion module,
- Transform Engine modules,
- Still Store module, and
- KlipCache Still Store memory upgrade.

Refer to [Table 11](#) for details on Video Processor options.

Table 11. Video Processor Module Options

Option	Frame Install Location ^a Front (A) / Rear (B)		Standard	Optional	Description
	A	B			
Transform Engine	15 or 16	N/A	N/A	2	Each option module contains three transform engines.
Still Store	5	N/A	N/A	1	Option includes 2 inputs, 8 outputs. Storage for 100 + frames and hard drive storage for thousands of frames.
Tally	N/A	4 or 5	1	1	Standard module provides tally relay closures 1 through 64, the optional module provides tally relay closures 65 through 128. Two levels of tally per module allowed.
Input Options	N/A	6 - 10	1	4	Each module provides sixteen non-looping video inputs (total of eighty inputs provided by five modules).
Output Options	N/A	12 - 16	N/A ^b	5 ^c	Each module provides eight video output signals (total of 40 outputs from five modules; the Effects Send module can provide an additional eight outputs, for a maximum of 48).

^a Rear bay slots are numbered from right to left.

^b The standard Effects Send module may be used as an Output module to provide up to eight outputs.

^c There are four Output Options for the 2-M/E. Slot B16 (Output module 1) is inactive when Crosspoint 2 module is not present.

Modules plug into midplane connectors between the front and rear bays. It is not necessary to disconnect line power from the Video Processor frame when removing or installing Video Processor frame modules.

Module Insertion

Modules slide into frame slots and plug into connectors on the frame midplane. To insert a module, slide it slowly into the correct location, avoiding contact with the modules on either side. Ensure that you are inserting a module in an appropriate slot before applying pressure to seat the module. The correct location of each module is indicated on the frame door and midplane by module name, and each module is keyed to prevent installation in the wrong location. For a module to be successfully inserted in any given slot, the keyholes on the module must match the module keys on the midplane.

Module Removal

To remove a module from the frame, disengage the module from its connection to the midplane by simultaneously pulling up on the upper ejector tab and down on the lower ejector tab. When the module has been unseated, pull it out of the frame slowly while avoiding contact with adjacent modules.

KlipCache Option Hardware Installation

The KlipCache option includes four DIMMs that significantly increases cache storage capacity.

CAUTION Use anti-static practices when handling the memory modules and Still Store modules.

To install the extra memory:

1. Open the Video Processor frame front access door and remove the Still Store module from slot A5.
2. Lay the Still Store module on its left side onto an anti-static surface (with the DIMMs facing up).
3. Carefully remove the two existing DIMMs, and fill the four empty slots with the four new DIMMS provided.

CAUTION The Still Store DIMMs use a special access mode. Installing DIMMs different from those supplied with the option may render the Still Store inoperable.

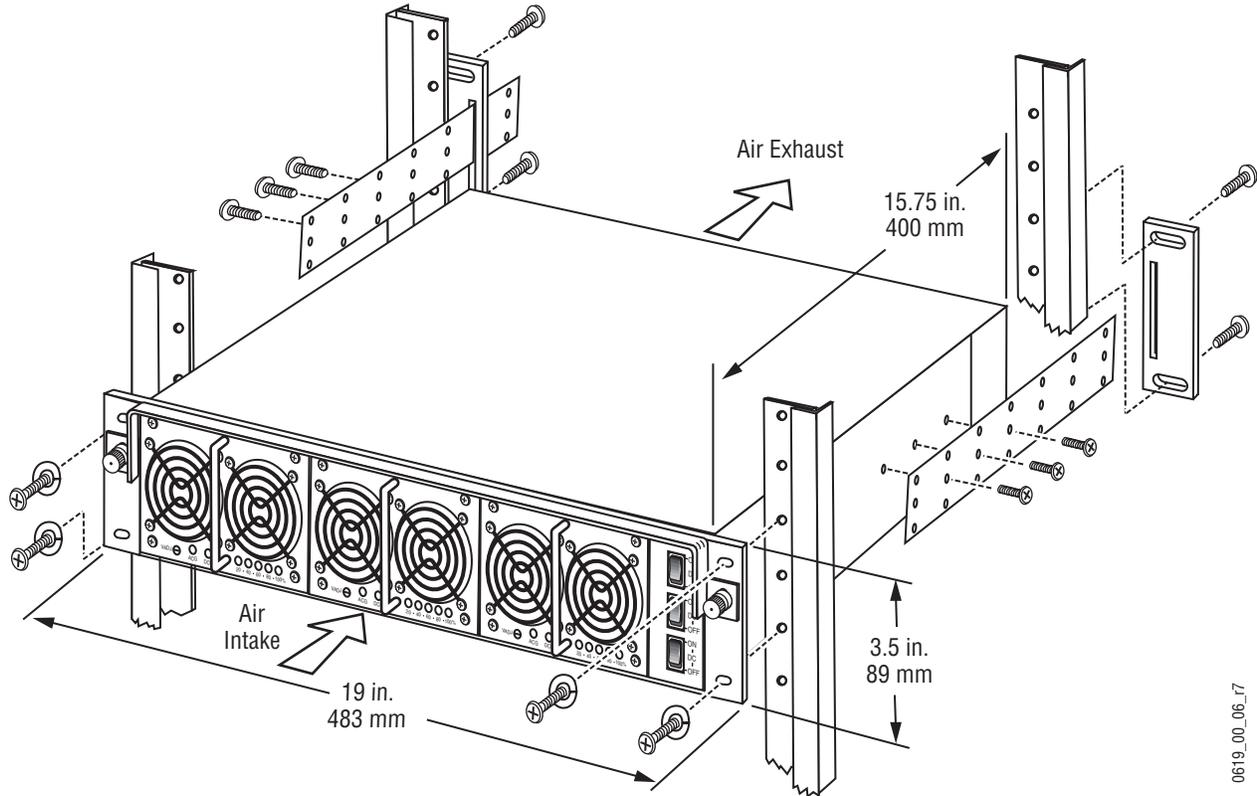
4. Replace the Still Store module in the frame.
5. Reset the Video Processor frame.

The extra memory becomes accessible when 7.0 or higher software is installed and the KlipCache feature is authorized. At that time, the Total Pages field in the Still Store Cache menu will report 1815 pages. Without the extra memory or option enabled 109 pages of memory are available.

Kalypso Video Processor Power Supply Installation

The Kalypso Video Processor Power Supply is rack-mountable, occupying 2 rack units (Figure 59). It is separate from the Video Processor and has its own cooling fans.

Figure 59. Video Processor Power Supply Installation



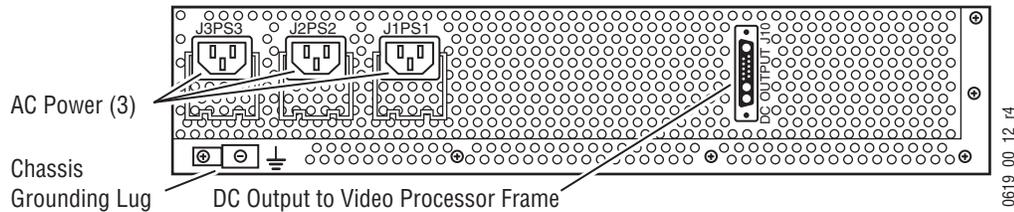
The power supply can contain up to three slide-in modules rated at 1000 watts each. Two power supply modules are required to run the system. An optional third module may be added to provide redundant power. With three modules installed, one module can fail without causing system failure. Modules are hot-swappable and current sharing. It is recommended that each module's AC input be connected to a separate AC supply circuit. Any module(s) for which a separate supply circuit is not available should be connected to a UPS.

A blank module must be installed in the empty slot when the power supply frame is not fully populated with three power modules. Every Kalypso power supply is shipped with one blank power module for this purpose, regardless of whether two or three power modules are ordered.

WARNING A blank module must be installed in the empty slot any time the power supply frame is not fully populated with three power modules.

All power connections are located at the rear of the power supply (Figure 60). Each Power Supply module has its own On/Off switch, and a master switch on the frame fan/plenum assembly controls power to the entire Video Processor Power Supply, as well as the fan itself. An included one meter (3.28 ft) interconnecting DC power cable allows the Video Processor Power Supply to be installed either above or below the Video Processor frame.

Figure 60. Video Processor Power Supply Rear View



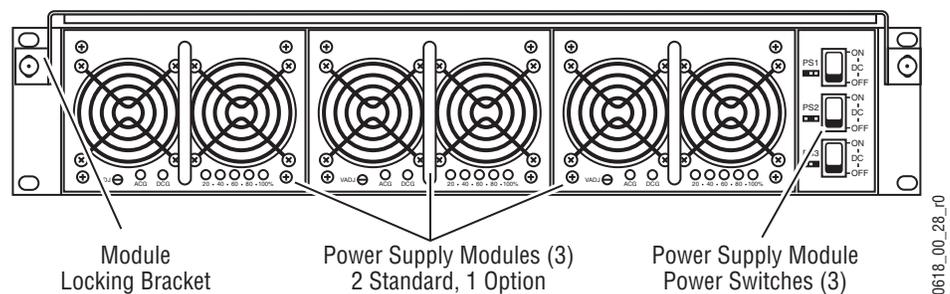
Video Processor Redundant Power Supply Installation

A blank module is installed in the empty slot in which the third module will be installed. The blank module must remain in place until the redundant power supply module is installed.

To Install a Redundant Power Supply:

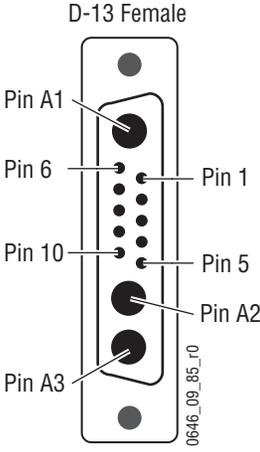
1. Ensure that the power switch is in the Off position for the slot currently occupied by the blank module.
2. Remove the Module Locking Bracket (refer to Figure 61).
3. Remove the blank module.
4. Insert the redundant Power Supply module and ensure that it is properly seated in its slot.
5. Replace the Module Locking Bracket.
6. Connect the AC line cord and move the module's power switch to On.

Figure 61. Video Processor Power Supply Front View



Video Processor Power Supply Pinouts

Table 12. DC Power Output Connector

DC Output - J10	Pin	Function
	A1	48+ Volts Main
	A2	48- Volts Main
	A3	Chassis Ground
	1	Power Module #1 not present if open. Connect to pin 10 if installed.
	2	Power Module #2 not present if open. See pin 1.
	3	Power Module #3 not present if open. See pin 1.
	4	Power Module #1 DC fail output. Low if DC OK. High or open if DC failed, front panel switch off, or module absent.
	5	Power Module #2 DC fail output. See pin 4.
	6	Power Module #3 DC fail output. See pin 4.
	7	DC Disable Input. Open circuit disables all power modules. Connected to thermostat that opens at high temperature. DC power enabled when connected to pin 10.
8	Unassigned	
9	Unassigned	
10	Common. Return path for control signals. Connected to chassis via load wiring	

Main Panel Installation

4-M/E and 2-M/E Main panel installation requires careful attention to the console support structure and the console cutout dimensions necessary to accommodate the mounting flanges located on the front and sides of the tub (Figure 62).

CAUTION The 4-M/E Main panel weighs approximately 86 kg (189 lb) and the 2-M/E Main panel weighs approximately 63 kg (138 lb). Prior to installation, ensure that your console is structurally capable of supporting the Main panel.

The Main panel was designed to be flush mounted in a console, but it may also be surface mounted. Figure 63 provides installation details for 4-M/E and 2-M/E Main panel flush mount and surface mount installations. Refer to *4-M/E Main Panel* on page 93, *2-M/E Main Panel* on page 95, and *1-M/E Main Panel* on page 97 for information specific to each Main panel type.

Figure 62. Mounting Flanges

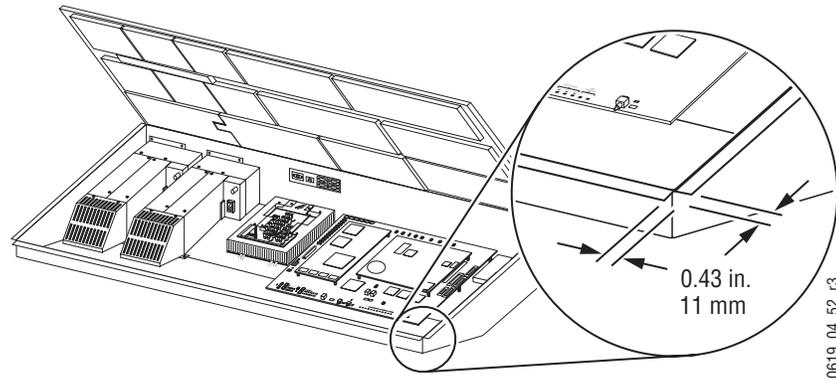
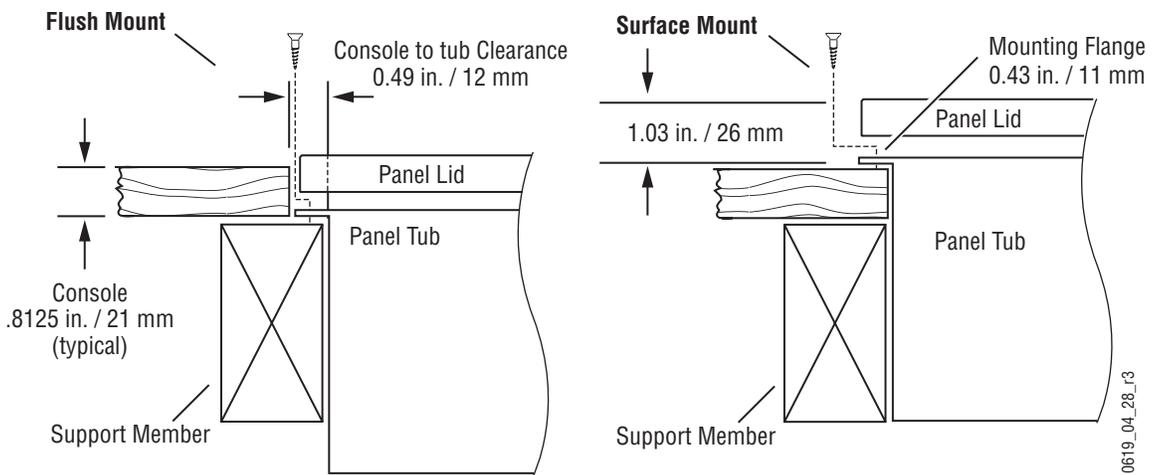


Figure 63. Main Panel Mounting Options (Front Left View)



Mounting Option	Cutout Dimensions					
	A ^a		B ¹		C ^b	
	2-M/E	4-M/E	2-M/E	4-M/E	2-M/E	4-M/E
Flush Mount ^c	20.09 in. (510 mm)	25.06 in. (637 mm)	49.51 in. (1258 mm)	55.63 in. (1413 mm)	48.66 in. (1236 mm)	54.78 in. (1391 mm)
Surface Mount ³	18.70 in. (475 mm)	23.81 in. (605 mm)	48.66 in. (1236 mm)	54.78 in. (1391 mm)	n/a	n/a

^a Console surface cutout.

^b Distance between flush mount support members.

^c Recommended tilt of 5°; maximum tilt of 15°. The recommended five degree tilt may be obtained by elevating the rear of the panel approximately two inches relative to the front of the panel.

WARNING The Main panel lid is held in the open position by two gas spring assemblies. The ability of these devices to support the lid is compromised if the installed panel tilts toward the user at an angle greater than 15 degrees.

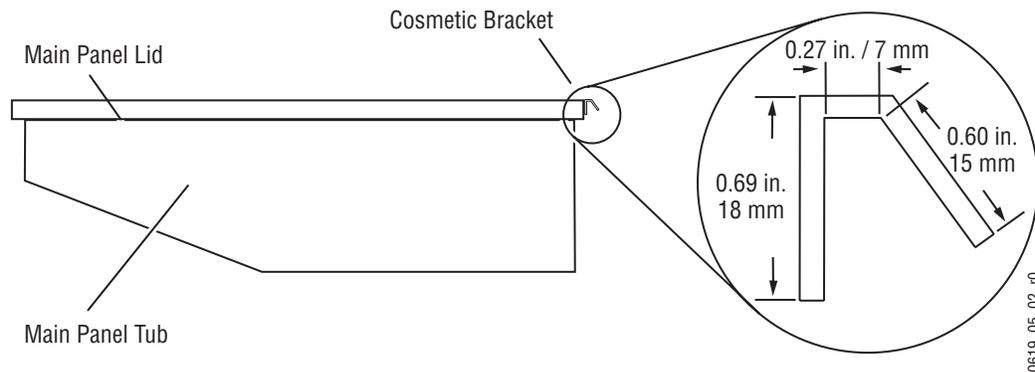
Panel ventilation is accomplished by two fans which draw air through slots around buttons and source ID displays and expel it at the rear of the panel.

CAUTION Regardless of mounting method or cutout dimensions, ensure that there is at least 152 mm (6 in.) of clear space at the rear of the Main panel below the mounting surface for proper cable clearance and air flow. Allow an extra 203 mm (8 in.) to 254 mm (10 in.) of mounting surface behind the Main panel for peripheral components (e.g., Local Aux panel).

Cosmetic Bracket

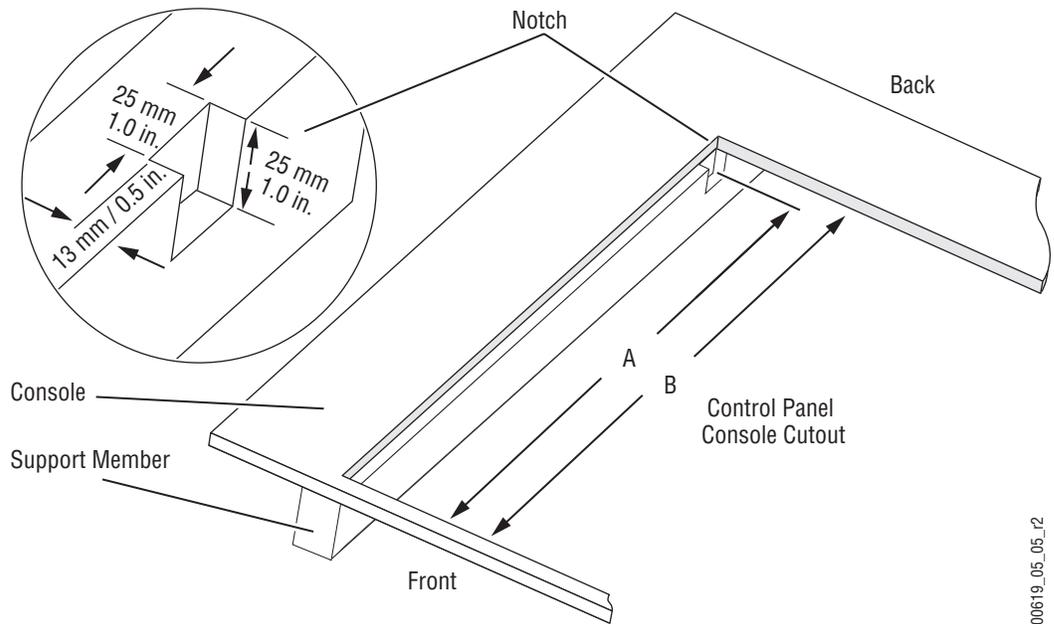
4-M/E and 2-M/E systems manufactured since March 2001 are shipped with a cosmetic bracket attached to the rear of the Main panel lid (Figure 64). The purpose of the cosmetic bracket is to cover a visible gap between the rear of the panel and the mounting surface when the panel is flush mounted. If the panel is to be surface mounted, the bracket must be removed before installation (5 screws hold the bracket in place).

Figure 64. Main Panel with Attached Cosmetic Bracket, Side View



If you choose to use the cosmetic bracket and your Main panel installation has a console support structure similar to that shown in Figure 65, it will be necessary to cut notches in the support members at the left and right rear corners of the console cutout (see the notch dimensions in Figure 65). This enables the Main panel lid to clear the support structure upon opening.

Figure 65. Support Member Notch Dimensions



00619_05_05_r2

Mounting Option	Dimensions			
	A		B ^a	
	2-M/E	4-M/E	2-M/E	4-M/E
Flush Mount	19.09 in. (485 mm)	24.06 in. (611 mm)	20.09 in. (510 mm)	25.06 in. (637 mm)

^a Console cutout dimension.

4-M/E Main Panel

The Main panel provides the operator with real-time control of the system. 4-M/E Main panel options include a redundant power supply and Source ID displays for M/E 1, 2, and 3. (Source ID displays are standard on PGM PST and on the Local Aux panel.) Refer to the following figures for panel dimensions.

Figure 66. 4-M/E Main Panel Dimensions

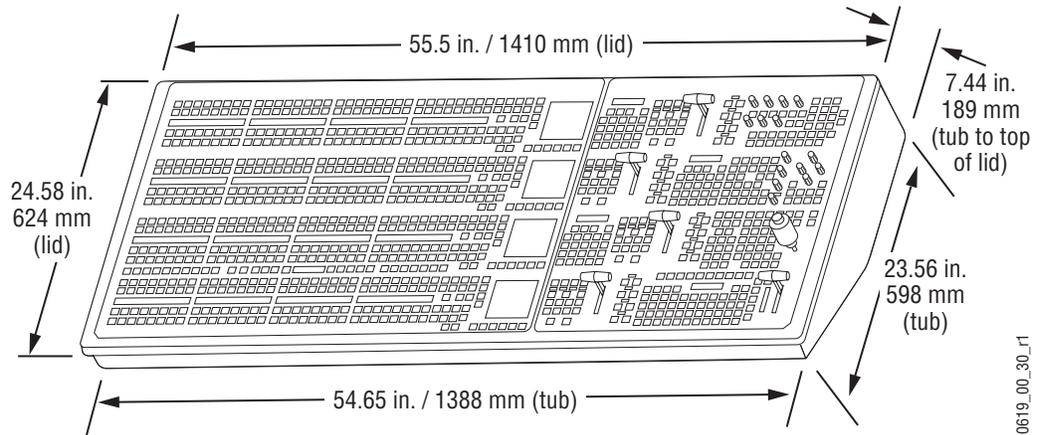


Figure 67. 4-M/E Rear Main Panel Dimensions

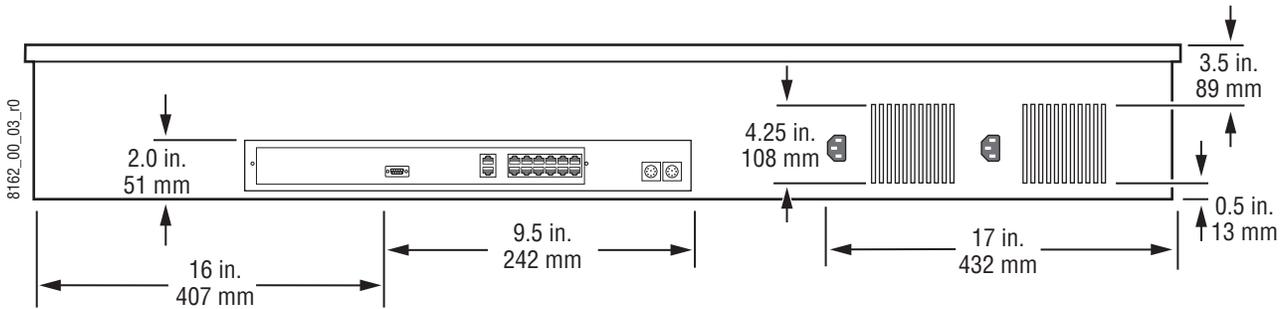


Figure 68. 4-M/E Main Panel Dimensions, Side View

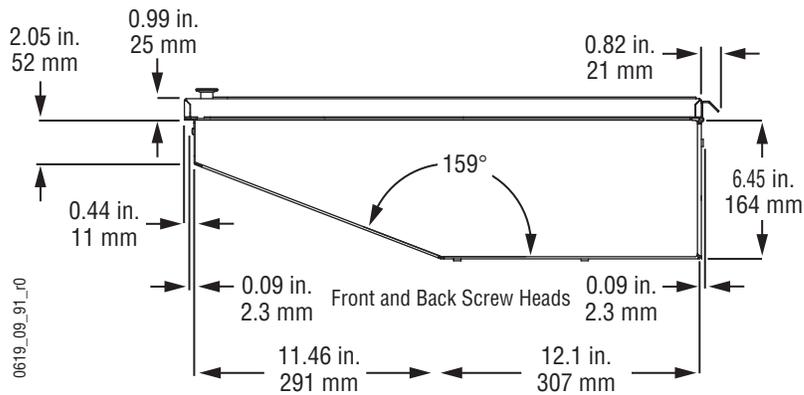


Figure 4 on page 29 identifies the rear panel connectors.

Figure 107 on page 127 illustrates the cabling between the Main panel and other system components.

2-M/E Main Panel

Source ID displays are standard on the 2-M/E Main panel, M/E 1, PGM PST row and on the Local Aux subpanel. A redundant power supply is optional. Refer to [Figure 69](#) and [Figure 70](#) for panel dimensions. Additional connectors for the integrated Local Aux subpanel are located on the rear of the panel.

Figure 69. 2-M/E Main Panel Dimensions

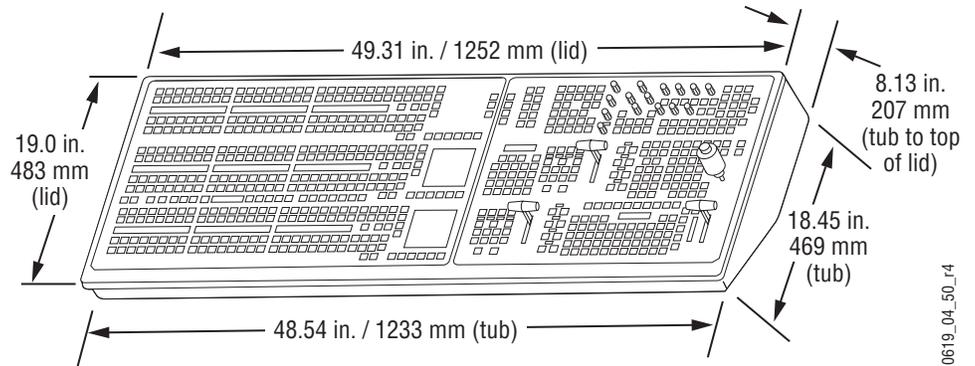


Figure 70. 2-M/E Rear Panel Dimensions

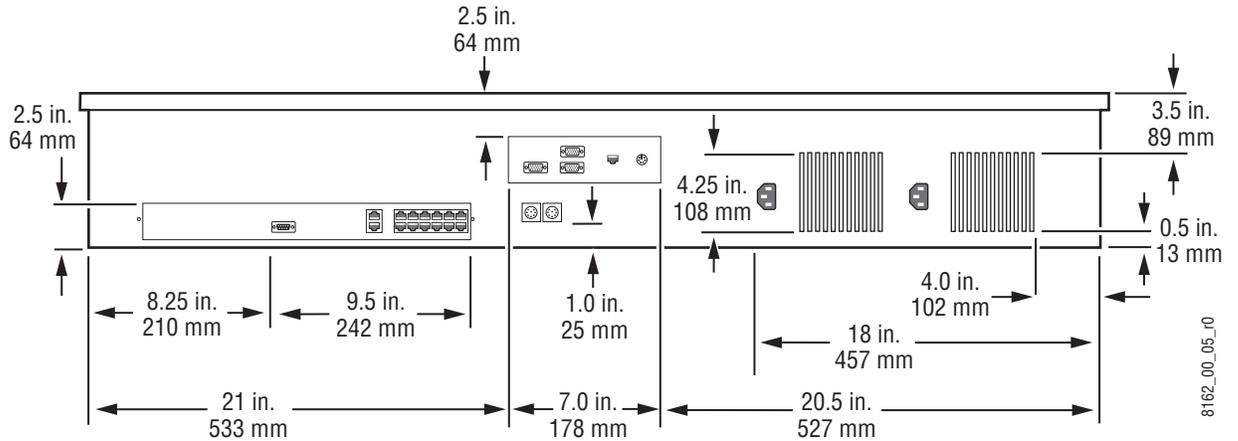


Figure 71. 2-M/E Main Panel Dimensions, Side View

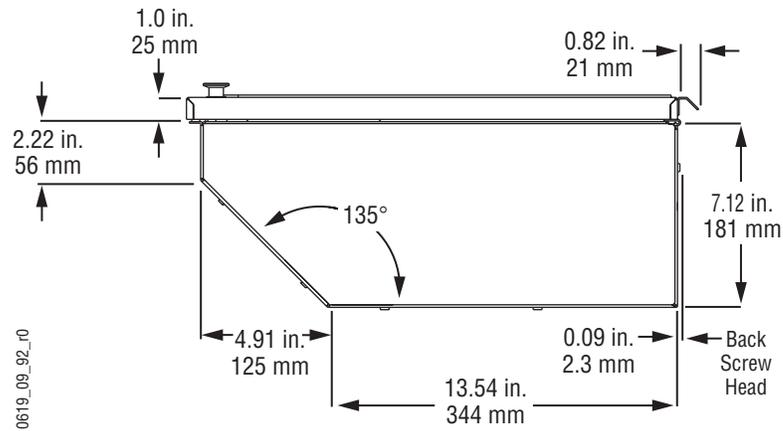


Figure 16 on page 37 identifies the rear panel connectors.

Figure 118 on page 142 illustrates the cabling between the Main panel and other system components.

Because a Local Aux subpanel is integrated into the 2-M/E Main panel, a separate Local Aux panel is not installed. The removable media drives and the Menu panel are installed the same as a 4-M/E Kalypso system.

1-M/E Main Panel

The 1-M/E Main panel is designed for either flush or surface console mounting, or it can be installed in a standard 19 inch rack. The panel is ventilated with a fan that draws air through front vents and slots around the buttons and expels it out the recessed rear panel.

Figure 72. 1-M/E Main Panel Dimensions

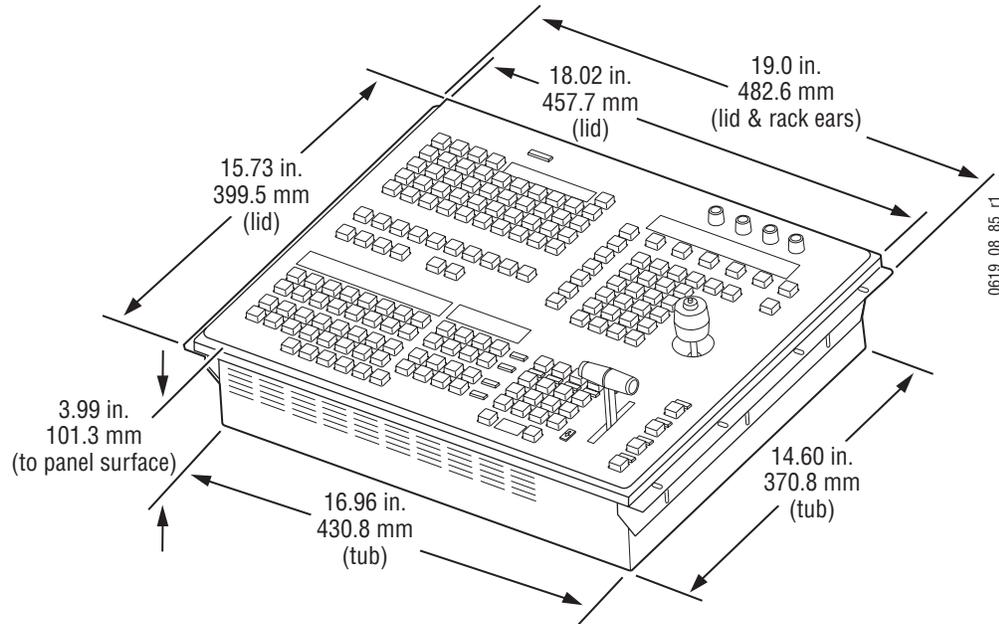
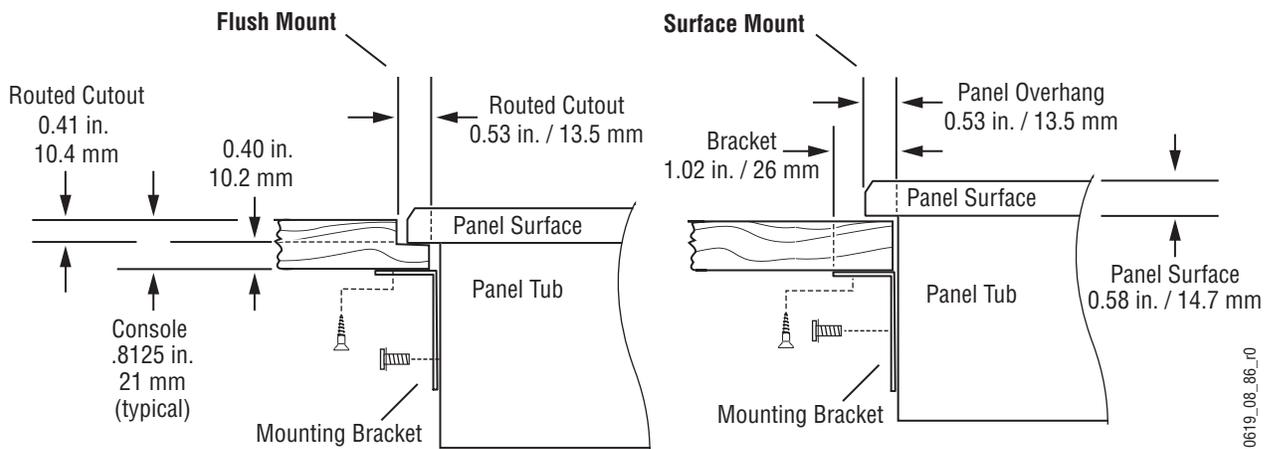


Figure 73. 1-M/E Panel Mounting Options, Front Left



Mounting Option		Console Cutout Dimensions		
		A	B	
Flush Mount	Panel surface routed cutout	15.98 in. (406 mm)	18.27 in. (464 mm)	
	Panel tub cutout	14.85 in. (377 mm)	17.21 in. (437 mm)	
Surface Mount		14.85 in. (377 mm)	17.21 in. (437 mm)	

Figure 74. 1-M/E Rear Panel Dimensions

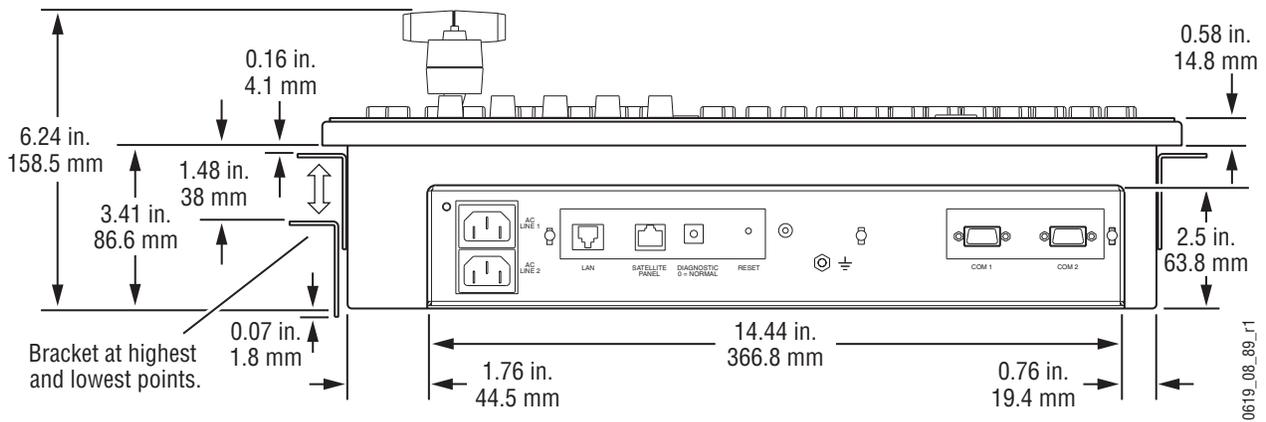
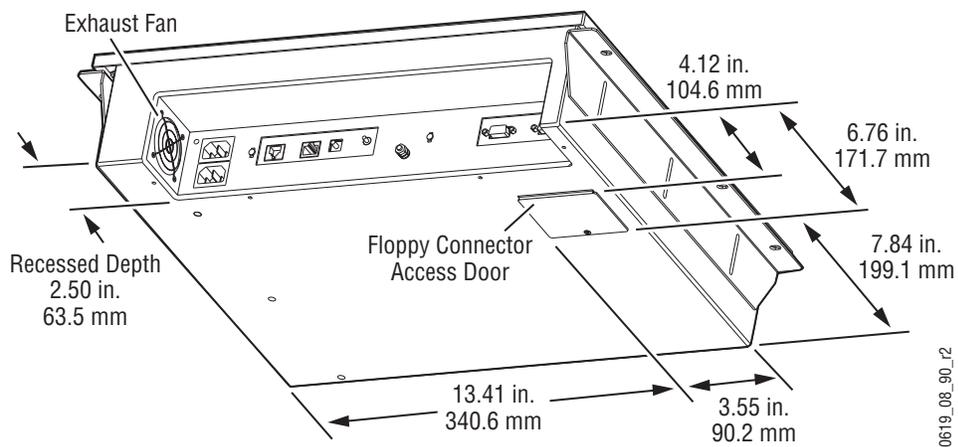


Figure 75. 1-M/E Rear Recess and Bottom Panel Dimensions



1-M/E Main Panel Cabling

Power

The 1-M/E Main panel has redundant power supplies. Connect the two power cables to separate sources of power for added security. The panel does not have an on/off switch, and so initializes as soon as power is applied.

Control

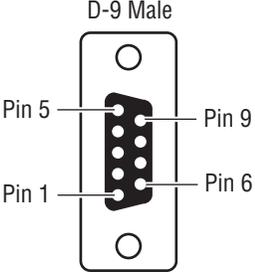
The 1-M/E Main panel Ethernet port connects to the Kalypso network switch. Use a standard, straight-through Cat 5 or better cable.

CAUTION Be sure the IP addresses of the 1-M/E panel do not conflict with your existing Kalypso system network addresses before you connect the panel to the network and power up the unit.

Main Panel Pinouts

Table 13 provides pinouts for the Main panel Panel Diagnostic serial port.

Table 13. Console Ports

Serial Port	Pin	Panel Diagnostics
 <p>D-9 Male</p>	1	DSD
	2	RXD
	3	TXD
	4	DTR
	5	Chassis Ground
	6	DSR
	7	RTS
	8	CTS
	9	Reserved

Main Panel Options

Options currently available for the Main panel include Source Name Displays for M/E 1, 2, and 3, a redundant power supply, and Remote Aux panels.

Source Name Display Installation

The standard 4-M/E Main panel has a Source Name Display assembly for the PGM PST row of crosspoint buttons. An optional kit may be purchased which adds Source Name Displays to M/E 1, M/E 2, and M/E 3. This option may be factory installed for new orders, or customer installed as an add-on anytime after system purchase.

Preparation

Verify that the option installation kit includes:

- Twelve (12) Source Name Display segments,
- Three (3) ribbon cables with 10-pin headers, and
- Eighteen Torx-head screws.

Have the following tools available for the installation procedure:

- Number 10 and Number 15 Torx screwdrivers, and
- A 3/16 inch nut driver.

Installation

One Source Name Display assembly mounts to the component side of each Crosspoint board. There are four Crosspoint boards per M/E row. The following procedure describes the installation for one M/E; the installation is the same for each M/E. Complete one M/E installation before beginning the next.

CAUTION Do not drop any loose hardware into the panel tub or panel circuitry during the install process.

CAUTION Use care when lining up connector pins prior to mating them to avoid breaking pins or damaging circuitry when power is applied.

1. Open the Main panel. Turn off the Main panel AC power.
2. Disconnect and remove the single 10-pin header ribbon cable that connects to each Crosspoint board and the Transition board (total of five connections). Retain the cable.
3. Disconnect and remove the short, 40-pin interconnecting ribbon cables that connect the Crosspoint boards to each other. These cables are located at the right edge of each board. Retain these cables.
4. Remove the six Torx head screws from each Crosspoint board, and place each board on a static free work surface as it is removed.
5. Remove the blank cover from the Source Name Display area on each Crosspoint board. Use the nut driver to remove four nuts with washers. Discard the blank covers.
6. Mate the J1 connector on the Source Name Display board to the J5 connector on the component side of the Crosspoint board. Use the standoff mounting holes in the Crosspoint board as a visual reference while mating the connectors.
7. Use the #10 Torx screwdriver to attach the Source Name Display board to the Crosspoint board with the six supplied screws.
8. Remove the protective film overlay from each of the Source Name Display segments.
9. Re-install each of the Crosspoint boards in the Main panel with the same screws that were used to remove them.
10. Re-install the 40-pin interconnecting ribbon cables.
11. Re-install the single, 10-pin ribbon cable to each Crosspoint board and to the Transition board.
12. Turn on the Main panel power and close the panel.

Main Panel Redundant Power Supply

The standard power supply configuration for the Main panel includes both +5 V and +12 V supplies. Main panel power supplies are located in the panel tub enclosure. A second power supply assembly, identical to the primary, may be purchased as an option to provide load sharing power supply redundancy. This option may be factory installed for new orders, or customer installed as an add-on anytime after system purchase.

Remote Aux Panel Types

Remote Aux panels control Kalypso aux buses from remote locations. Three 24-Crosspoint and two 32-Crosspoint Remote Aux panel configurations are available for Kalypso systems. Refer to [Table 14](#) and the following sections for panel-specific information.

Table 14. Remote Aux Panel Summary

	24-Crosspoint Aux Panel	32-Crosspoint Aux Panel
Connection	Serial Port Daisy Chain	Ethernet
Maximum Panels^a	32	40
External Sources Controlled	48 (24 unshifted, 24 shifted)	64 (32 unshifted, 32 shifted)
Available Configurations	KAL-24AUX1 (1 RU, single bus)	KAL-32AUX1 (single bus)
	KAL-24AUX2 (2 RU, single bus)	KAL-32AUX2 (16 bus delegate buttons)
	KAL-24AUX3 (3 RU, 18 bus delegate buttons)	--

^a A maximum of 40 Remote Aux panels, in any combination, can be connected to a 4-M/E or 2-M/E Kalypso system.

Remote aux panels may be purchased with the Kalypso system or added at a later time.

Note Remote Aux panels used with Model 2200, 3000, and 4000 systems can be upgraded to 24-Crosspoint functionality for use in a Kalypso environment. See the *Kalypso Model 4000 Remote Aux Panel Upgrade Instruction Manual* for details.

24-Crosspoint Remote Aux Panels

These panels are designed to select 48 external sources (24 unshifted and 24 shifted). Thirty-two Remote Aux panels can be daisy-chained on a single serial control port on either the 4-M/E or 2-M/E electronics frame. Three 24-Crosspoint Remote Aux panel configurations are available, identified by the number of rack units (RUs) each occupies in an equipment rack (see [Figure 76](#) through [Figure 79](#)). The 1 and 2 RU panels (KAL-24AUX1 and KAL-24AUX2) are dedicated to a single bus. The 3 RU panel (KAL-24AUX3) panel has 18 bus delegate buttons. All three panels have the same connector and DIP switch layout as that depicted for the KAL-24AUX1 in [Figure 79](#) on page 102.

Figure 76. KAL-24AUX1 (1 RU)

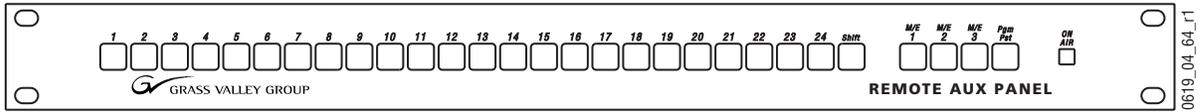


Figure 77. KAL-24AUX2 (2 RU)

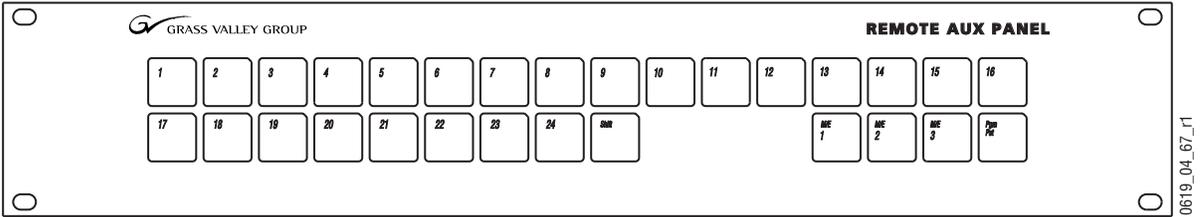
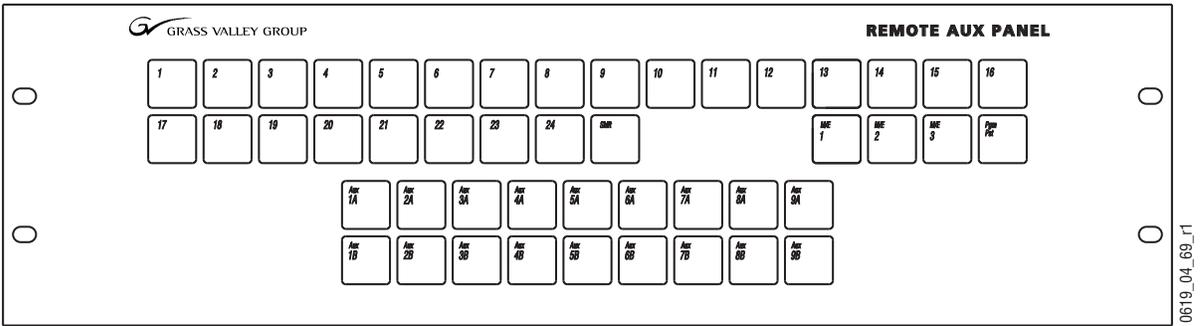


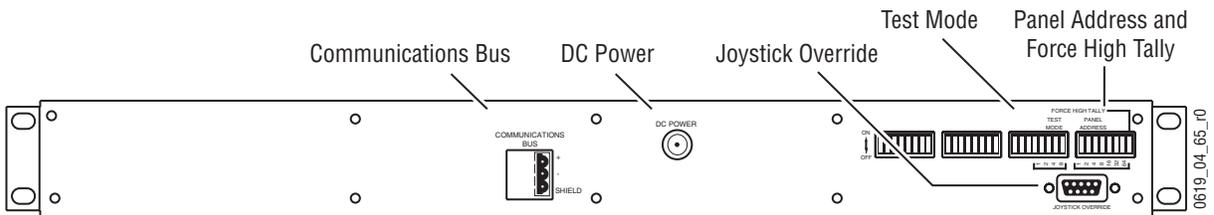
Figure 78. KAL-24AUX3 (3 RU)



Remote Aux Connections

The 24-Crosspoint Remote Aux rear panels have connectors for Communications Bus, DC power, and Joystick Override (Figure 79).

Figure 79. KAL-24AUX1 (1 RU), Rear View

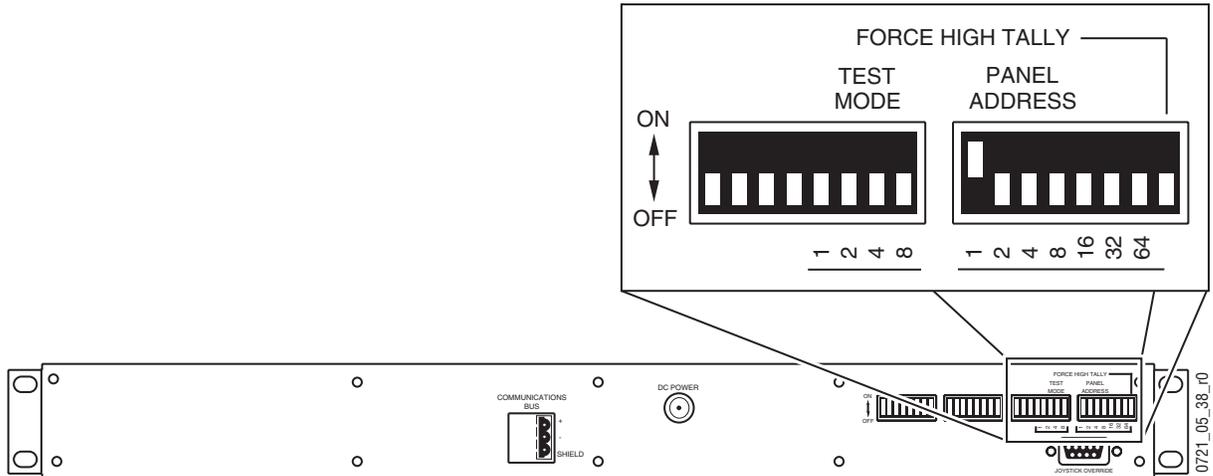


Note The rear panel layout is the same for all KAL-24AUX panels.

Rear Panel Switch Settings

The Remote Aux rear panel includes a number of switches. The two groups of switches on the right are used to control panel address, high tally, and some test modes (Figure 80). The two switch groups on the left are inactive. The panel address is set to one in the figure.

Figure 80. KAL-24AUX, Rear View



Panel Address Switches

CAUTION Each Remote Aux panel must have a unique address. Setting the same address for two or more panels will cause the entire Remote Aux system to malfunction.

Set the address of the Remote Aux Panel (0 through 31) using the switches marked PANEL ADDRESS on the right rear of the panel. The seven switches have 32 possible combinations; however, only five of the switches may be used (1-16). Switches 32 and 64 must be in the off position. If there is more than one Remote Aux panel, maintain a record of each panel address.

Force High Tally Switch

When the Force High Tally switch is off (generally the normal condition) the Remote Aux panel tally follows the switcher on/off air status for that Aux bus. Use Force High Tally only if you want the Remote Aux panel buttons to always be on, such as for a bus which never goes on air (e.g., the video operator's monitor selector).

On the 1-RU panel, the Force High Tally switch forces the ON AIR lamp on at all times.

On the 2-RU and 3-RU panels, the Force High Tally switch disables the low tally condition. The lamps will be on bright whether the bus is on air or not.

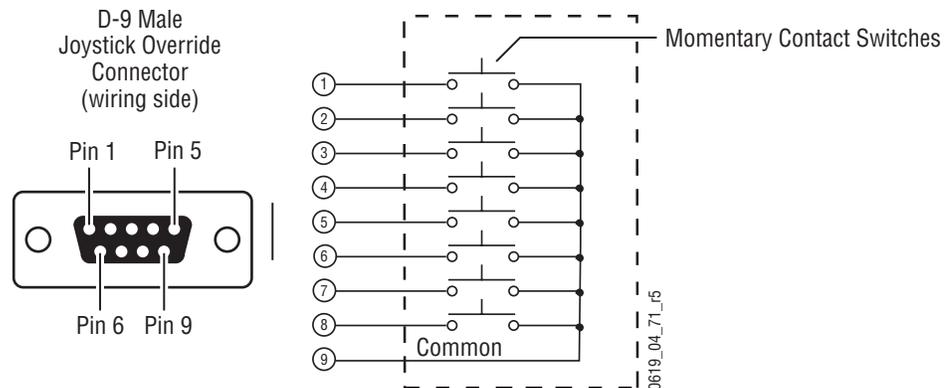
Test Mode Switches

For normal operation set all four TEST MODE switches to OFF. See [Using the Test Mode Switches on page 311](#) for more information about the test modes.

Joystick Override Connector

Camera joystick override allows the Aux bus to be momentarily switched to a camera for shading, then switched back to what ever source was previously selected, typically Program. The Remote Aux panel joystick override inputs are connected to camera shading panels which have a contact closure usually located on the shading iris/black level joystick. Individual shading control switches are located in separate shading panels. Each shading panel is connected to a different “JSO” input with all commons tied together. A user fabricated cable, external switch, and a 9-pin D connector are required to implement camera joystick override. Use shielded cable and connect the shield to the metal connector shell when fabricating the override cable. Refer to [Figure 81](#) for connector wiring.

Figure 81. KAL-24AUX Joystick Override Connector Cable Wiring



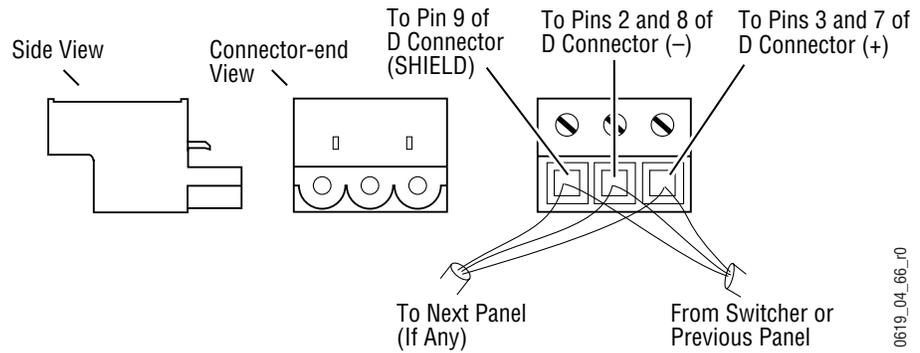
Once installed, the joystick override inputs can be mapped to specific Remote Aux panel buttons. See [Joystick Override on page 186](#) for more information.

Communications Bus

The communications bus cable connector shipped with each panel must be attached to the supplied cable or a user fabricated cable (refer to [Figure 82](#)). The supplied cable is 50 m (164 ft) long and has a pre-wired 9-pin D connector on one end. If fabricating a cable, use a shielded twisted pair cable such as Belden 8451 and refer to [Table 15](#) for wiring connections.

Thirty-two panels can be daisy-chained on a single serial control port on either the 4-M/E or 2-M/E electronics frame, but the total length of cable in the panel daisy-chain cannot exceed 320 m (1000 ft). Allow enough cable to reach each control panel connector, plus about 1 m (approximately 3 ft) extra.

Figure 82. KAL-24AUX Communications Bus Connector Cable Wiring



0619_04_66_10

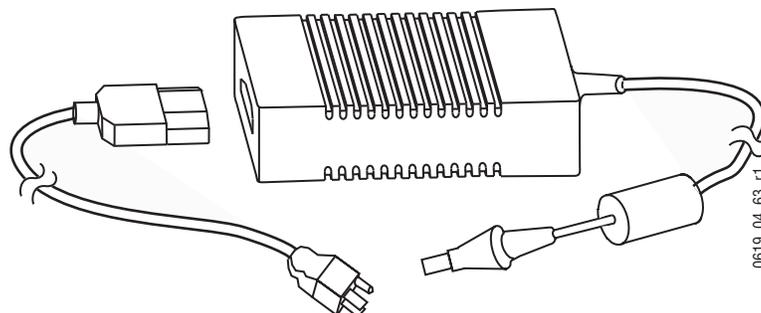
Table 15. Cable Polarity

Panel Connector	D-Connector Pins	Factory Supplied Cable
+ (Plus)	3 and 7	Red
- (Minus)	2 and 8	Black
Shield	9	Shield

Power Supply

The 24-Crosspoint Remote Aux panel power supply (Figure 83) should be securely fastened to a horizontal surface or attached to a support inside the equipment rack. Verify that the power supply cord reaches the 24-Crosspoint Remote Aux Control panel and the AC source.

Figure 83. KAL-24AUX Power Supply



0619_04_63_r1

32-Crosspoint Remote Aux Panels

These panels are designed to select 64 external sources (32 unshifted and 32 shifted). The number of 32-Crosspoint Remote Aux panels that can be network connected to either the 4-M/E or 2-M/E Video Processor frame is 40. Two panel configurations are available, identified by the number of rack units (RUs) each occupies in the standard 19 in. (483 mm) equipment rack (see [Figure 84](#) and [Figure 85](#)). Both panels have the same connector layout as that depicted for the KAL-32AUX1 in [Figure 86](#).

The 1 RU panel (KAL-32AUX1) is dedicated to a single bus. The 2 RU panel (KAL-32AUX2) panel has 16 bus delegate buttons.

Figure 84. KAL-32AUX1 (1 RU)

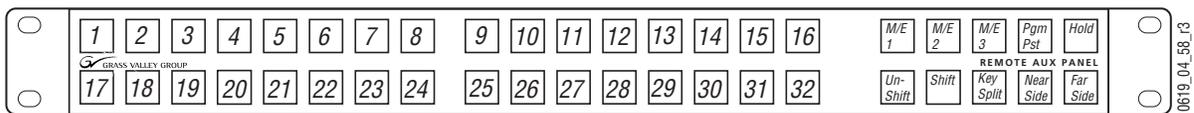
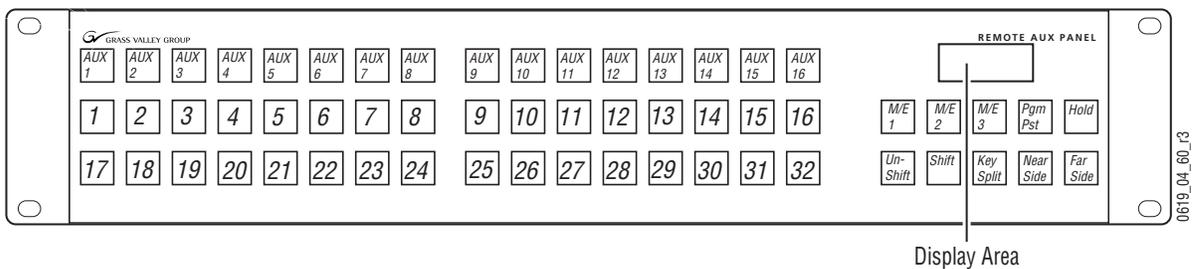


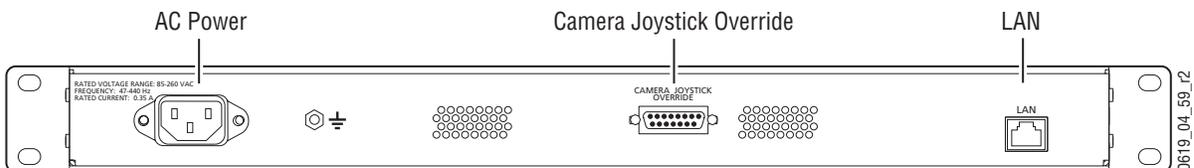
Figure 85. KAL-32AUX2 (2 RU)



32-Crosspoint Remote Aux Panel Connections

The 32-Crosspoint Remote Aux rear panels have connectors for AC power, camera joystick override, and LAN ([Figure 86](#)). The rear panel layout is the same for both KAL-32AUX panels.

Figure 86. KAL-32AUX1 (1 RU), Rear View



LAN

The 32-Crosspoint Remote Aux panels employ Ethernet. Refer to [LAN Requirements](#) on page 129 for information on system topology.

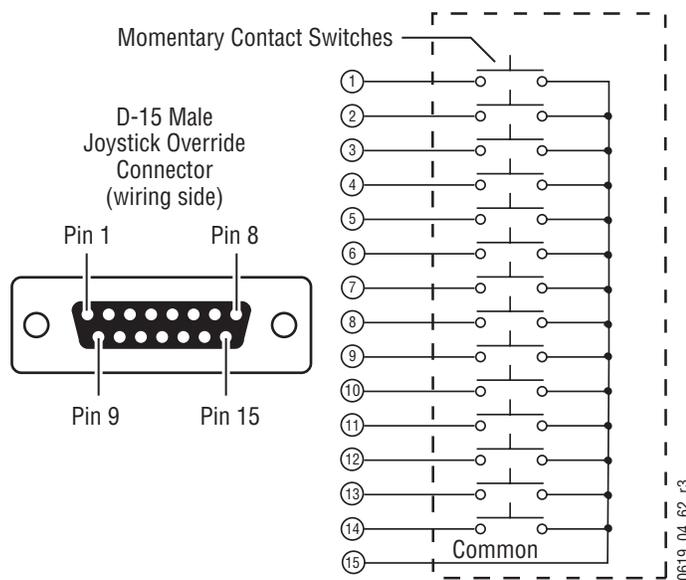
Note Each 32-Crosspoint Remote Aux panel must have a unique IP Address before it is connected to the network.

It is convenient to configure the IP addresses of all your Remote Aux panels on a bench before installing them in their final rack locations. See [Setting 32-Crosspoint Remote Aux Panel IP Address on page 160](#) for specific instructions.

Joystick Override Connector

Camera joystick override allows the Aux bus to be momentarily switched to a camera for shading, then switched back to what ever source was previously selected, typically Program. The Remote Aux panel joystick override inputs are connected to camera shading panels which have a contact closure usually located on the shading iris/black level joystick. Individual shading control switches are located in separate shading panels. Each shading panel is connected to a different “JSO” input with all commons tied together. A user fabricated cable, external switch, and a 15-pin D connector are required to implement camera joystick override. Use shielded cable and connect the shield to the metal connector shell when fabricating the override cable. Refer to [Figure 87](#) for connector wiring.

Figure 87. KAL-32AUX Joystick Override Connector Cable Wiring



Once installed, the joystick override inputs can be mapped to specific Remote Aux panel buttons. See [Joystick Override on page 186](#) for more information.

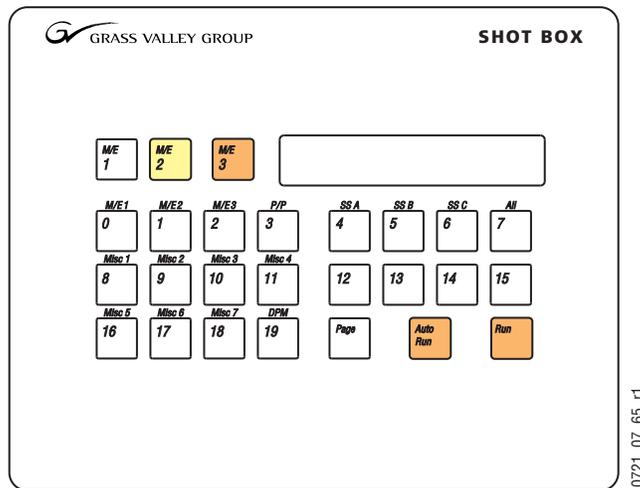
AC Power

The 32-Crosspoint Remote Aux panels have internal power supplies which connect directly to facility AC power by supplied line cords.

Shot Box

The E-MEM Shot Box (Figure 88) is a separate panel that is designed for rapidly recalling previously built effects. Features include single button delegation for M/E 1, 2, 3, or Master E-MEM, five pages of 20 registers allowing access to all 100 registers, register and page readout display, and Pvw, Run and Auto Run controls.

Figure 88. Kalypso Shot Box



Installation

The dimensions in Figure 89 allow clearance for sheet metal and fasteners, and provide top plate overlap of approximately 0.6 in. (15 mm) on all sides. If the mounting surface is 0.75 in (19 mm) or less in thickness, the mounting nuts will not need to be countersunk (Figure 89). Refer to Figure 90 for exact screw placement and sheet metal dimensions.

Figure 89. Shot Box Cutout

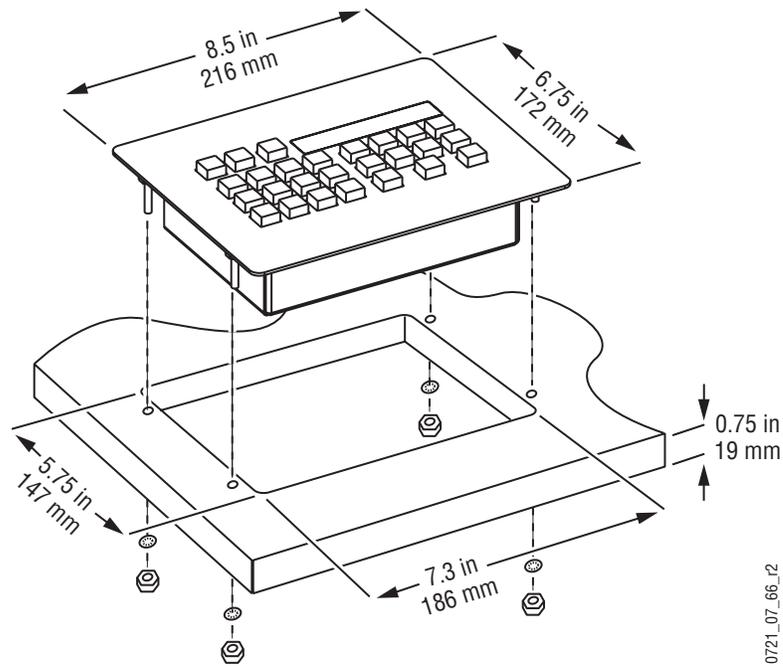
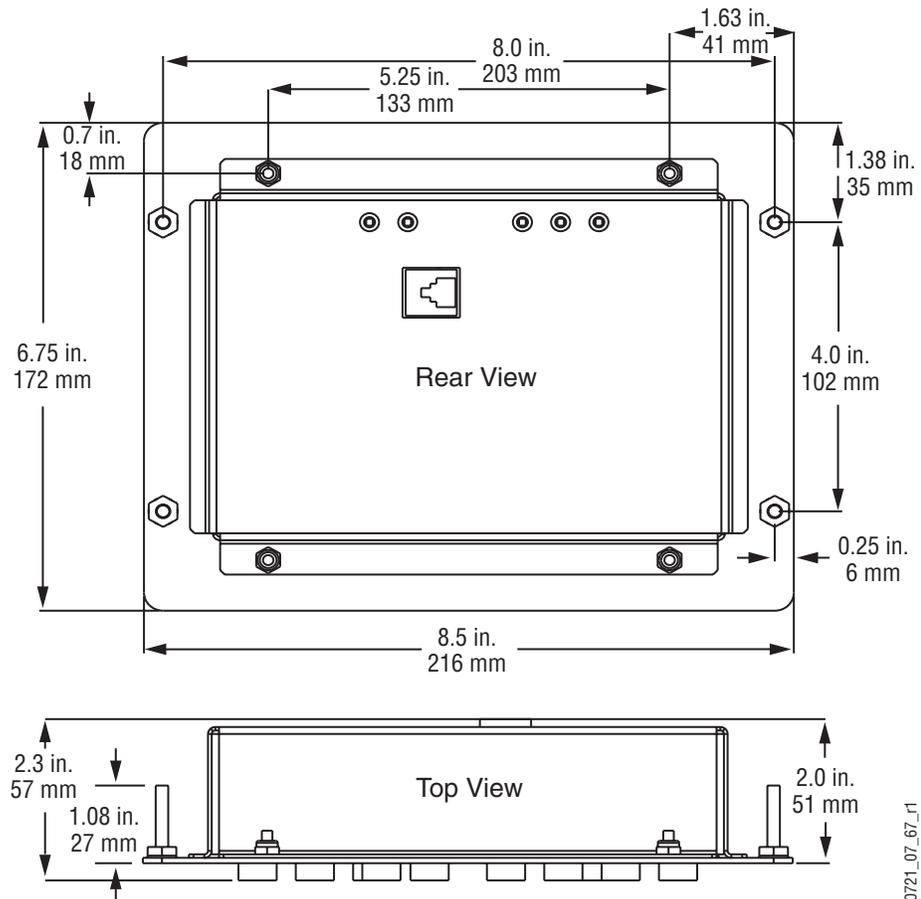


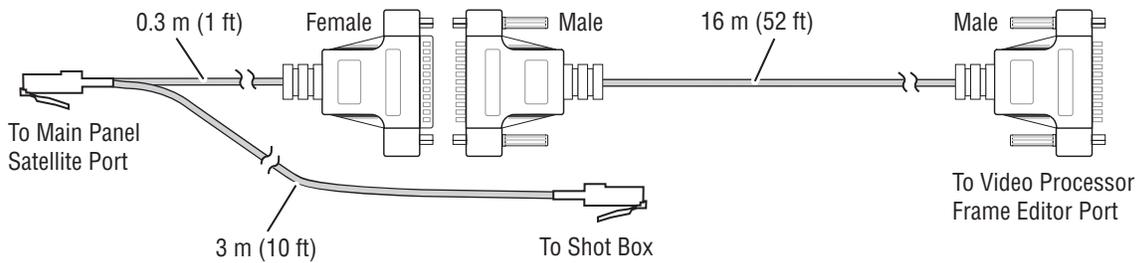
Figure 90. Shot Box Dimensions



Standard Cabling

The provided cables connect the Main panel, Shot Box, and Video Processor frame as shown in Figure 91. Power passes from the Main panel to the Shot Box. To support power distribution, the short cable connects to the Main panel and the long cable connects to the Shot Box. If the Shot Box will be placed more than 3 m (10 ft) from the Main panel, an optional cable kit is available. Contact your local Thomson Grass Valley sales office for details

Figure 91. Shot Box Cables and Connections

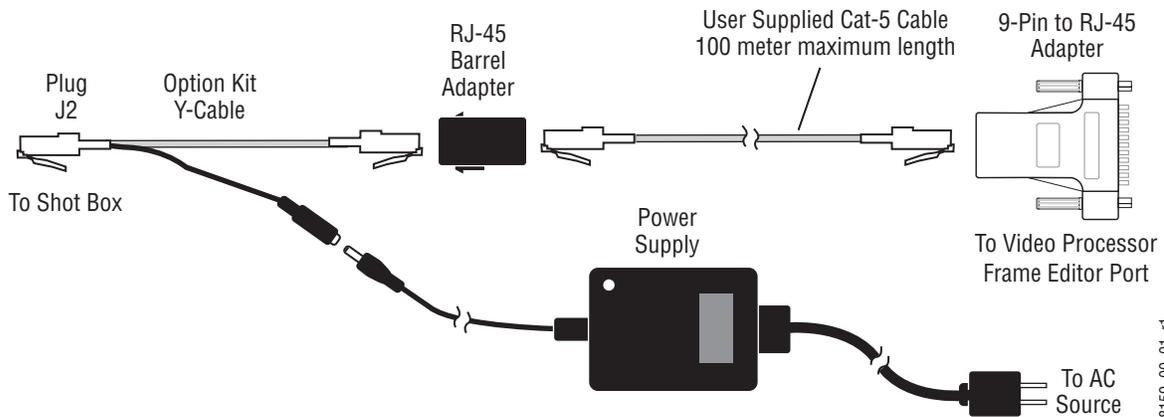


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Satellite Panel Extension Kit

The Satellite Panel extension kit (and user supplied Cat-5 cable) replaces any existing Shot Box cabling. Power is supplied by the power supply, not the Main panel. The single-connector end of the Y-cable connects to the Shot Box, and the other RJ-45 cable end connects via adapters to the Video Processor Frame Editor port (Figure 92).

Figure 92. Shot Box Panel Extension Cabling, Editor Port Connection



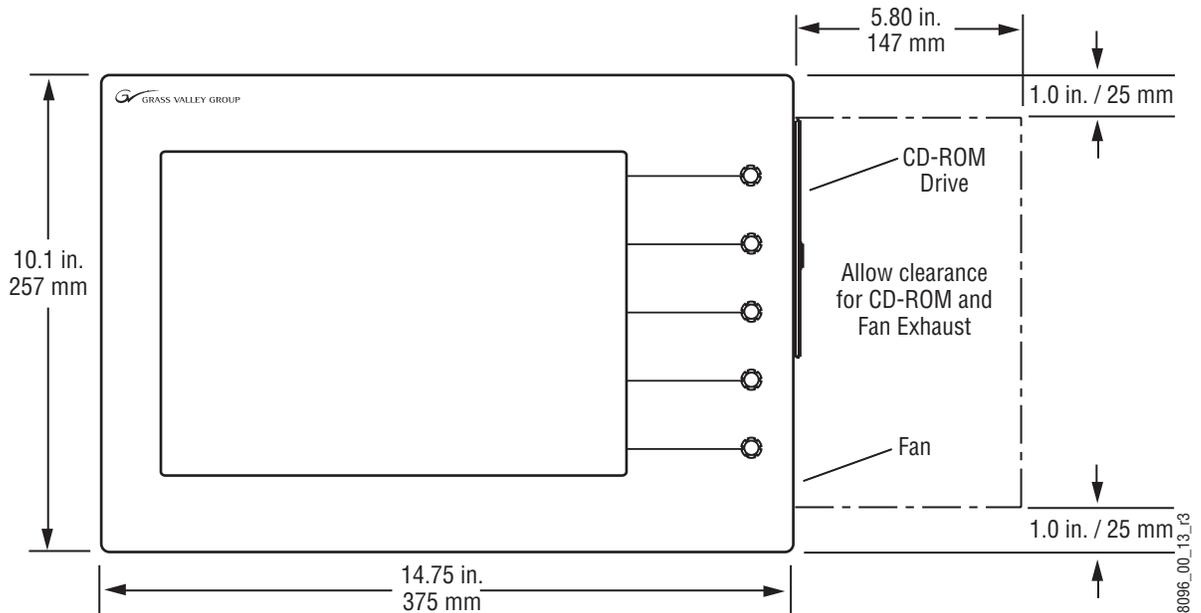
8159_00_01_r1

The default Video Processor frame editor port is J11, but a different port can be configured if desired using the Eng Setup Port & Device Definition menu.

Menu Panel Installation

The Kalypso Menu panel can be installed in a variety of ways to meet individual preferences.

Figure 93. Menu Panel Dimensions



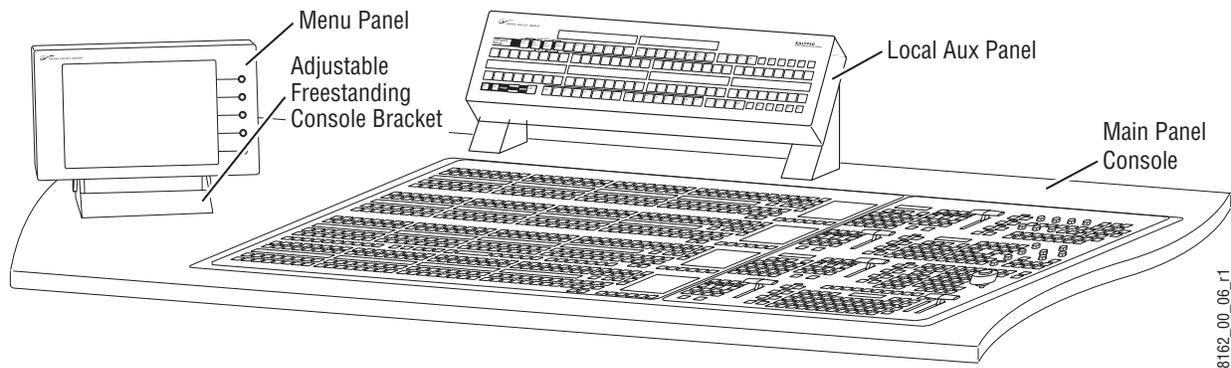
Menu Panel Ventilation

Air is drawn into the Menu panel through slots along the top and left side of the panel. Air is expelled out of the Menu panel by a fan located on the right side of the panel (see Figure 93). When mounting the panel, be sure to leave either the top or left side slots unobstructed for proper air intake. The right side of the panel requires clearance for the fan exhaust.

Recommended Mounting Location

The recommended mounting location for the Menu panel is to the left or right of the Main panel (see Figure 94). This provides the most comfortable reach to the touch screen, soft knobs, and internal CD-ROM and also clears the area for better viewing of monitors beyond the Main panel. When considering mounting options, remember that the optimum Menu panel viewing angle is 90 degrees in both the horizontal and vertical planes.

Figure 94. Recommended Menu Panel Mounting Location



CAUTION When finalizing the location of the Menu panel, be sure to open the Main panel lid and check for sufficient clearance between the Menu panel and the Main panel components. Without sufficient clearance, the lever arm or joystick could damage the Touch Screen when the Main panel is opened.

Available Mounting Brackets

When ordering your system, you will specify the type of Menu panel mounting bracket. Three different mounting brackets are available to provide a wide variety of installation options. One bracket type is included with each system, and one additional bracket of your choice is also included.

- Adaptable Mounting bracket (always included), and choose either
- Adjustable Freestanding Console bracket,
- or -
- Flush Mount kit.

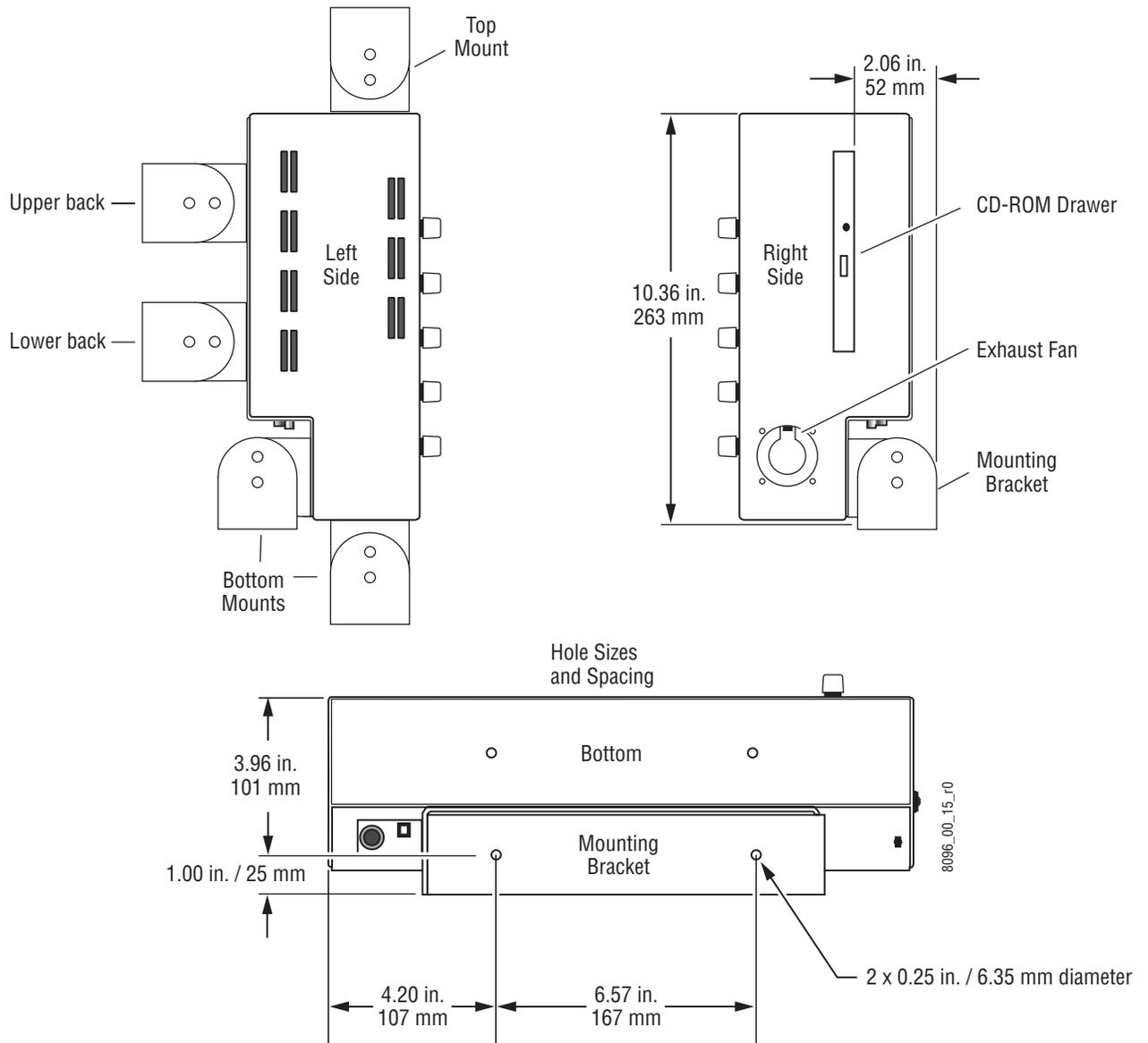
If a preference is not given, the Flush Mount kit will be shipped.

CAUTION All Menu panel mounting holes are tapped 10-32. Do not penetrate the case more than 0.24 in. / 6.10 mm.

Adaptable Mounting Bracket

The Adaptable Mounting bracket allows the Menu panel to be mounted from above, from below, or from the back, using pairs of screw holes as shown in [Figure 95](#).

Figure 95. Optional Placement of Adaptable Mounting Bracket



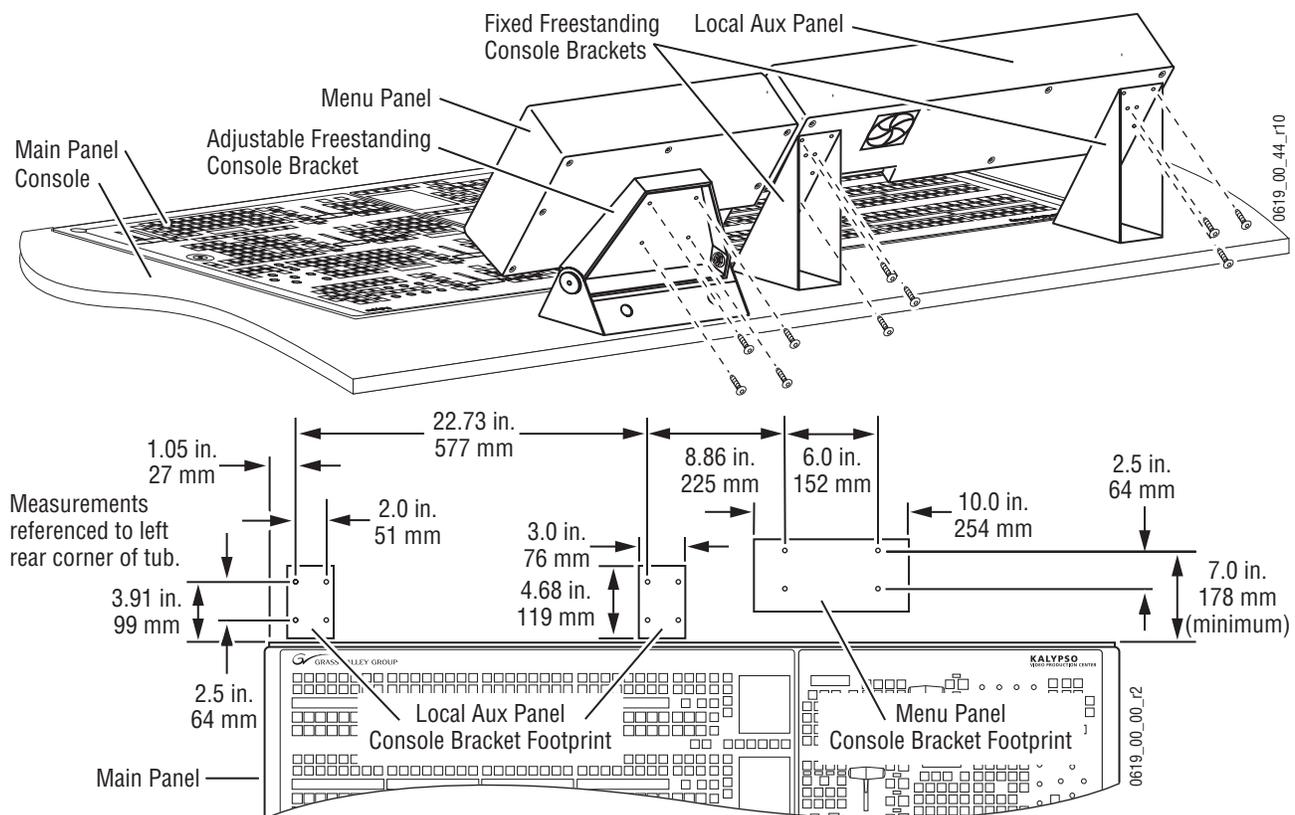
This Adaptable Mounting bracket allows the Menu panel to be tilted on a horizontal axis for optimum viewing. After the final location and angle of the Menu panel has been established, tighten the clamping pivot screws. This bracket is not intended to be friction-lock adjustable.

Adjustable Freestanding Console Bracket

A single four-hole pattern on the back of the Menu panel (Figure 9 on page 32) connects to the Adjustable Freestanding Console bracket. This bracket's friction-lock can be set during installation to allow the user to tilt the Menu panel on a horizontal axis during use for optimum viewing.

The Adjustable Freestanding Console bracket can be used to mount the Menu panel to the console in the recommended position (Figure 94 on page 112). The Menu panel can also be mounted above the Main panel with this bracket, as shown in Figure 96. If installed in this orientation, follow the recommended mounting dimensions to ensure adequate clearance when the Main panel lid is opened.

Figure 96. Optional Placement of Menu Panel



If an overhang or wall exists by the Main panel, this bracket can be rotated to allow mounting the Menu panel to that surface (like the Adaptable Mounting bracket).

The four hole pattern in the Menu panel are also designed to work with a user-supplied articulated arm, for even more flexibility.

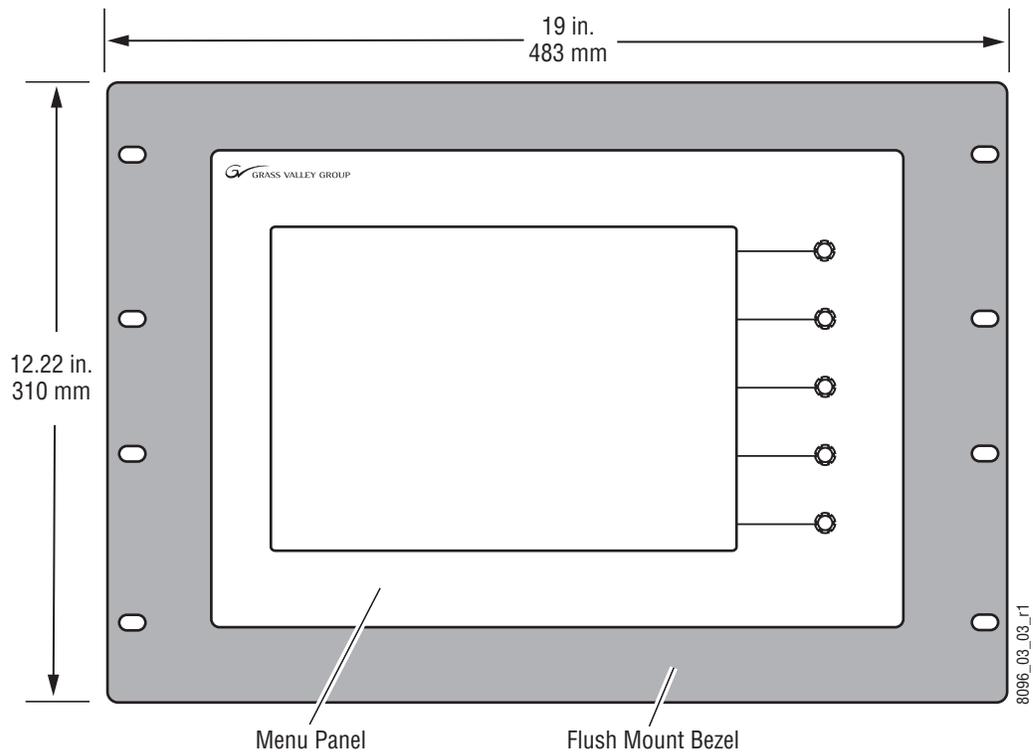
Flush Mount Kit

The Flush Mount kit allows the Menu panel to be installed in a standard 19 in. (483 mm) rack (Figure 97), occupying seven rack units. Alternatively, the Menu panel can be set into a console cutout (Figure 99 on page 117).

Access to the CD-ROM on the right side of the Menu panel is blocked with this mounting option, so an external CD-ROM with a USB cable is provided. The external CD-ROM drive connects to one of the two USB ports on the Menu panel, and receives its power through this cable.

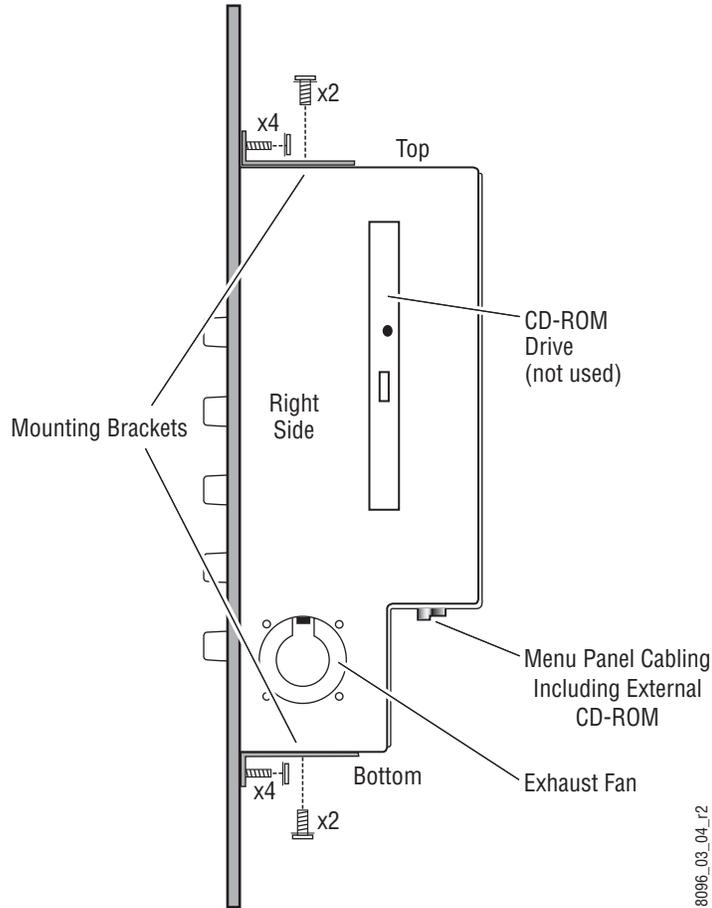
Clearance for the exhaust fan on the right side of the panel and the interconnect cables to the external CD-ROM, Main panel and Video Processor frame on the bottom of the panel must also be taken into consideration when mounting the panel in this manner.

Figure 97. Optional Flush Mount Kit



The Flush Mount bezel is attached to the top and bottom of the Menu panel with two mounting brackets as shown in [Figure 98](#). Four #10 screws are included for attaching the Flush Mount assembly to the Menu panel.

Figure 98. Attaching Flush Mount Bezel to Menu Panel



To install the Menu panel into a console cutout the Flush Mount bezel is removed. The mounting brackets directly support the top and bottom of the Menu panel ([Figure 99](#) on page 117). Eight wood screws (not provided) are required for securing the mounting brackets to the console. Dimensions for the console cutout without the Flush Mount bezel are given in [Figure 100](#). For the best cosmetics, it is recommended to have the Main panel protrude slightly above the console surface to conceal the cut console edge.

CAUTION Console thickness should not be less than 0.5 in./13 mm for proper support of the Menu panel.

Figure 99. Menu Panel Console Installation

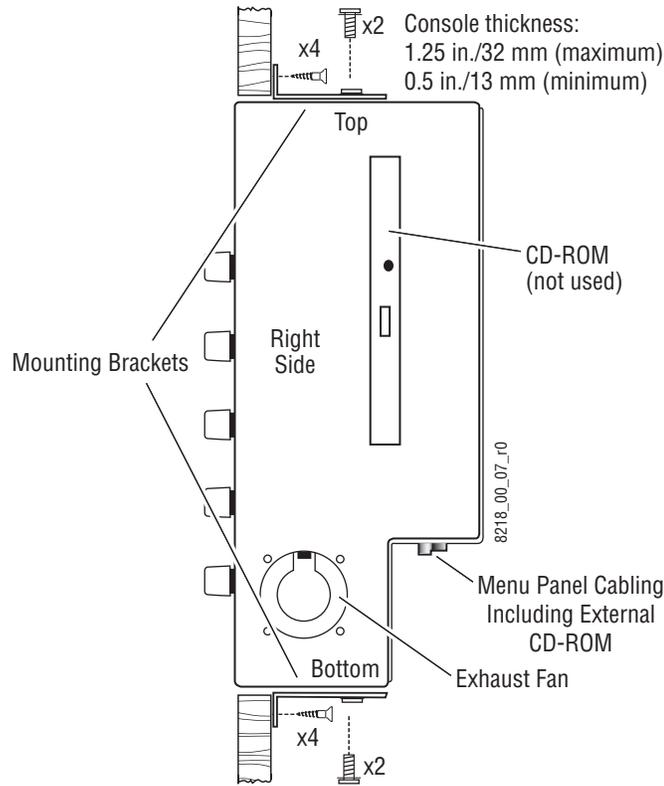
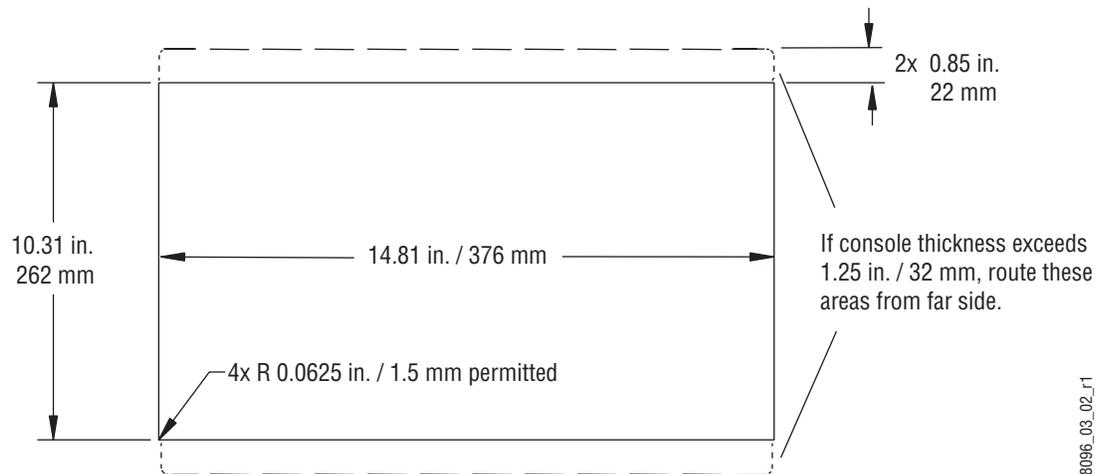


Figure 100. Menu Panel Console Cutout Dimensions



Power Cabling

The Menu panel is normally receives its power from the Main panel. The Menu panel can be powered separately, using the same model optional power supply available for the Local Aux panel.

Mouse and Keyboard Connections

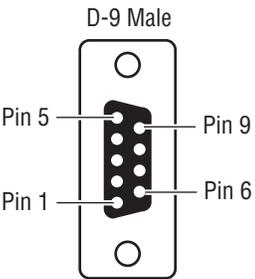
A standard PS/2 mouse and keyboard can be installed to the bottom of the Menu panel if desired. Be sure to power down before installing either the mouse or keyboard.

Cable Polarity and Cross Over Button

The point-to-point connections between the Main and Menu panels and the Video Processor frame require that the Transmit (TX) and Receive (RX) pairs in the Ethernet cables be swapped. This is normally achieved with a special peer-to-peer (crossover) LAN cable or an Uplink port on the switch or hub. If you use straight through LAN cables, you can swap the polarity of the TX and RX pairs in the proper manner with the **Cross Over** button provided on the rear of the Menu panel. Pressing the **Cross Over** button will either swap or unswap the polarity of the TX and RX pairs. The button itself does not indicate the polarity state. Correct polarity can be determined after power up of the system. The LAN Link LED at the LAN cable connector illuminates after power up to indicate the physical connection is correct. If no communication can be established, perhaps because of incorrect cable polarity, the LED will not illuminate. Press the **Cross Over** button on the Menu panel to reverse the cable polarity.

Menu Panel Pinouts

Table 16. Menu Panel Serial Ports

Serial Ports RS-232	Pin	Menu Proc. COM 3	Menu Proc. COM 4
 <p>D-9 Male</p> <p>Pin 5 Pin 9</p> <p>Pin 1 Pin 6</p>	1	DSD	DSD
	2	RXD	RXD
	3	TXD	TXD
	4	DTR	DTR
	5	Chassis GND	Chassis GND
	6	DSR	DSR
	7	RTS	RTS
	8	CTS	CTS
	9	Menu Reset ^a	RI (Ring Indicator)

^a Open circuit or Mark (-5 to -15 volts) is run. Space (+5 to +15 volts) is reset.

Removable Media Drives

Zip Drive

No special mounting brackets or specific placement is required for the Zip drive. Placement is restricted only by cable length. A 1.83 m (6 ft.) USB cable is provided. The Zip drive connects to either USB port on the Menu panel, and is powered through its USB cable. The Zip drive accommodates 100 MB or 250 MB removable disks. One 250 MB Zip disk is included.

Optional External CD-ROM Drive

No special mounting brackets or specific placement is required for the optional external CD-ROM drive. Placement is restricted only by cable length. The CD-ROM ships with a short custom USB adapter cable. A 1.83 m (6 ft.) male A to female A USB extension cable is provided.

Additional Touch Screen Display Option

As an option, an additional Touch Screen Display can be purchased for use with a Kalypso system. This option consists of an Enhanced Menu panel and power supply.

When configured and connected to the Kalypso network, the additional Touch Screen Display can be used to control the Kalypso system just like the first Menu panel. The only difference in operation is Main panel DPOPs do not affect the additional Menu panel (unless the Main panel is configured to use the IP address of the additional Menu panel instead of the first Menu panel). Multiple additional Menu panels can be added to a Kalypso system, if desired.

Installation and Configuration

You need the following items to complete this procedure:

- PS/2 keyboard and mouse, and
- Kalypso Software CD (the version currently installed on your Kalypso system).

Because the Touch Screen Display is essentially a customized PC compatible with a built-in touch screen, it supports stand-alone operation and so can be configured anywhere. It need not be connected to a Kalypso system

or be physically installed at its final destination. It is in fact safer to configure the unit and install software while the unit is isolated from the network.

1. Connect the PS/2 keyboard and mouse to the new Touch Screen display.
2. Connect the additional Touch Screen Display to the power supply, and connect the power supply to a source of electrical power.
3. Leave the Touch Screen Display Ethernet port disconnected from the Kalypso network at this time, to prevent potential Ethernet conflicts.
4. Ensure you have clear access to the CD-ROM on the side of the unit.
5. Power on the Touch Screen Display.
6. Set the IP addresses of the Touch Screen Display to unique numbers appropriate for your Kalypso network using standard Windows 2000 methods:
 - a. Go to **Settings> Network and Dial-Up Connections> Local Area Connection> Properties> TCP/IP> Properties**.
 - b. Select **Use the following IP address**.
 - c. Enter the IP address and Subnet Mask
 - d. If you plan to access the Kalypso system with this Touch Screen Display from a different network, enter the Kalypso system Gateway address.
 - e. Select **OK**.
7. Restart Windows 2000 to make the IP address changes take effect.
8. Install the Kalypso Menu panel software on the Touch Screen Display using the Kalypso software CD.

Note Use the **Menu on PC** checkbox in the Kalypso Software Update Tool to prevent installing unnecessary files onto the Touch Screen Display.

9. Connect the additional Menu panel to the Ethernet network.
10. Touch the **Kalypso Menu** icon on the desktop. The Menu application will launch.
11. Go to **Eng Setup, System, Config** and enter the IP address of the Video Processor frame. If the Still Store option is present, also enter the IP address of the Still Store.
12. Restart the Kalypso Menu application.
13. Touch the **Kalypso Menu** icon on the desktop. The Menu application will launch.

14. Confirm the additional Touch Screen Display now provides control of the Kalypso system.
15. Complete the hardware installation of the Touch Screen Display in the desired final location using the mounting brackets provided.

When setting up a multiple panel system that includes both another Main panel as well as a Menu panel, it is important to associate the correct panels so that the control surfaces don't interact. The Main panel and Menu panel reference each other to support the DPOP mechanism. If a second control surface includes both a Main panel and a Menu panel, make sure they specify each other's IP address.

Kalypso System Control via PC

The Kalypso Menu application can be installed on a PC, which can be configured with the Kalypso network to provide an additional control point to the Kalypso system. Menu knobs are not available when running on a PC, but knob values can be input with the popup keypad.

CAUTION Access to the PC should be controlled when the Kalypso system is in use, to prevent accidental changes to Kalypso system operations.

PC Requirements

The PC must have at least 128 MB RAM, a 350 MHz processor (or higher if running multiple applications), an 800 x 600 screen, and either Windows NT 4.0 with Service Pack 4 (or higher), Windows 2000, or Windows XP. The PC must also support 10Base-T or 100Base-T Ethernet.

Hardware Installation

Connect a Category 5 Ethernet cable from the PC to the Kalypso network, either indirectly via a properly configured network gateway, or by directly plugging the cable into an available port on the Kalypso system network switch. If using a direct connection, the PC's IP address must be compatible with the Kalypso system network.

Software Installation

Note The PC must be rebooted to complete the installation. Close all open applications before doing the install.

1. Insert the Kalypso Software CD into the PC's CD-ROM drive and accept the license agreement.

2. Select the **Menu on PC** check box and click on **Install**.
3. When you finish the installation the Kalypso Menu application icon will appear on the desktop.

Configuration

1. Run the Kalypso Menu application, by double clicking on its icon.
2. Click on the **Eng Setup, System, Config**, to display hardware IP address fields.
3. Click on the Hardware **Frame IP** data pad and enter the IP address of the Kalypso frame you wish to control.
4. If your system is equipped with the Still Store option you must also enter its IP address in the SStore IP address field.
5. Exit the Kalypso Menu application and restart it.

Do Not Use Large Fonts with Menu on PC

When running the Kalypso Menu on a PC, the menu may not be drawn correctly if the Large Fonts display setting is selected.

For Windows 2000, the Font Size setting is in the Display Control Panel. Select Settings and then Advanced. It must be set to “Small Fonts”. Normal Size (96 dpi) should appear below. A Windows restart is required.

For Windows NT, the Font Size setting is in the Display Control Panel Settings tab (no Advanced subdialog).

You can use a search of “use larger or smaller display fonts” to locate the appropriate instructions in Windows Help.

Operation

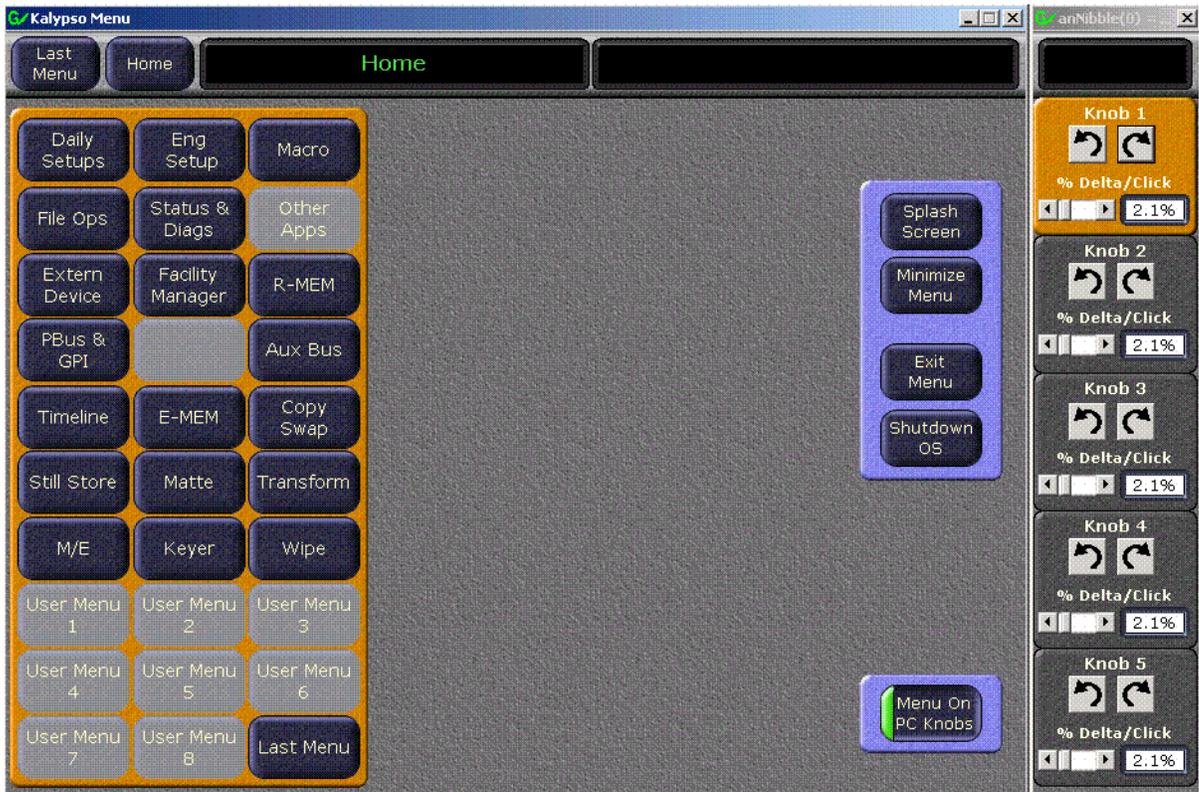
Once configured, any changes made on the Kalypso Menu running on the PC will affect the Kalypso system it is communicating with. This means control can originate from the Kalypso Main panel, the Local Aux panel, or the Kalypso Menu panel (all of which are typically manned by a single operator), and also from the PC, which may be located anywhere in the facility. No priority is given to any of these control points. Obviously, care must be taken to coordinate Kalypso system operation when multiple control points are present, especially if the control points reside in separate locations.

Note Should two commands be issued at the same instant, there is no way to predict the order the commands will be executed. The Ethernet collision mechanism re-sends colliding messages. Whichever command happens to be reissued first will be sent, followed by the other command.

Menu on PC Knobs

Knob controls are available to users of the Menu on PC application. From the Home menu, touch the **Menu on PC Knobs** button to display the controls (Figure 101).

Figure 101. Menu on PC Knob Controls

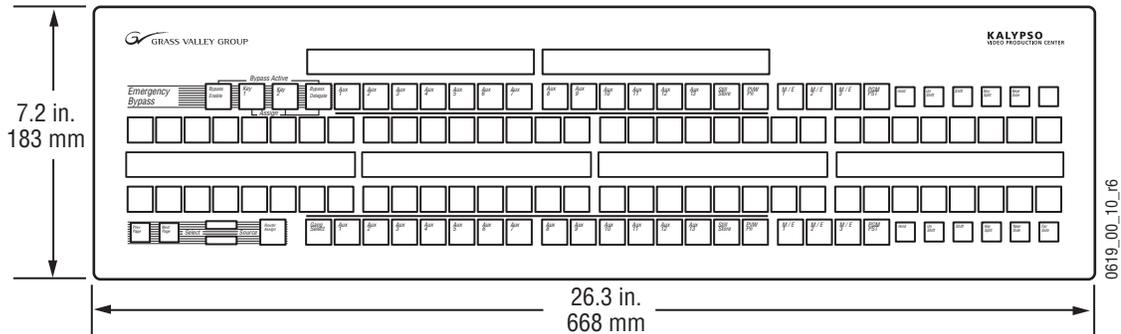


Clicking on the clockwise and counterclockwise arrows changes the associated knob value. On some parameters the **% Delta/Click** slider control can change how much the knob value changes per click. Other parameters (like menu item selections) are not affected by the delta control.

Local Aux Panel Installation

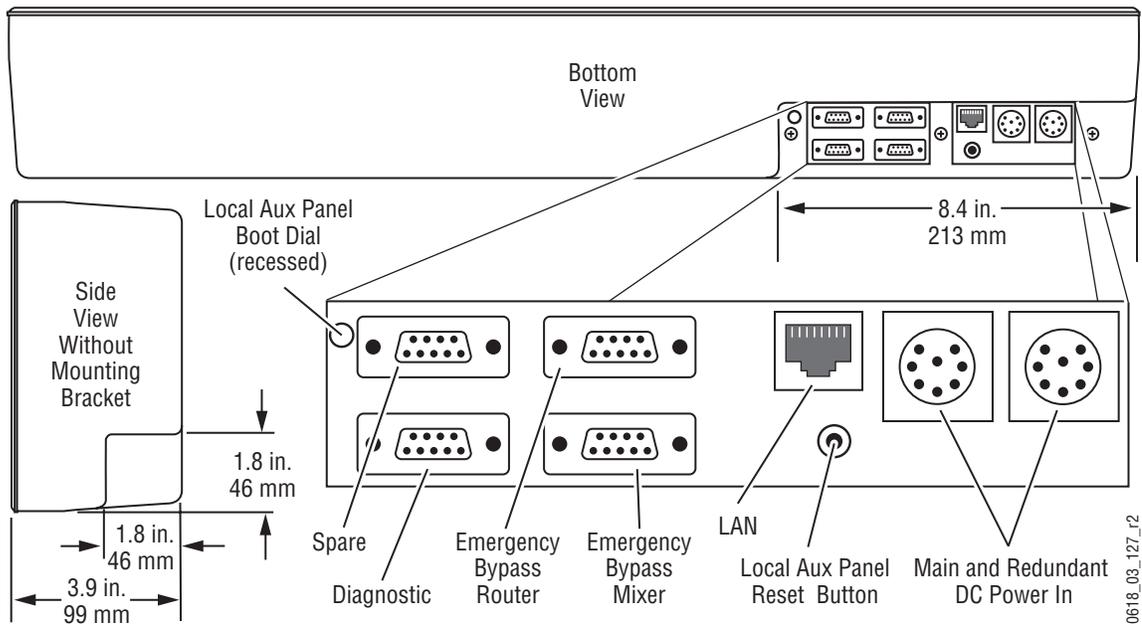
The Local Aux panel (Figure 102) provides control of Kalypso system Aux buses, switched preview, router source selection, Still Store option source selection, and Emergency Bypass option operation. The Local Aux panel has been integrated into the design of the 2-M/E Main panel, so a separate Local Aux panel is not provided with 2-M/E systems.

Figure 102. Local Aux Panel Dimensions



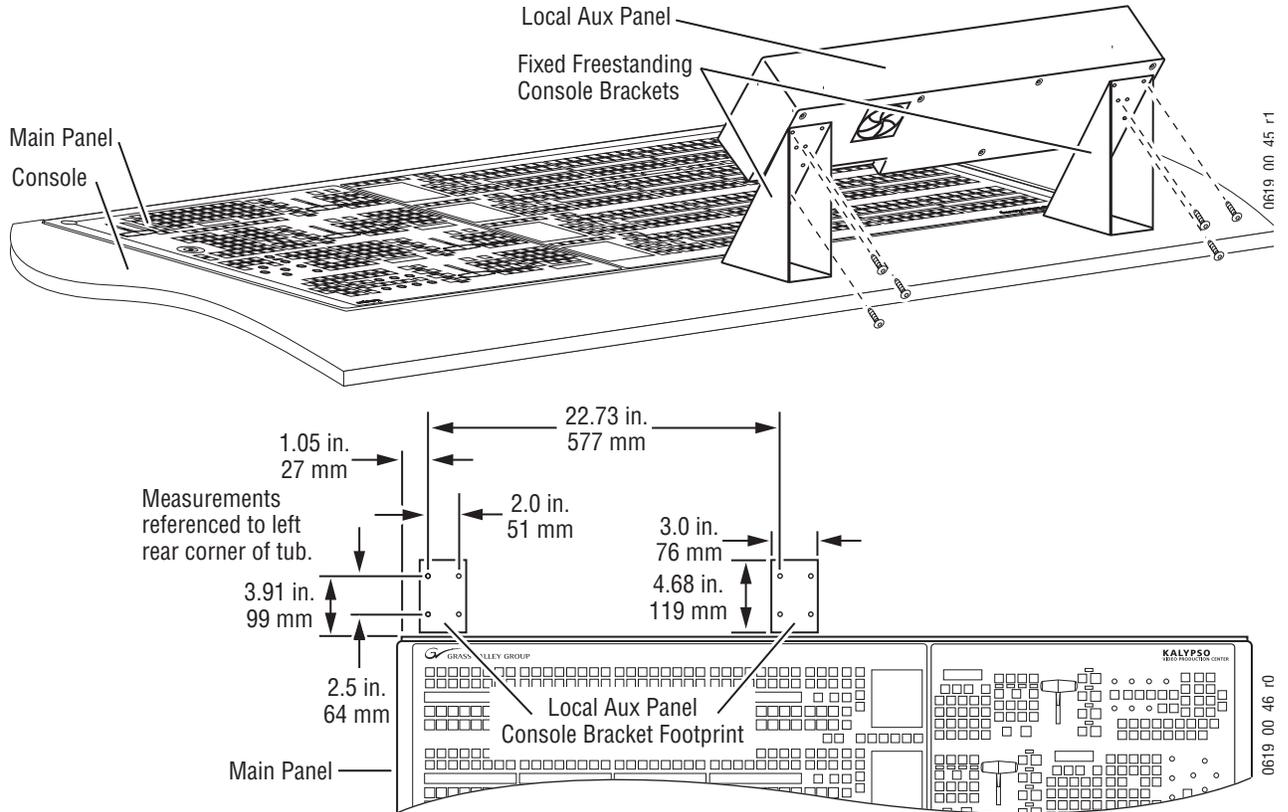
Ports located on the rear of the Local Aux panel (Figure 103) provide connections to the Kalypso Main panel. The Kalypso system may be configured with several other types of Remote Aux panels. Refer to the Kalypso *Ordering Guide* for more information on these panels.

Figure 103. Local Aux Panel Connections



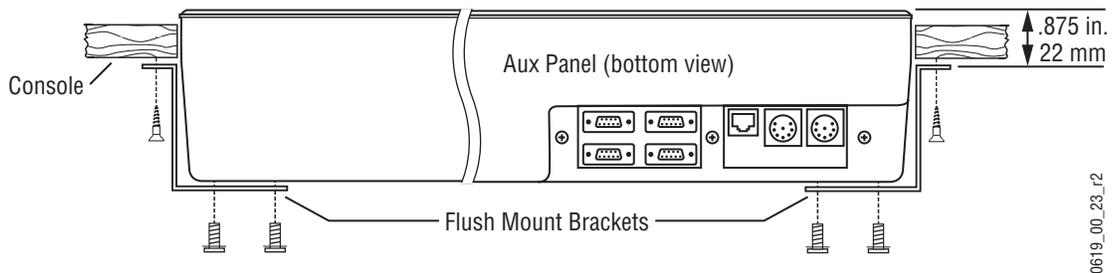
Console mounting brackets ship with the Local Aux panel. [Figure 104](#) provides guidance for mounting the Local Aux panel on its console brackets so that its Source Selection buttons align with those on the 4-M/E Main panel.

Figure 104. Recommended Bracket Placement for Console Mounting Local Aux Panel



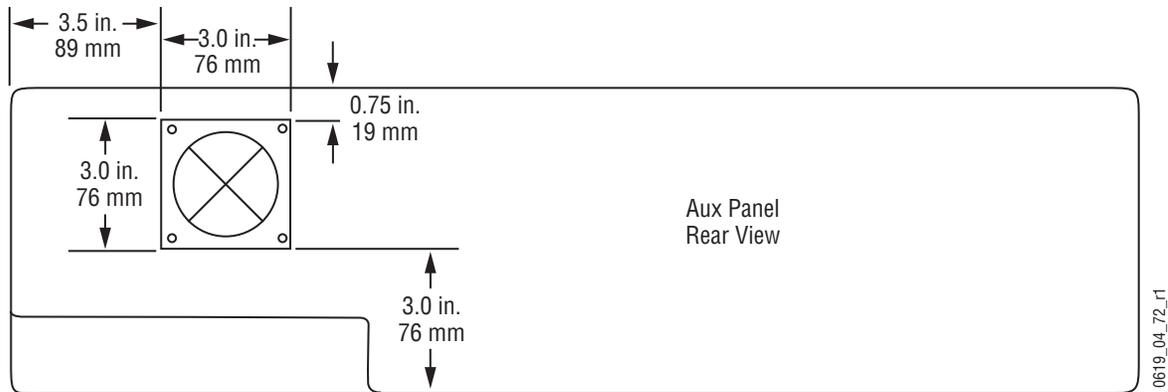
As an alternative to the console surface mount brackets shown above, the optional flush mount brackets depicted in [Figure 105](#) provide console flush mount capability.

Figure 105. Local Aux Panel Console Flush Mount



When flush mounting the Local Aux panel, leave the area near the fan open for cooling (Figure 106).

Figure 106. Local Aux Panel Fan Position



Emergency Bypass Option

The Emergency Bypass option provides a redundant video and control path that can be used to stay on air in the unlikely event that the Kalypso Main panel or Video Processor frame become inoperative. Operator control is provided by the Local Aux panel. The Emergency Bypass option uses an external router to perform the actual source selections.

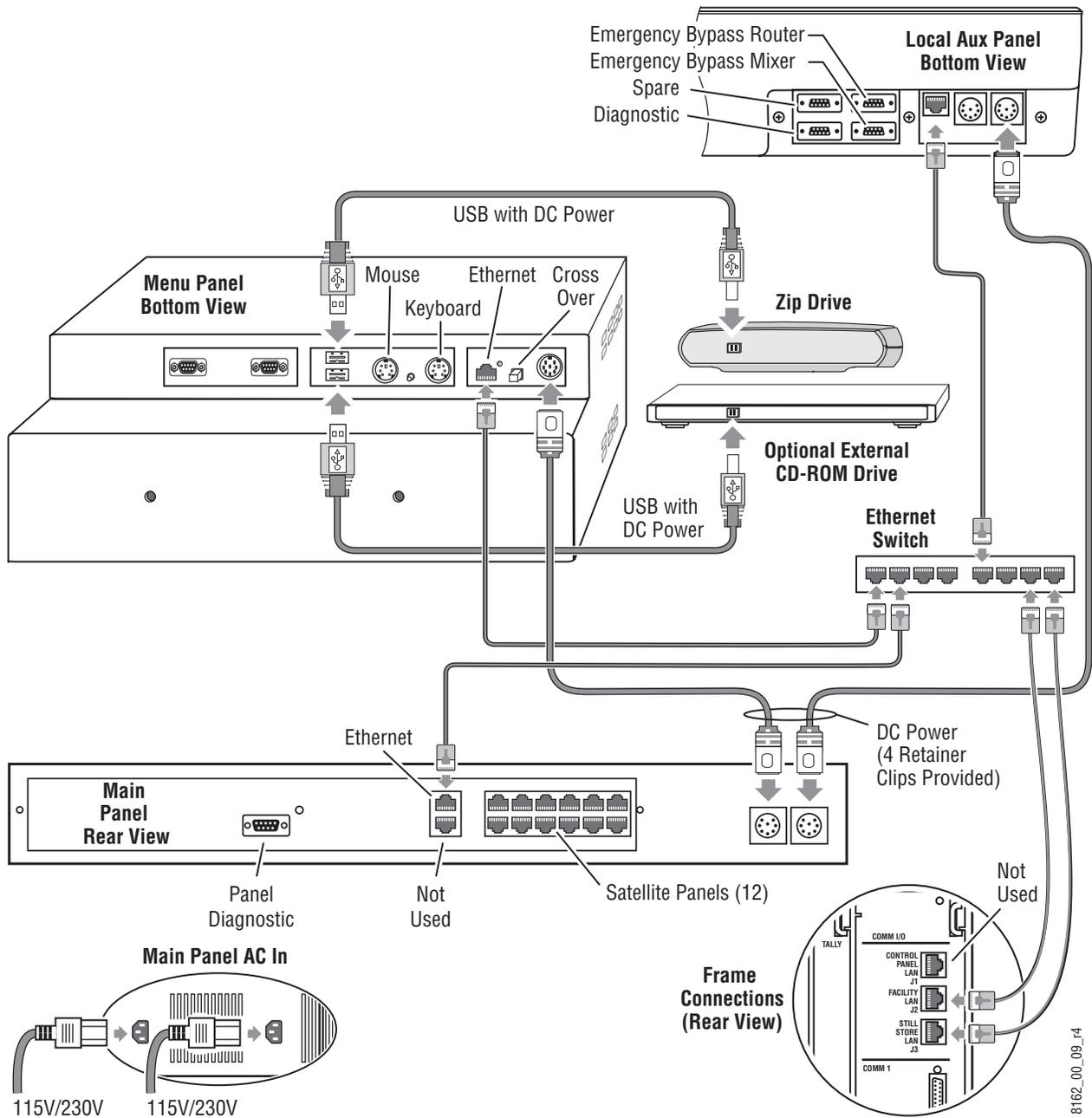
Installation, configuration, and operating instructions are covered in the separate *Emergency Bypass Instruction Manual* provided with the Emergency Bypass Option hardware.

Kalypso System Cabling

Control Cabling

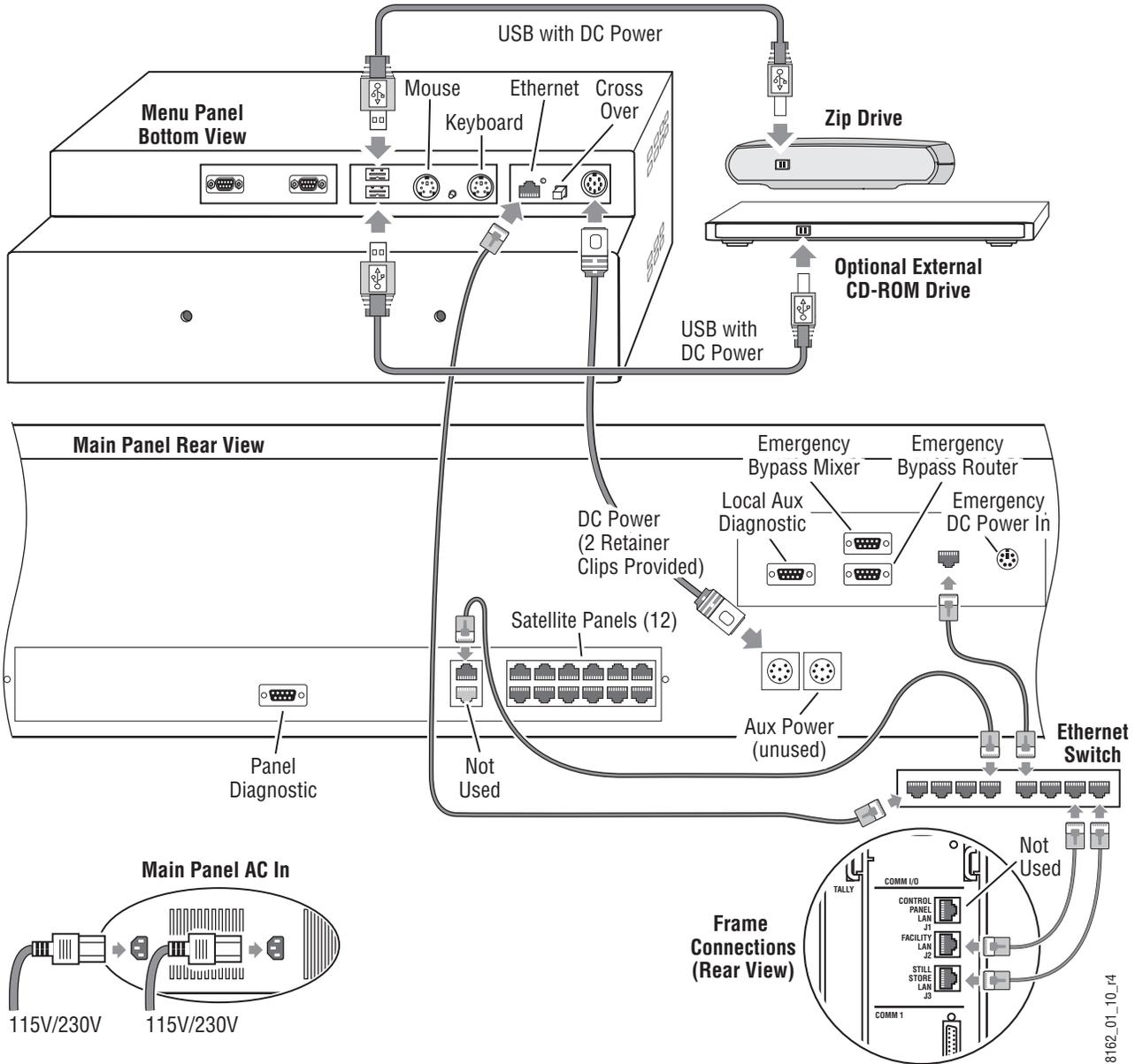
Figure 107 shows cabling for a standard 4-M/E Kalypso Control Surface.

Figure 107. Standard 4-M/E Control Surface Cabling



The cabling of a standard 2-M/E Kalypso Control Surface is illustrated in [Figure 108](#). Because the Local Aux panel is built into the 2-M/E Main panel, its LAN connector (located on the rear of the Main panel) is connected directly to the Ethernet switch.

Figure 108. Standard 2-M/E Control Surface Cabling



The Kalypso system uses Ethernet and serial control. Tally and GPI control are also available. Overall system control for late model Kalypso systems is shown in [Figure 38](#) on page 53 and [Figure 39](#) on page 54.

Cables Provided

The following cables are provided with a standard 4-M/E system.

Table 17. Supplied Cables

Cable	Description	Quantity	Part Number
Power Supply AC line cord	AC line cord kit	1	
Power Supply to Frame DC supply cable	DC power cable	1	
Main Panel AC line cord	AC line cord kit	1	650-4175-XX
Main Panel to Local Aux Panel DC power ^a	8-pin DIN, male-to-male, 2 ft. (0.6 m)	1	174-4447-00
Main Panel to Menu Panel DC power	8-pin DIN, male-to-male, 10 ft. (3 m)	1	174-4447-10
Menu Panel to ZIP 250 USB	USB A to B, 6 ft. (1.8 m)	1	174-8160-00
Menu Panel to External CD-ROM USB ^b	USB extension male A to female A (1.8 m)	1	174-8168-00

^a Pre-installed inside each 2-M/E Main panel

^b Included only with Flush Mount Bracket kit.

Cables provided with the 2-M/E Kalypso system are identical to those supplied with the 4-M/E system, except Local Aux cabling is pre-installed inside the 2-M/E Main panel tub. Local Aux cable connections are located on the rear of the 2-M/E Main panel.

All Ethernet components must be supplied by the customer. Refer to [LAN Requirements](#) for more information.

LAN Requirements

The Kalypso system requires an Ethernet Local Area Network (LAN). The Video Processor frame, Main panel, Local Aux and Menu panels, Still Store option, 32-Crosspoint Remote Aux panels and external Machine Control devices are all connected via an appropriately sized Ethernet switch (refer to [Figure 109](#), [Figure 110](#) and [Figure 111](#)).

CAUTION Ethernet hubs are not acceptable for the main Kalypso Ethernet interconnect. Use of a hub instead of a switch may cause sluggish responses to panel button presses and erratic lever arm motion. Connect all Kalypso nodes to the same switch to avoid sluggish or erratic response. An existing facility Ethernet switch (not hub) can support Kalypso if an adequate number of ports are available. Keep your facility network and technical network separate in order to avoid network traffic negatively affecting Kalypso system operation.

Refer to [Table 18](#) for Ethernet specifications. All Ethernet components must be supplied by the customer.

Table 18. Ethernet Specifications

Cables^a	Type	10Base-T and 100Base-T compatible. Category 5 cable, 8 conductor twisted pair.
	Connectors	RJ-45 male connector at each end of cable.
	Length^b	10Base-T: 300 m (984 ft) maximum. 100Base-T: 100 m (328 ft) maximum.
Switch	Speed	Dual: 10 and 100 Mb
	Ports	RJ-45 auto-negotiating 10/100 Mb; number of ports required is dependent upon system size.
	Unmanaged	Recommended. Configuration is not required, but does not provide remote monitoring capability.
	Managed	May be used. Requires configuration, but offers remote monitoring capability.

^a The system will work at 10Base-T with reduced performance. 100Base-T components are highly recommended.

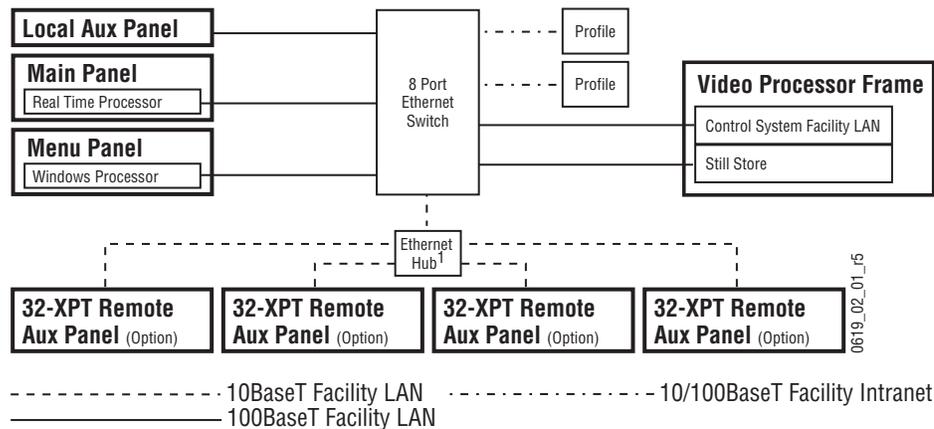
^b Use a hub when necessary to exceed maximum cable runs.

Ethernet Switches and Hubs

Kalypso components rely primarily on Ethernet switches for LAN interconnects. Remote Auxiliary panels may be connected directly to the Kalypso switch, or through an Ethernet hub. A hub is required only if there is a need to exceed 100 m (328 ft) between the Main panel and Video Processor frame (refer to [Figure 110](#) and [Figure 111](#)). If a hub is used, connect hub to switch via the Uplink port, or through a peer-to-peer (crossover) cable. Reserve a port on Kalypso’s Ethernet switch if you will be utilizing an existing hub or switch (see [Figure 110](#)).

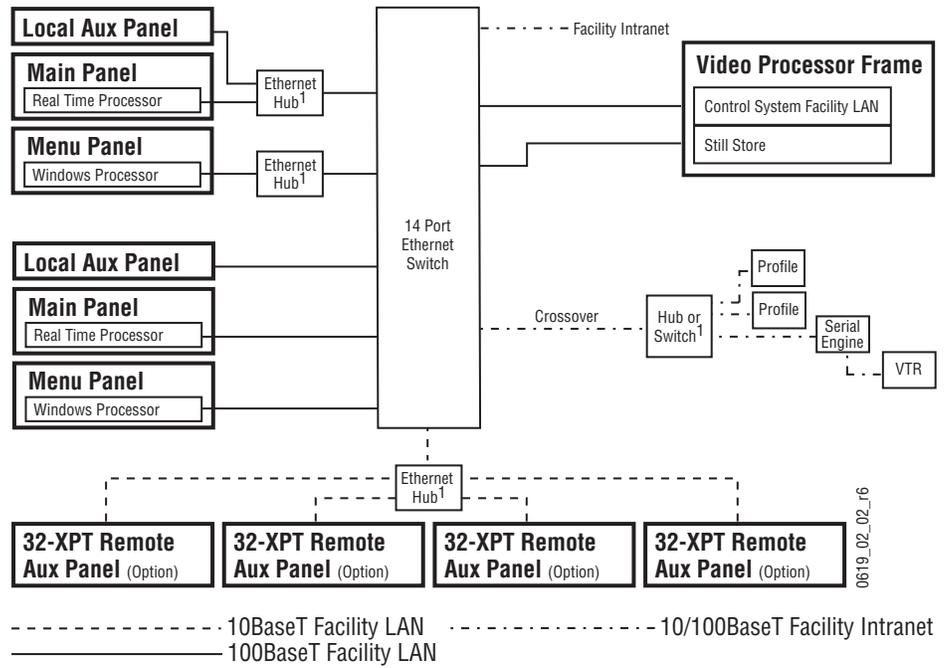
Note The number and type of components in your Kalypso system determines the size of the switch (number of ports) required. Refer to the following examples of system topography and the accompanying worksheet to determine the number of ports required for your system.

Figure 109. Example Topography Requiring an Eight Port Ethernet Switch



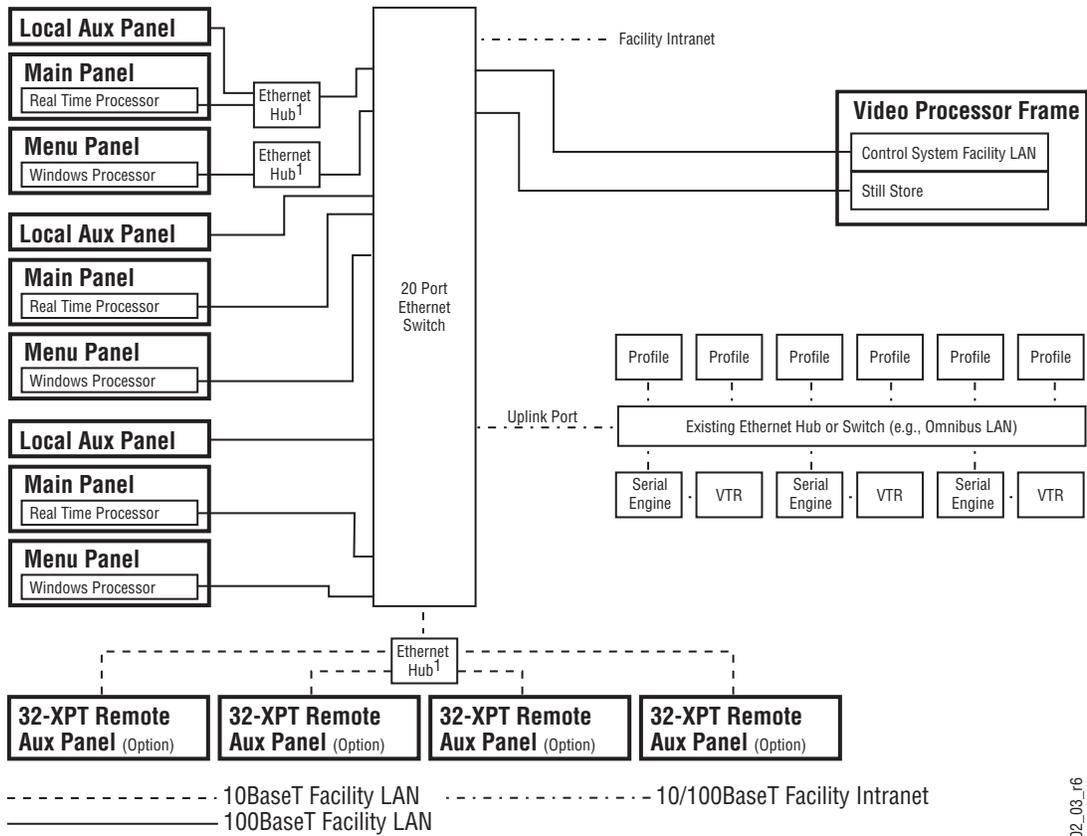
¹ Use hubs to exceed 100 m (328 ft.) cable limitations.

Figure 110. Example Topography Requiring a Fourteen Port Ethernet Switch



¹ Use hubs to exceed 100 m (328 ft.) cable limitations.

Figure 111. Example Topography Requiring a Twenty Port Ethernet Switch



¹ Use hubs to exceed 100 m (328 ft.) cable limitations.

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Standard System Components	Ports Required		Number of Components		
Frame	3	X	<input type="text"/>	=	<input type="text"/>
Main Control Panel	1	X	<input type="text"/>	=	<input type="text"/>
Local Auxiliary Panel	1	X	<input type="text"/>	=	<input type="text"/>
Menu Panel	1	X	<input type="text"/>	=	<input type="text"/>
Kalypso Options					
Facility Intranet	1 ^a	X	<input type="text"/>	=	<input type="text"/>
32-Crosspoint Remote Aux Panel Hub	1 ^a	X	<input type="text"/> (# of Hubs)	=	<input type="text"/>
Kalypso Machine Control Option					
Profiles (Direct to Switch) ^b	1 ^a	X	<input type="text"/>	=	<input type="text"/>
Profiles (Hub or Switch) ^c	1 ^a			=	<input type="text"/>
Existing Omnibus System (Hub or Switch) ^c	1 ^a			=	<input type="text"/>
Total Number of Ports Required:					<input type="text"/>

^a No port required if option not installed.

^b Connect devices directly to the Kalypso switch in small systems which have no other Omnibus components (Figure 109).

^c An existing system will typically have a switch or hub which connects all Serial Engines, Profiles and Machine Control system control panels and managers. Use an Uplink port on the Machine Control switch to make the switch-to-switch or switch-to-hub connection. Alternatively, one port on the switch can be connected to the Kalypso switch via a peer to peer (crossover) cable (Figure 111).

Video Cabling

Different video and control wiring configurations may be used to meet individual facility requirements. All Kalypso system video inputs and outputs are configurable. Each input can be mapped to any Kalypso panel source select button, and any Kalypso system video signal can be mapped to any pair of output connectors. Refer to *Section 1 - Introduction* for an example of a typical Kalypso video cabling scenario.

Inputs

Physical inputs are located at the actual BNC connector that feeds a signal into Kalypso. These non-looping inputs are numbered 1 through 80. Up to five Input modules (one standard, four optional) are located in the Video Processor frame in rear bay slots 6 through 10. Each receives sixteen 270 MHz serial digital video signals from sixteen BNC connectors. All video inputs are software configurable, and each input can be mapped to any Kalypso panel source select button. [Figure 112 on page 134](#) references inputs to module positions in the frame. Refer to [Appendix A-Specifications](#) for connector and cable specifications.

Outputs

Up to five optional Output modules may be installed in the Video Processor frame. Each module provides eight video output signals from the sixteen BNC connectors mounted on the module. Each signal is deserialized, auto-timed to an output reference, and then serialized. Each 270 MHz serial output signal is available on two BNC connectors. Any Kalypso system video signal can be mapped to any pair of output connectors. [Figure 112 on page 134](#) references outputs to module positions in the frame. Refer to [Appendix A-Specifications](#) for connector and cable specifications.

Figure 112. Inputs/Outputs/Tally Relays, by Module

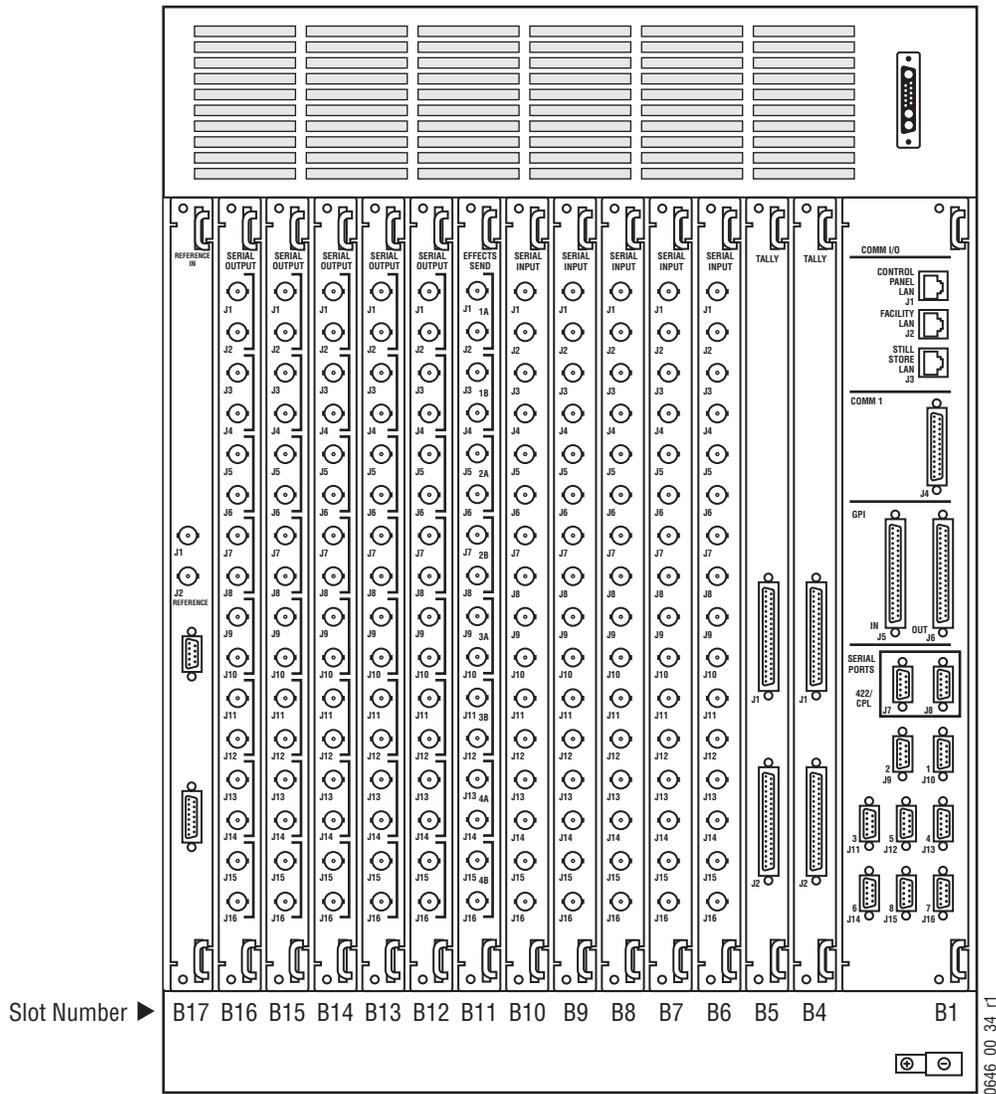


Table 19.

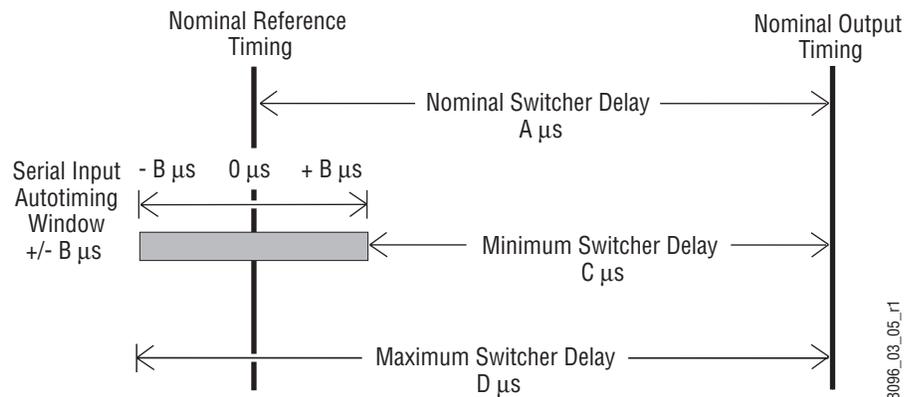
Slot	B16 ^a	B15	B14	B13	B12	B11 ^b	B10	B9	B8	B7	B6	B5	B4
Inputs	--	--	--	--	--	--	1-16	17-32	33-48	49-64	65-80	--	--
Outputs	1-8	2-16	3-24	25-32	33-40	41-48	--	--	--	--	--	--	--
Tally Relays	--	--	--	--	--	--	--	--	--	--	--	1-64	65-128

^a Output module 1 in slot B16 is inactive on standard 2-M/E Kalypso systems.

Kalypso Video Timing and Delay

The total delay of a video input to the switcher output can vary according to the relationship of the input to the switcher reference. The switcher will automatically autotime inputs that fall within an autotiming window. Inputs must be within this range to be properly timed at the output. The calculation of the actual video delay of a specific input is the Nominal Switcher Delay minus the input time location within the autotiming window (the time location value can be zero, positive, or negative). A timing diagram of the input autotiming window and various switcher delay values is provided in [Figure 113](#).

Figure 113. Switcher Timing Diagram



- For inputs entering the switcher in zero time with the reference, the total delay through the switcher is the Nominal Switcher Delay ($A \mu\text{s}$).
- Inputs that reach the switcher at the latest point in the autotiming window ($+B \mu\text{s}$) will have a total delay that equals the time required for switcher processing. This value is the Minimum Switcher Delay ($C \mu\text{s}$).
- Inputs that reach the switcher at the earliest point in the autotiming window ($-B \mu\text{s}$) will have a total delay equal to the Nominal Switcher Delay ($A \mu\text{s}$) plus the autotiming window range. This value is the Maximum Switcher Delay value ($D \mu\text{s}$).

Delay values for a Kalypso system are given in [Table 11](#).

Table 20. Kalypso System Video Delay Values

Nominal Switcher Delay	A	53 μs
Serial Input Autotiming	B	$\pm 10 \mu\text{s}$
Minimum Switcher Delay	C	43 μs
Maximum Switcher Delay	D	63 μs

Note For both 525 and 625 switcher operation, the approximate maximum switcher delay is one line of video.

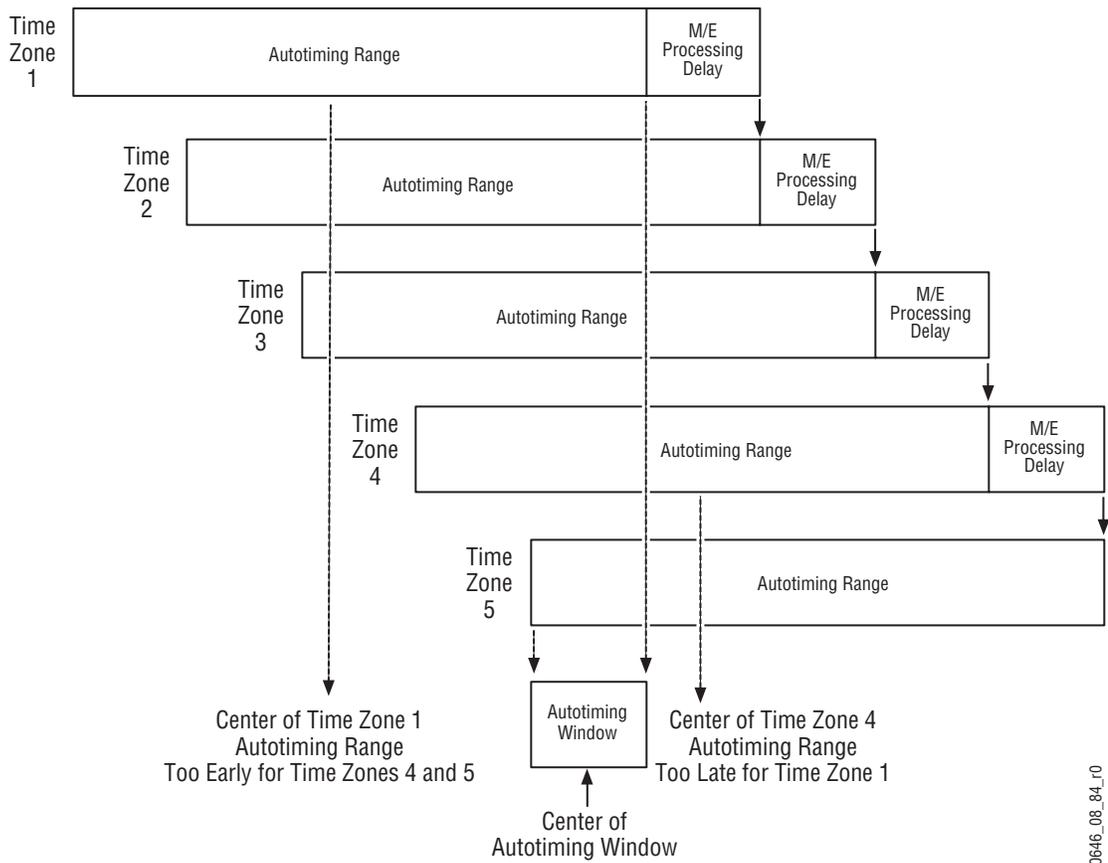
Time Zones and the Autotiming Window

The following discussion provides background information on how the autotiming window is determined, and offers insights that can help when timing your Kalypso system.

Each M/E has a fixed amount of delay from its input to output. To allow reentries to remain in time, M/E timings are staggered such that the up stream M/E outputs are in time (or earlier) than down stream M/E inputs.

A 4 M/E production switcher has five time zones to accommodate reentry through all 4 M/Es to any output. When all M/Es are cascaded into each other the most up stream M/E is in the earliest time zone. Aux buses and other outputs are always in the latest time zone. The overlapping range of all the autotimers is the published autotiming window for the switcher. This is illustrated in Figure 114.

Figure 114. Production Switcher Time Zones



Any source fed to the switcher must be within the autotiming range of all five time zones. If not, the source will be in time on some M/Es but not on others. As illustrated in the figure, a source centered in one time zone's autotiming range can be too early or late for other switcher time zones.

Source Timing Adjustment Procedure

Analog production switchers required sources to be exactly timed with each other and to the switcher internal sources to avoid hue shifts and horizontal hops during transitions and effects. It was easy to adjust source timing simply by looking at the switcher output. Digital production switchers automatically retime sources, however. Source timing no longer needs to be exact, but the autotimers can make it difficult to determine when a source is timed properly.

The following procedure can be used to center a source's timing within the autotiming window of a 4-M/E Kalypso system when a timing analyzer is not available.

1. Set up the Kalypso system so M/E 1 reenters into M/E 2, M/E 2 into M/E 3, and M/E 3 into Pgm Pst. Monitor the video on an Aux bus (or switched preview). This creates a path traversing all five switcher time zones. You will be looking for timing shifts when toggling between that source selected directly on the Aux bus (or switched preview) and when selected on the M/E 1 A bus with this reentry configuration.
2. Select the source directly on the aux bus or PVW Pri. Adjust the output timing of that source until the source is framed vertically in blanking.
3. Decrease the lateness of the source until the source jumps up a line. Note that timing value.
4. Select the source on M/E 1 A bus and monitor M/E 1.
5. Increase the lateness of the source until it jumps down a line. Note that timing value.
6. Set the source timing to a value half way between the values recorded in [Step 3](#) and [Step 5](#).
7. Repeat these steps for all sources.

Note It is not sufficient to find early and late limits in the same reentry position. The preceding time zone discussion explains why this is so.

Related Equipment Options

8950ADC Module - 4:4:4 Chroma Key Processing

The 8950ADC module in Grass Valley's 8900 modular product line can be configured to support Kalypso chroma key processing.

Overview

In CCIR-601 digital signals, luminance (Y) is sampled at twice the rate of the two chrominance signals (Cr, Cb) – hence the 4:2:2 designation to indicate the sampling rate for Y:Cr:Cb respectively. So every pixel on the screen has a unique luminance value, but color information is transmitted for every other pixel. The receiving device typically repeats one chrominance value for two pixels, or generates the missing values by some form of interpolation. In neither case is the information regained that was lost by the original filtering to 4:2:2. This works for most video processing and transmission applications since the human eye is not nearly as responsive to color changes as it is to luminance changes. However, in chroma key processing, the user is selecting a particular color out of a scene, so chrominance bandwidth is paramount to achieving the best results.

In most cases, you can achieve excellent results even when using a 4:2:2 signal as both the video fill and the chroma key source. Pre-processing in the chroma keyer uses interpolation as described above in order to have a chrominance value for each pixel. In some critical applications, however, there is something to be gained by utilizing unique chrominance values for each pixel for the highest input resolution when computing the chroma key.

It is important to note that the chroma keyer always does 4:4:4 processing. However, if the key source is a 4:2:2 signal, the chroma keyer computes the missing samples using interpolation. In the case of 4:4:4 key sources, the chroma keyer actually receives chrominance samples for every pixel location from the external device.

Kalypso Solution

The Kalypso Video Production Center has a superior solution for 4:4:4 chroma keys which keeps analog-to-digital conversion out of the digital switcher chassis and minimizes the number of input BNCs consumed by each 0:4:4 source. In addition, customers can accommodate any number of 0:4:4 sources as desired — limited only by the number of available digital inputs.

The Kalypso Video Production Center keeps analog signals out of the digital switcher chassis, but uses only two SDI input BNCs for a full bandwidth chroma key. The video fill is still a CCIR-601 standard video signal which comes in on one of Kalypso's inputs. The key source comes in on a separate input BNC.

The 8950ADC module has a special 0:4:4 mode that takes the RGB analog input from a camera or other chroma key source and converts it to a special signal format for Kalypso. One 8950ADC module is used for each full bandwidth chroma key source.

As far as the Kalypso input board and crosspoint system know, the key source looks just like any other standard CCIR-601 video signal. However, all of the 0:4:4 chrominance samples you need to do a full bandwidth chroma key are present in the luminance and chrominance data bits of the CCIR-601 signal.

Note This special 0:4:4 chroma key signal cannot be viewed on a standard digital waveform monitor.

Any pair of Kalypso inputs may be used for a 4:2:2 / 0:4:4 chroma key fill/source pair, so the total number of full bandwidth chroma key inputs is limited only by the total number of Kalypso inputs available.

See the *8950ADC Analog to Component Digital Converter Instruction manual* for detailed information. Online documentation is available on the Grass Valley web site. The URL for the Grass Valley web site is found on the copy-right page at the front of this manual.

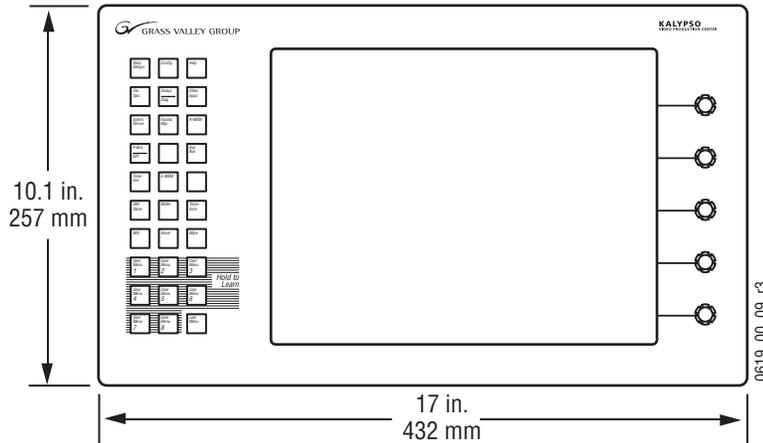
Early Model Kalypso System Installation

Early model Kalypso systems are similar to late model systems, but have some important differences. In particular, early model systems use the original Menu panel, which has different installation and cabling requirements.

Original Menu Panel Installation

The original Kalypso Menu panel includes buttons on the left for accessing menus (Figure 115) and does not have an internal CD-ROM drive.

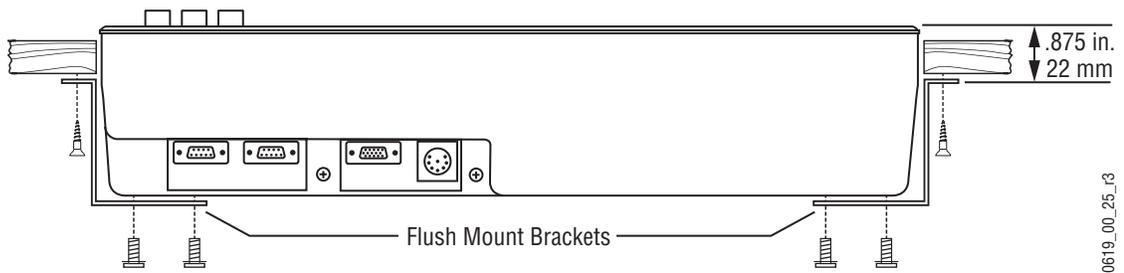
Figure 115. Original Menu Panel Dimensions



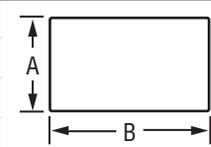
The processor for this model panel is located in the Main pane, and so additional ports and cable connections are required (Figure 11 on page 33).

Like the Enhanced Menu panel, the recommended mounting location for the original Menu panel is to the left or right of the Main panel (refer to Figure 94 on page 112). Early model Kalypso systems offered different optional flush mount brackets depicted in Figure 116, allowing the Menu panel to be mounted in a console, tabletop, splash panel, or standard 19 in. (483 mm) rack.

Figure 116. Original Menu Panel Console Flush Mount

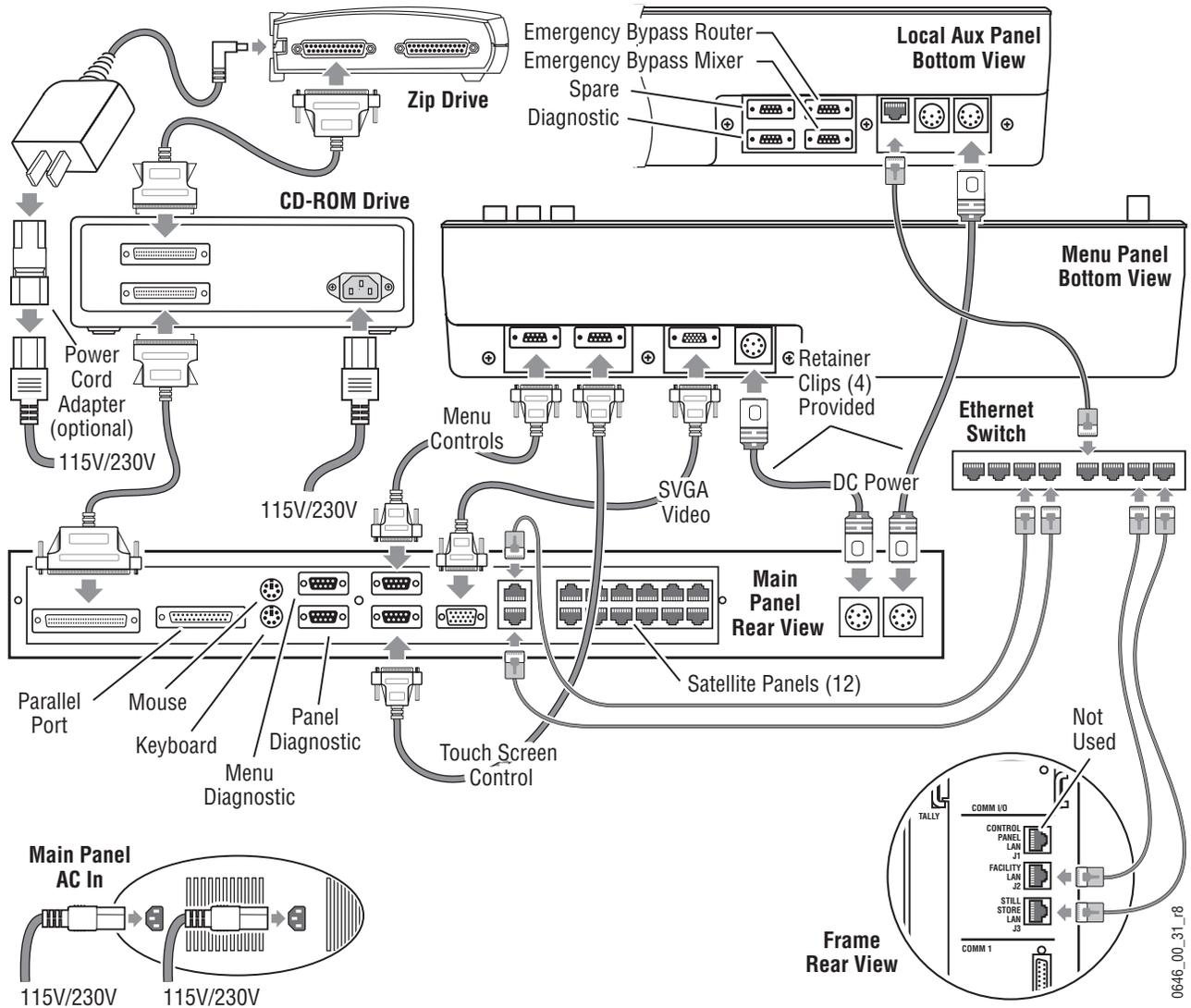


Menu Panel Mounting Option	Cutout Dimensions	
	A	B
Flush Mount, Fixed	10.22 in. (260 mm)	17.22 in. (437 mm)
Flush Mount, Adjustable	Depends on desired adjustability.	



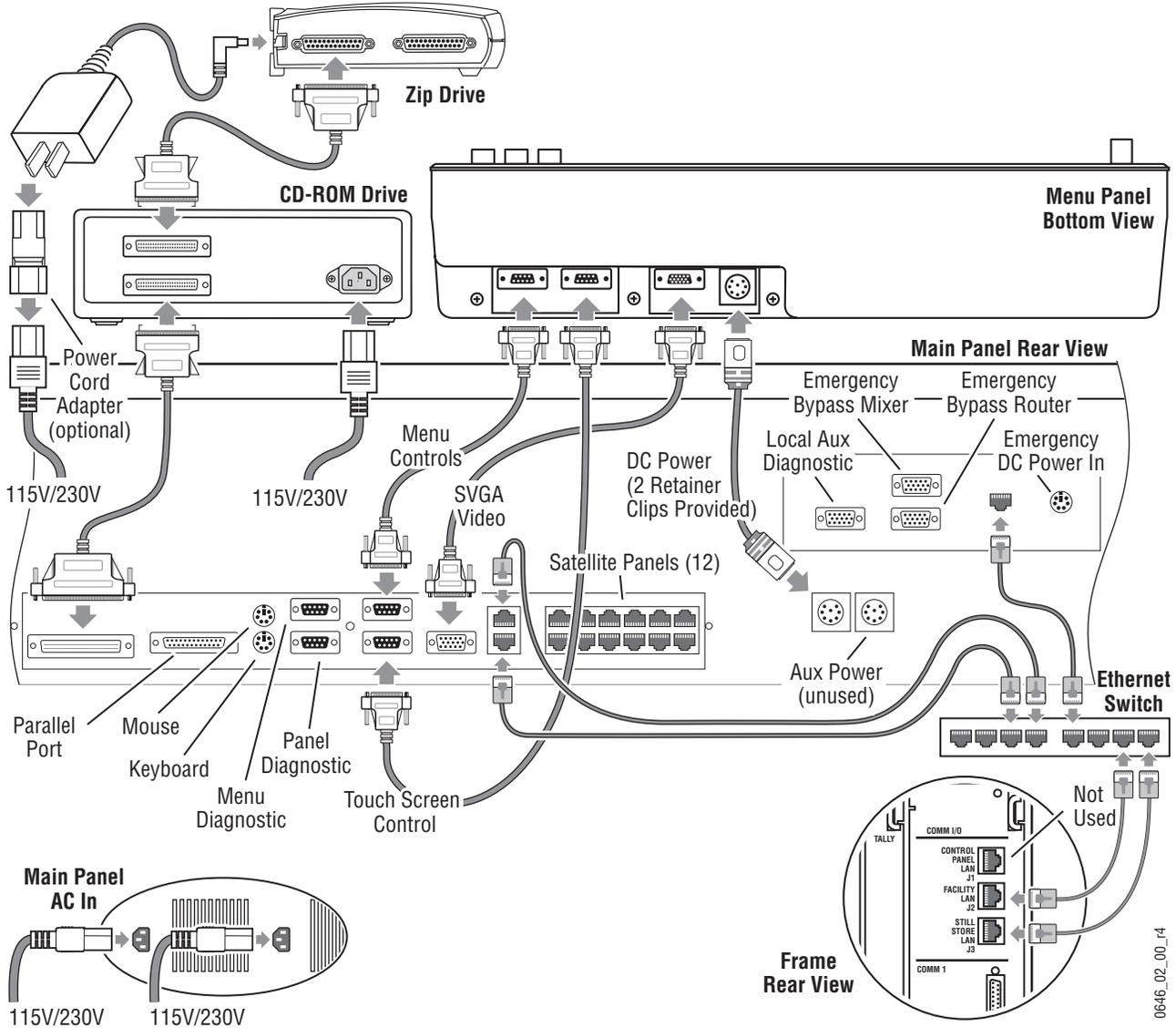
After mounting, connect the Menu panel to the Main panel according to the cabling diagram in Figure 117.

Figure 117. Early Model 4-M/E Control Surface Cabling



On early model 2-M/E systems connect the Menu panel to the Main panel according to the cabling diagram in [Figure 118](#)

Figure 118. Early Model 2-M/E Control Surface Cabling



Removable Media Drives

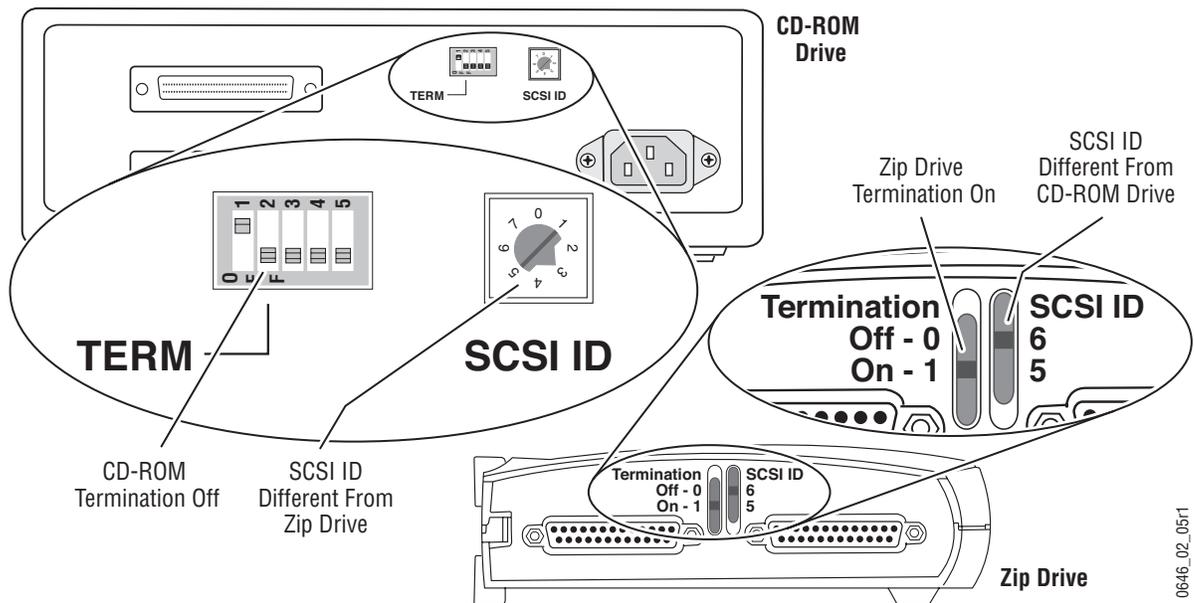
Three removable media drives are standard components of an early model Kalypso system, and are connected to the Main panel. Included are a CD-ROM drive (which connects to the Main panel SCSI port), a 250 MB Zip drive (which is connected to the SCSI chain via the CD-ROM), and a standard 1.4 MB 3.5 in. floppy disk drive. The floppy drive is mounted in the Main panel tub and is not intended for routine user access. No special mounting brackets or specific placement is required for the CD-ROM or Zip drives; placement of these drives is restricted only by cable length and

proximity to AC power. A 3 m (10 ft) SCSI cable is provided for the CD-ROM, and the Zip drive ships with a 61 cm (2 ft) SCSI cable. The SCSI chain supports up to seven devices and a maximum total cable length of 6 m (20 ft).

Termination

The CD-ROM drive and the Zip drive are on the same SCSI chain. Only the last device in a SCSI chain should be terminated. In a typical Kalypso system, the Zip drive should be the last device in the SCSI chain, and therefore the only one terminated. Ensure that the termination switch on the Zip drive is in the On position. Termination on the CD-ROM drive is controlled by a DIP switch, and the drive is typically shipped from the manufacturer with termination on. Check the DIP switches on the CD-ROM drive and move switch two to the Off position, if necessary (refer to [Figure 119](#)).

Figure 119. CDROM and Zip Drive Settings



SCSI ID

SCSI devices cannot share the same address ID. Check the SCSI addresses of the CD-ROM and Zip drives and ensure that they differ from each other ([Figure 119](#)). Any available address ID except zero is acceptable for either drive (zero is the address of the computer to which the SCSI chain is attached).

Configuration

Introduction

This section provides system configuration information for the Kalypso Video Production Center. Refer to the latest *Kalypso Release Notes* for information specific to your current software version.

Configuration Steps

Kalypso system configuration includes the following basic steps:

1. Power up the system,
2. Set IP addresses,
3. Define and save Engineering Setups, which can involve configuring external interfaces, and
4. Define and save Daily Setups, which includes defining Suite and User preferences.

Panel adjustments generally are not required, but may be necessary on some systems. The latest software is pre-installed at the factory.

System Power Up and Initialization

The Kalypso Video Processor power supply, Video Processor frame, and Main panel must be powered up for full system operation. The Menu panel and (on 4-M/E systems) the Local Aux panel receive their primary power from the Main panel.

1. Set all the power switches on the Video Processor Power Supply to On ([Figure 120](#)).
2. Set the power switch for the Video Processor frame to On ([Figure 121](#)).

3. Set the power switch(es) in the Main panel tub enclosure to On. (Figure 122).

Figure 120. Video Processor Power Supply, Front View

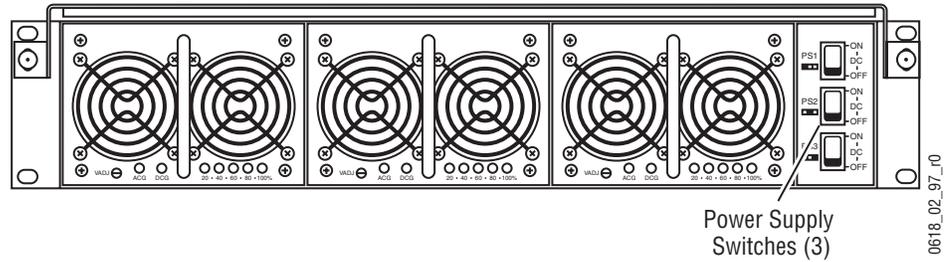
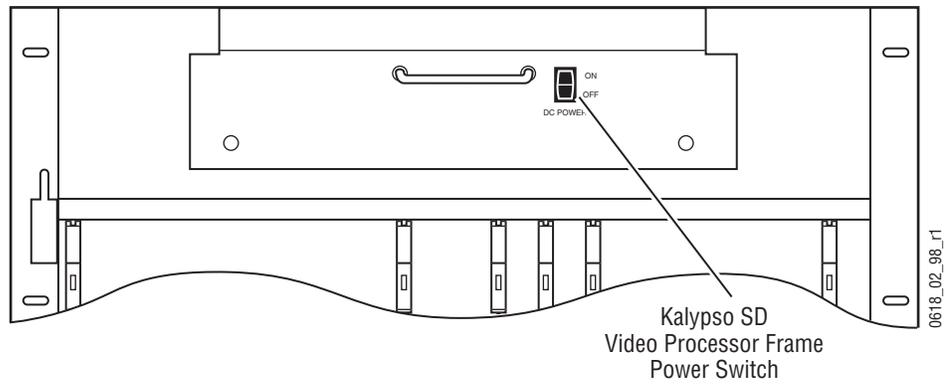
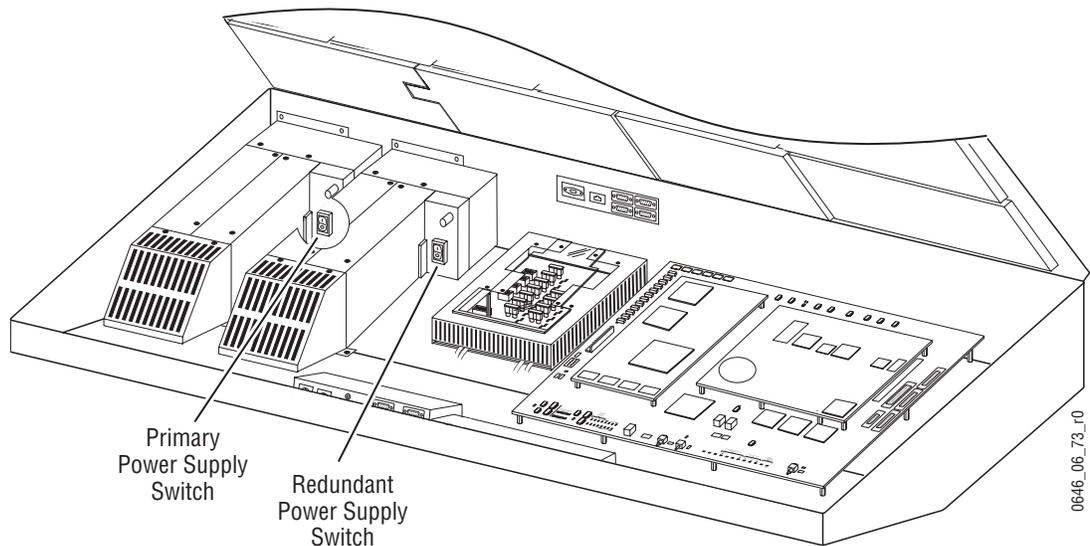


Figure 121. Video Processor Frame, Front View, Door Open



CAUTION The front door of the Kalypso Video Processor frame must remain closed during normal system operation for proper cooling airflow.

Figure 122. Main Panel, Lid Open



Power and Initialization Indications

Power to the system is indicated by operation of the fans in the Main panel, frame and power supply, and a green LED blinks on each M/E module in the Video Processor frame.

When the Kalypso system powers up or is reset, the first portions of the system activated are the PGM PST buses, transition, and keying controls. This permits rapid on-air recovery of basic system operations. Sources can be cut, mixed, and wiped, and keys placed taken on and off air while the rest of the system initializes. The Menu panel system is the last item to initialize after system power up. The first screen displays the Grass Valley logo and the menu software version, and then the entire system is fully operational.

The software version is displayed on the Versions menu. Touch **Status & Diags** to access this menu (Figure 123).

Figure 123. Software Versions



IP Addresses

Each device connected to any Ethernet network must have a unique IP address. An IP address has two components: the network address and the node address. The Subnet mask defines the dividing line between the two. The first three octets of Subnet mask provide the network address; the fourth is the node address. Nodes with the same network address can communicate directly with each other, while nodes with different network addresses normally do not communicate directly.

The Kalypso system actually has three Ethernet nodes for panel and frame communications (Facility LAN, Still Store LAN, and Panel LAN). The Facility LAN is used for all system communications. The Still Store LAN is used only with the Kalypso SuperStill option. The Panel LAN is not currently used. The Panel LAN may be used in the future to completely isolate frame to panel communications for time critical deterministic communication.

The Kalypso system is designed to use a central Ethernet switch. The switch provides isolation between port pairs, providing deterministic communication for panel and frame messaging, and also allows Main panel and Menu panel communication for DPOPs when the separate Panel LAN is supported. All Kalypso system devices must be connected to the same Ethernet switch. All nodes (except the Panel LAN) must also have the same network address and be given a different node address. The Panel LAN is given a different network address by default.

The Kalypso system default configuration includes IP addresses designed for standalone plug-and-play installation ([Table 21 on page 149](#)). The default configuration allows Kalypso components to communicate with one another but not with other devices in your facility (see the following section).

Connecting to an Existing Network

Connecting the Kalypso Ethernet LAN to your facility Ethernet backbone, or adding additional Kalypso components — such as Remote Aux panels, additional panels or frames — requires additional network configuration. To enable communication between Kalypso and other facility devices, you will need to change the Kalypso system default network addresses to match the facility address, or place a router between Kalypso and the facility network. This complexity of network configuration is beyond the scope of this manual. Consult a networking expert if such networking is desired.

Default IP Addresses

The Kalypso Video Production Center is shipped with default IP addresses (Table 21). Grass Valley has chosen these default IP addresses to make Kalypso configuration easy. Numbers were chosen to work with Profile VDRs in a default network configuration:

Table 21. Default IP Addresses

Device	IP Address
Video Processor frame	192.168.0.20 (Facility LAN)
	192.168.1.21 (Panel LAN, not used in 7.6)
	192.168.0.22 (Still Store)
Main panel (4-M/E and 2-M/E)	192.168.0.26
Main panel (1-M/E)	192.168.0.36
Menu panel	192.168.0.25
Additional Touch Screen Display	(undefined)
Local Aux panel	192.168.0.27
32 Crosspoint Remote Aux panels (when hard reset with the front panel buttons)	For V0.0.2a Software: IP Address: 192.168.0.250 Frame IP: 192.168.0.251 Gateway IP: 192.168.0.1 Subnet Mask 255.0.0.0,
	For V1.6.5 Software: IP Address: 192.168.1.2 Frame IP: 192.168.1.1 Gateway IP: 192.168.1.1 Subnet Mask 255.255.255.0,
Note that 32-Crosspoint Remote Aux panel default IP addresses must be changed to operate with a Kalypso system whose other components are configured with default IP addresses.	
All Subnet Masks (except V0.0.2a software Remote Aux panel)	255.255.255.0
All Gateways (except V1.6.5 software Remote Aux panel)	192.168.0.1

Note Though the Panel LAN is not used, the Video Processor frame still requires a Panel LAN IP address that is different from the Facility LAN. The Panel LAN must also have the same subnet mask as the Video Processor frame or the Facility LAN will not work.

Configuration for additional Kalypso components simply adds 10 to the node address. For example, the second Menu panel would have an address of 192.168.0.35.

If the default network configuration does not fit your existing Ethernet configuration, make sure all nodes have unique node addresses and are placed on the appropriate network. If other devices are present on the network, ensure that each device has a unique IP address. If more than one Kalypso system resides on the same network, the IP address of each additional Kalypso system device must be changed before it is connected to the network.

See your network System Administrator before connecting the Kalypso system to an existing network or making any IP address changes. The IP addresses (including any Subnet mask) of all the Kalypso devices on the network must be known before any changes are made.

Profile/OmniBus

If you will be installing the Machine Control option (OmniBus) database file, a default Profile VDR IP address (192.168.0.10) and “Profile 1” name is configured automatically when the OmniBus software is loaded. The Profile used with the Kalypso system needs to be configured with this default address. Otherwise, the OmniBus system configuration will need to be changed. OmniBus configuration procedures are outside the scope of this document.

Reference In Module PROMs

Video Processor IP addresses and software option authorization information resides in the PROMs on the Reference In module ([Figure 56 on page 77](#)).

CAUTION If a Reference In module is swapped, the PROMs from the original module must be moved to the replacement module to prevent network communications problems and preserve option authorization information.

See [Reference In Module PROM Replacement on page 232](#) for more information.

Changing Video Processor IP Address

The Video Processor IP address can be changed two different ways, using either a network connection and Web browser, or using a serial port and terminal.

Network Web Browser Method

You need to know the current IP address of the Video Processor frame before you can change it using a Web browser.

1. Using any web browser connected to your Kalypso network, enter the Video Processor frame IP address in the address field and press **Enter**.
2. Click on Frame Network Addresses ([Figure 124](#)).

Figure 124. Frame Network Address Web Page

Kalypso Web Access

Frame Network Addresses

[Software Versions](#)

[Frame Status](#)

[Frame Message Log](#)

[Frame Network Addresses](#)

[Frame Date and Time](#)

[Stillstore](#)

[Aux Panel](#)

[RT Panel](#)

Facility LAN

IP Address : 192.168.0.20

Subnet Mask : 255.255.255.0

Gateway IP : 192.168.0.1

Panel LAN

IP Address : 192.168.1.21

Subnet Mask : 255.255.255.0

Gateway IP : 192.168.0.1

Still Store LAN

IP Address : 192.168.0.22

Subnet Mask : 255.255.255.0

Gateway IP : 192.168.0.1

Save New Settings

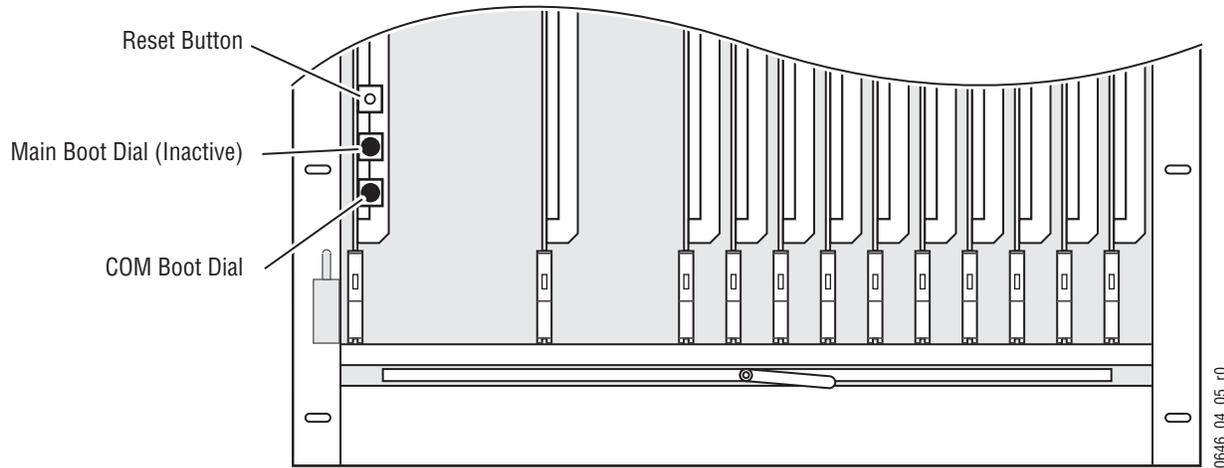
Note: After changing IP addresses, you must reboot the frame for them to take effect
Caution: Changing a network addresses to an incorrect value may render the system inoperable

CAUTION Do not change any existing valid IP addresses. Doing so can interrupt communications and make devices fail to operate.

3. Under Facility LAN, type in the new IP address (and subnet mask and gateway if needed). Make sure you enter the correct number exactly. A typing error can make the frame inaccessible over the network, since you need to know its IP address for use with the Web browser. If you make a mistake, you can use the Serial Port and Terminal method to view the existing IP address and change it to the correct value.
4. The Still Store IP address can also be changed from this menu, if necessary. The Panel LAN address (unused at the current time) should be left at its default address.
5. Click on the **Save New Settings** button.

6. Reset the Video Processor frame by pressing the **Reset** button (see [Figure 125](#)).

Figure 125. Control Module Reset Button and COM Boot Dial Switch



The Video Processor frame will boot up with the new IP address. Communications will no longer occur with any Kalypso system devices that are configured to use the old Video Processor frame IP address. You will need to go to each device and change the address they use to communicate with the Video Processor frame.

Serial Port and Terminal Method

The default IP address of the Kalypso Video Processor can be viewed or changed using a serial connection (a null modem cable) to a terminal or Windows PC running a terminal emulator program such as Hyperterminal. A small Philips screwdriver may be used to change dial switch settings.

1. Connect a terminal or a Windows PC running an emulator such as HyperTerminal to the COMM 1 connector (J4) on the Control I/O module ([Figure 56 on page 77](#)).

2. Set the terminal to the values in [Table 22](#).

Table 22. Serial Control Settings

Baud Rate	38.4 kbps
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

The COMM 1 connector on the Control I/O module is a male DB-25, wired as a standard RS-232 connector. [Table 23](#) lists the pinouts of a typical cable. Not Used in the Function column means the pins are not physically being used and don't need to be connected.

Table 23. Null Modem Cable (typical)

DB-25	DB-9	Signal Name	Function
8	1	DCD	Not Used
3	2	TXD	Transmit
2	3	RXD	Receive
20	4	DTR	Not Used
7	5	GND	Ground
6	6	DSR	Not Used
4	7	RTS	Not Used
5	8	CTS	Not Used

3. Set the Control module COM Boot dial switch to 1 (one). Two dials are located on the Control module ([Figure 125 on page 152](#)). The upper dial (Main Boot dial switch) is inactive. The lower dial (COM Boot dial switch) must be set to 1 (one) for boot operations, like setting IP addresses. The default 0 (zero) setting is used for normal software updates and system operation. An edge mark and slot on the dial indicates the current number setting.
4. Press the Control module Reset button ([Figure 125 on page 152](#)). If communicating properly, the terminal displays a menu of options selectable by letter ([Table 24](#)).

Table 24. Diagnostics Options

Letter	Action
a	View current IP Settings
f	Set Facility LAN IP address
p	Set Panel LAN IP address
s	Set Still Store IP address

5. Enter **a** to view the current address and **f** to type in the new Facility LAN IP address. If an error is made, do not backspace to correct. Instead, press **Enter** and retype the correct address. The Panel LAN (not currently available) and Still Store LAN may also need to be changed if their addresses conflict with any other devices on the network.

CAUTION Once you have set an address you must finish the process, otherwise default addresses will be used.

6. Set the Control module COM Boot dial switch back to 0 (zero).
7. Press the Control module Reset button to reset the Video Processor frame. After initialization, blinking green LEDs on the M/E modules indicate normal operation. If the LED statuses are not correct, the Control module COM Boot dial switch may not have been set to 0 (zero). If the switch was not set to 0 (zero), correct the setting and repeat [Step 6](#) through [Step 7](#).

Video Processor Frame Temporary Default IP Address

A Kalypso Video Processor frame running Kalypso Release 7.6 software can be temporarily set to operate with default IP addresses using the frame's COM Boot dial 2 switch setting. This mechanism is useful if you have lost track of the frame's IP addresses and use a Web browser to set them. You need to know the frame IP address to access it with the Web browser before you can change the addresses with the Web browser.

To Temporarily Set the Frame to Default IP Addresses:

1. Isolate the Kalypso Video Processor frame from the network by disconnecting its Ethernet cable from the Ethernet switch.
2. Set the Video Processor frame COM Boot dial switch to 2.
3. Press the frame reset button. The resulting frame IP addresses are shown in [Table 25](#):

Table 25. Default Video Processor Frame IP Addresses After Reset

Facility LAN	192.168.0.20
Subnet Mask	255.255.255.0
Gateway	192.168.0.1

Note These addresses are used temporarily and do not change the addresses saved to EEPROM. IP Addresses for the Panel LAN and Still Store option (if present) are not affected by this default reset.

To Change the IP Addresses from the Temporary Defaults:

The procedure above makes the frame accessible from a web browser using the default IP addresses temporarily set with the procedure above.

1. Configure a PC to be a unique node on the Kalypso's default network. The PC must have access to the frame. This normally means that it needs an IP address in the range of 192.168.0.2 to 192.168.0.254 but excluding 192.168.0.20 (the frame's IP default address).
2. Connect the PC directly to the Kalypso Video Processor frame Ethernet port via a crossover cable, or connect via an isolated switch or hub.
3. Launch a web browser and enter the frame's default IP address of **192.168.0.20**.
4. Change the Video Processor frame and Still Store IP addresses, subnet mask, and/or gateway to the desired settings using the web browser.
5. Set the Video Processor frame COM Boot dial switch back to **0** and reset the frame. The new IP addresses you entered will take effect.
6. Disconnect the PC and reconnect the Kalypso Video Processor frame to the network.

The Video Processor frame IP addresses should be changed to match the settings used by the other Kalypso system devices on the network. If the other devices are not configured to use these IP addresses, the system will not operate. To operate the Kalypso system with different Video Processor frame IP addresses you need to change the settings on all the other components to match the new frame IP addresses.

Changing 4-M/E and 2-M/E Main Panel IP Address

The IP address settings for the 4-M/E and 2-M/E Main panel can be changed directly on the panel without a terminal.

1. Press and hold down the **Unshift**, **Shift**, **Near Side**, and **Far Side** buttons on M/E 1 for about five seconds. This disables all normal panel operations and brings up a Top Menu display on PGM PST with lighted source buttons labeled **IP Config**, **Dsply Adj**, **Calibrate**, and **Exit**.
2. Press the **IP Config** button to place the Main panel in IP address mode. In this mode, the last three source buttons on PGM PST go high tally and the source name displays for these buttons read **NEXT IP**, **SAVE EXIT**, and **EXIT ONLY**.

3. Press the **NEXT IP** button. The PGM PST source name displays show the actual address for the Main panel. The information may come up slowly, so allow time for it to complete. If the address is correct, press **NEXT IP** to continue. To change the address, press the lighted source button above each digit to increment up, or press the button below the digit to increment down. Pressing a button changes its value by one. Pressing a button repeatedly cycles through all its values. After setting the proper address, press **NEXT IP**
4. An address for the Video Processor frame displays next. This is the address the Main panel uses to connect to the frame. The displayed setting must match the actual setting of the frame.

Note Changing the displayed setting does not change the actual Video Processor frame IP address. To change the frame IP address, perform the instructions in [Changing Video Processor IP Address on page 150](#).

When the address is correct, press **NEXT IP**.

5. An address for the Menu panel displays next. Like the Video Processor frame address, changing this setting does not change the Menu panel address. Set it to match the actual Menu panel IP address. (To change the actual Menu panel address, see [Changing Menu Panel IP Address on page 158](#).) When the address is set correctly, press **NEXT IP**
6. An address for Subnet mask address is displayed. Change this setting only if necessary, then press **NEXT IP**.
7. With all the addresses correct, press the **SAVE Exit** button to save the values and return to the Top Menu. Pressing **Exit ONLY** returns to the Top Menu without changing any of the addresses.

Note If you only needed to change IP addresses, press **Exit** to exit the Top Menu. The Main panel automatically reboots and then returns to normal operation.

Changing 1-M/E Main Panel IP Addresses

If you are adding a 1-M/E Main panel to an existing Kalypso system that is using factory default addresses, you will not need to change the default IP addresses on the 1-M/E Main panel.

If you will be using an Additional Touch Screen Display (or a PC running the Kalypso Menu application) with the 1-M/E Main panel, you should set its IP address to match that set on the 1-M/E panel, using standard Windows procedures.

If you are using more than two Main panels on the same Video Processor frame, you will need to set the IP addresses of the additional panels so they do not conflict. One easy way to do this is to increment the last octet IP addresses of each group of new devices by 10.

The 1-M/E Main panel IP addresses can be viewed and set directly on the panel with the following procedure.

1. Press and hold down the **Unshift**, **Shift**, **Near Side**, and **Far Side** Source Select Modifier buttons for about five seconds. This enables hardware configuration mode, disabling normal panel operations. The source name display will read **Top Menu** on the left, with lighted source buttons on the right labeled **IP Config**, **Dsply Adj**, **Calibrate**, and **Exit**. These labeled source buttons are used to select different modes and exit the configuration mode.
2. Press the **IP Config** button to place the panel in IP address mode. IP addresses are displayed on the E-MEM subpanel readout. The source name display shows a n IP address name with instructions on the left. The last three source buttons on the right light and their source name displays read **NEXT IP**, **SAVE EXIT**, and **EXIT ONLY**. These source buttons are used to cycle through the different IP addresses, save and exit IP address mode, and exit the mode without saving changes.
3. The first IP address displayed is the actual IP address for 1-M/E panel (the source name display reads **1M/E PNL**). To change this address, enter the IP numbers using the illuminated buttons on the E-MEM keypad using the **Undo/•** button for the octet separator. You can use the **Reverse** button to backspace and erase numbers. The entire address must be entered.
4. When the address is correct, press **NEXT IP** to go to the next address (**FRME**). This is the address the Main panel uses to connect to the Video Processor frame. The displayed setting must match the actual address of the frame.

Note Changing a displayed target address setting does not change the actual IP address of the target device.

5. When the address is correct, press **NEXT IP** to go to the next address (**MENU**). This is the target address for an additional Menu panel or PC (if one exists) used with the 1-M/E panel. Set it to match the actual IP address of the additional Menu panel or PC.

Note Do NOT set this address to the Menu panel address used by the principle Kalypso 4- or 2-M/E Main panel.

6. Press **NEXT IP** to go to the next address (**SUB NET MASK**). This is the actual address for Subnet mask of the 1-M/E Main panel. The subnet mask should remain at **255.255.255.0** unless you are instructed otherwise by your system administrator.
7. Press **NEXT IP** to go to the next address (**GATEWAY**). If you are using a gateway with your Kalypso system set this value to match that address.

8. Press **NEXT IP** repeatedly to cycle through and confirm all the values entered.
9. With all the addresses correct, press the **SAVE Exit** button to save the values and return to the Top Menu. (Pressing **Exit ONLY** returns to the Top Menu without changing any addresses.)
10. Press **Exit** to exit the Top Menu. The Main panel automatically reboots (**PNL RST ING** is displayed), using the new settings if they were saved.

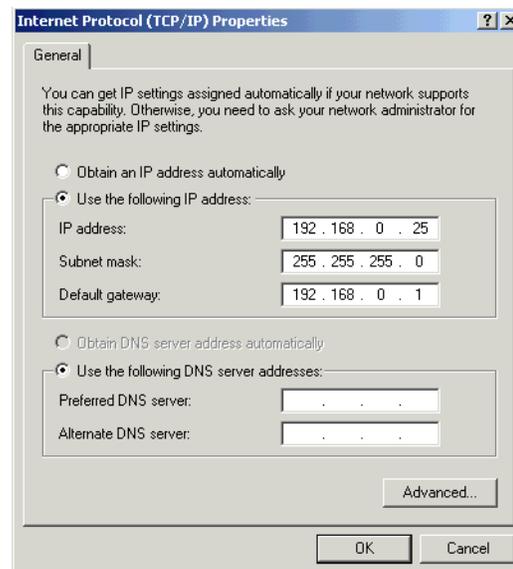
Changing Menu Panel IP Address

Enhanced Menu Panel

Set the Enhanced Menu panel IP addresses using the standard Windows 2000 interface. You may use the touch screen to access the Windows settings but you will need to use a mouse and keyboard connected to the Menu panel for entering the IP address values. To set the Menu panel addresses do the following.

1. Go to the following location in Windows 2000: **Start\Settings\Network and Dial-up Connections**.
2. Touch the **Local Area Connection** icon to bring up the **Local Area Status Dialog Box**, then press the **Properties** button.
3. Touch the **Internet Protocol (TCP/IP)** line in the list window to bring up the **Internet Protocol (TCP/IP) Properties** dialog box (Figure 126).

Figure 126. Menu Panel IP Addresses



4. In the **IP address** field, enter the Menu panel IP address to conform to the network requirements for your facility.
5. Enter the **Subnet mask** as 255.255.255.0 unless advised otherwise by your system administrator.
6. In the **Default gateway** field, enter the correct IP address for connecting to the external gateway device (refer to [Connecting to an Existing Network on page 148](#)).
7. Restart Windows 2000 for the changes to take effect and to refresh the internal routing tables with the new values.

Original Menu Panel

The Menu panel IP address is set using standard Windows NT procedures. IP address controls are located at:

My Computer\Control Panel\Network\Protocols\TCP/IP Protocol\Properties

Other IP Address Entry on Menu Panel

The Frame IP address and Still Store IP address (if present) must also be entered on either the Enhanced or original Menu panel, so the Menu panel knows which nodes to communicate with. To enter the Frame address on the Menu panel:

1. Run the Kalypso Menu application.
2. Press the **Eng Setup** menu selection button.
3. Touch the **System** category selection button, then touch the **Suite Def** button.
4. Touch the **Frame IP Address** touch pad, and enter the Frame IP address.
5. If the Still Store option is installed, touch the **SStore IP Address** touch pad and enter its IP address.
6. Touch the **Save Load** category selection button, and save the configuration to disk.

Note Refer to [Resource Sharing on page 205](#) for information about setting up Kalypso Nodes for Resource Sharing.

Changing Local Aux Panel IP Address

The procedure to change Local Aux panel IP address settings is the same as that used on the Main panel. On the Local Aux panel, hold down the **Unshift**, **Shift**, **Near Side**, and **Far Side** buttons on the upper Bus #1. The Top Menu displays on the lower Bus #2. The first IP address displayed is the actual

address of the Local Aux panel. The Video Processor frame, Menu panel, and Subnet mask address settings are displayed in that order. Display lighting adjustments are also available, but no lever arm or joystick calibration is available since they do not exist on the Local Aux panel.

The same procedure is also used for the Local Aux subpanel built into the 2-M/E Main panel.

Setting Still Store Option IP Address

The Still Store IP address actually resides on the Reference In module ([Figure 56 on page 77](#)), and is managed by the Kalypso frame. On standard Kalypso systems this IP address will probably not need to be changed. The Still Store IP address can be changed using the same procedures used to change the Kalypso Video Processor frame address. See [Changing Video Processor IP Address on page 150](#).

Setting 32-Crosspoint Remote Aux Panel IP Address

The 32-Crosspoint Remote Aux panels communicate with other Kalypso devices over the Menu (Facility) LAN. The 24-Crosspoint Remote Aux panels use a serial communication connection and do not require an IP address.

The default IP addresses of 32-Crosspoint Remote Aux panels are set to at the factory before shipment will not work with a Kalypso system whose other components are set to defaults. Typically, Kalypso systems are equipped with more than one Remote Aux panel. If more than one 32-Crosspoint Remote Aux panel will be used on your Kalypso system, you will need to change each panels' IP addresses so none are duplicated, and this must be done before you connect them to the network. This will require a mouse and keyboard connected to a PC disconnected from the network.

Check with your network administrator to learn what IP addresses should be used at your facility.

Default IP Address

The version of software installed on a 32-Crosspoint Remote Aux panel affects its default IP addresses. Earlier version panels (generally shipped before November 2004) had V0.0.2a software, and current version panels have V1.6.5 software. The default IP addresses for these panels are listed in [Table 21 on page 149](#).

The 32-Crosspoint Remote Aux panels can also be updated in the field with software provided on CD. Default IP addresses can also be restored using a procedure described on [page 163](#).

Setting the IP Address

A PC equipped with an Ethernet interface and a web browser is required to change 32-Crosspoint Remote Aux panel IP addresses.

1. With the PC disconnected from all facility networks, connect the PC's Ethernet port directly to the Remote Aux panel.

Note A crossover Ethernet cable (Tx/Rx pair crossed) is needed when connecting a PC directly to the Aux panel without a hub intermediary.

2. Start the web browser, enter the default IP address (192.168.0.250) in the address field, and press **Enter**. If the address is found, a Panel Description screen similar to [Figure 127](#) will appear.

Note If the Remote Aux panel address is not found, you may need to reset the panel to its defaults (see [page 163](#)).

Figure 127. Panel Description Screen

The screenshot shows a web browser interface for 'Product Web Access'. On the left is a navigation menu with links: Configuration, Panel Description (selected), Panel System, Panel Network, Factory Default, and Program Load Setup. The main content area is titled 'Panel Description' and contains the following information:

```

Panel System: Kalypso
Panel Device Name: KMD0DF5
Panel Type: 231   Type Name: KMD
Panel Programmed Type: 0

Current Panel Ethernet Status: No Comm with server

Panel Application Software Version: 0.0.2a - Mar 16 2001 08:26:48
Panel Application Loader Software Version: 0.0.0.a not created yet
Panel Boot Software Version: 1.0.0a

Panel Hardware Information
Controller Module Description:
Ether/F 671-6280-00X3 no mods

Switch PCB Module Description:
6302-00x1

This is a read only page, however, the above
"Panel Device Name" can be revised on the following pages.

```

3. Click on **Panel Network**. A Panel Network Configuration screen similar to [Figure 128](#) will appear, displaying the factory default settings.

Figure 128. Panel Network Screen, Default Information

The screenshot shows a web interface titled "Product Web Access" with a navigation menu on the left containing links for "Panel Description", "Panel System", "Panel Network", "Factory Default", and "Program Load Setup". The main content area is titled "Panel Network Configuration" and displays the following settings:

- Panel Device Name: KMD100
- Current Settings**
 - Ethernet IP: 192.168.0.250
 - Subnet Mask: 255.0.0.0
 - Gateway IP: 192.168.0.1
 - Server Ethernet IP: 192.168.0.251
 - Server Port Number: 6000
 - Server Port Type: UDP
- Network Mode Selection - Enable DHCP if box checked**
 - Warning: Panel will expect to find a DHCP server to resolve above Ethernet IP
 - Set DHCP Mode (get IP from host)
- Post Save Selection - Force panel reset if box checked**
 - Warning: Will force panel to reset, and then resume using new network settings.
 - Do reset

At the bottom, there are three buttons: "Save New Settings", "Cancel Changes", and "Factory Defaults".

4. Enter the IP addresses and other information appropriate for your system.
 - The **Panel Device Name** is used to name the panel, for user convenience. This field does not affect the operation of the unit.
 - The **Server Ethernet IP** field is for the Kalypso Video Processor frame.

Note Do not change the Server Port Number or Server Port Type fields. These settings need to remain at their defaults.

5. Settings for the first Remote Aux panel of a Kalypso system using default IP addresses and not using a gateway is shown in [Figure 129](#). The settings you use may need to be different, depending on your network requirements.

Figure 129. Typical Kalypso System Default IP Address Settings

Product Web Access

Configuration **Panel Network Configuration**

[Panel Description](#)
[Panel System](#)
[Panel Network](#)
[Factory Default](#)
[Program Load Setup](#)

Panel Device Name:

Current Settings

Ethernet IP:
Subnet Mask:
Gateway IP:
Server Ethernet IP:
Server Port Number:
Server Port Type:

Network Mode Selection - Enable DHCP if box checked

Warning: Panel will expect to find a DHCP server to resolve above Ethernet IP

Set DHCP Mode (get IP from host)

Post Save Selection - Force panel reset if box checked

Warning: Will force panel to reset, and then resume using new network settings.

Do reset

6. Check the **Do reset** box at the bottom of the screen, then click on **Save New Settings**. The new IP addresses will be saved and the Remote Aux panel will reset. You should label the panel with its IP address and keep a record of all IP addresses for future reference.
7. Disconnect the PC, and connect the Remote Aux panel to the Kalypso system network.
8. Repeat this procedure on all the 32-Crosspoint Remote Aux panels to be used with your Kalypso system, entering a unique IP address for each 32-Crosspoint Remote Aux panel.

See [Remote Aux Panel Configuration](#) on page 183 regarding additional configuration steps required.

Restoring the Default IP Address

You need to know the current IP address of the 32-Crosspoint Remote Aux panel in order to change it using the Web browser. If a panel's IP address has been changed and its new value not recorded, it will be impossible to change its IP address. You can restore the panel to its factory default address, if necessary, with the following procedure.

1. Disconnect the Ethernet cable and the AC power cable from the Remote Aux panel.

2. Reconnect only the AC power cable. The panel will enter a diagnostic mode.
3. Push down and hold any panel button. After three seconds panel buttons will light up sequentially, indicating different available diagnostics.
4. When three buttons illuminate, release the held button. This places the panel in IP Address reset mode, and one button will be flashing.
5. Press the flashing button. This resets the IP address to factory default.(see [Table 21 on page 149](#)).

Setting Network Addresses Manually

Every Kalypso system component (except the 32-Crosspoint Remote Aux panel) also has a serial RS-232 console port that can be used to set its IP address if problems arise. Connect a terminal to this port and restart the component to set the IP address using the diagnostics menus.

Gateway IP Address

A gateway IP address can be entered to allow communication with devices not located on the local Kalypso system network. Communication outside the local network requires using a configured network gateway server, a description of which is beyond the scope of this document. See your network administrator for information about gateway server installation and configuration.

Setting Gateway IP Addresses

Video Processor Frame Gateway via Web Page

Use the procedure described earlier ([Network Web Browser Method on page 150](#)) using a web browser. A field is available for entering the Gateway IP address.

Video Processor Frame Gateway via Serial Port

Use the procedure described earlier ([Serial Port and Terminal Method on page 152](#)); connecting and configuring a terminal to the serial port, setting the boot dial switch to 1, and then navigating through the diagnostics hierarchy. A field is available for entering the Gateway IP address.

Main Panel, Local Aux Panel Gateways

Follow the normal IP set procedure, using the **Unshift, Shift, Near Side, Far Side** buttons. An additional Gate Way Adr prompt appears after Subnet Mask, at which you enter the IP address of the gateway server.

32-Crosspoint Remote Aux Panel Gateway

Follow the normal IP set procedure and enter the Gateway IP address in the field provided. See *Setting the IP Address on page 161* for information on setting Remote Aux panel IP addresses.

Menu Panel Gateway

Follow the normal IP set procedure for your model Menu panel (*Enhanced Menu Panel on page 158* or *Original Menu Panel on page 159*) adding the Gateway address in the field provided.

Engineering Setups

Kalypso inputs and outputs are connected to the rear of the Video Processor frame. These video signals need to be configured to your facility's requirements. Engineering Setups define Kalypso system components and describe how Kalypso is cabled into a facility. Engineering setups are intended to be used and maintained by technical staff. Engineering setups are designed to be set once and seldom changed, unless the facility changes in some way (new devices installed, signals rerouted, etc.). Engineering setups may be loaded and saved to disk. Security provisions are also available.

Engineer Login and Security

Kalypso system security features can be used to control changes to the Eng Setups parameters. Though the ability to change these engineering settings can be restricted, the Daily Setups User and Suite Prefs settings regularly used by production personnel remain completely available. In particular, the Source Patch feature allows users to rename sources and even repatch existing sources without requiring permission from the Engineer In Charge (EIC). The Eng Setups menus also remain accessible for viewing the settings even when making changes to the settings has been restricted.

The EIC needs to decide whether or not engineering setup changes should be restricted, which may depend on the TD using the system. The EIC may choose to activate the restriction to prevent novice TDs from accidentally making engineering changes that negatively impact Kalypso system integration with the rest of the facility. The EIC may also choose to remove the restriction for more skilled TDs, especially during setup for a mobile event when the EIC is busy with other duties.

Security Account Setup

Password mediated access can be setup using the Security Account Setup menu, accessed by touching **Eng Setups, System, Security** (Figure 130).

Figure 130. Security Account Setup Menu



Note Even if you do not wish to restrict Eng Setup changes, you should enter a password and store it in a safe place to prevent accidental lockout.

1. You must first login as the EIC before you can activate restricted access or change the password (see *EIC Login* on page 167).
2. Touch the **Set Password** data pad to open a popup keyboard and enter the password.
3. If you want to require entry of the password to make Eng Setup changes, touch the **Restrict Eng Setup Changes** button so the indicator illuminates to activate the security function.

CAUTION Once a password has been set and the security feature activated, password access remains in force indefinitely and can only be changed using that password. Resetting the Kalypso system, loading a new configuration file, and/or clearing NV Memory does not affect the security settings. Should the password be misplaced, forgotten, or changed by mistake, contact Grass Valley Customer Service for assistance.

EIC Login

A login procedure is required before any changes to Eng Setups parameters can be made. Each login session has a pre-determined time-out, at which time the system reinstates the Eng Setups change restriction. No password is needed by default to login and make changes. A separate security feature can be activated that requires entry of a password before Eng Setups changes can be made. This restriction also applies to loading Eng Setup configuration files.

By default, changes cannot be made to any Eng Setup configuration settings. An **EIC not logged on - changes ignored** message appears briefly in the notification area at the top of each Eng Setups menu if you are not logged in. You can still access all the menus and view the settings, but attempts to change them posts an **ACCESS DENIED** message. To make changes, you can login with the EIC Login menu, accessed by touching **Daily Setups, EIC Login** (Figure 132).

Different EIC Login menus appear, depending on the system operating mode. Single Suite mode Kalypso systems use the menu in Figure 131.

Figure 131. EIC Menu, Logged Out



An Identity pane appears on the EIC Login menu when Multi Suite mode is in operation (Figure 132). After a system has been configured for Multi Suite operation you will generally want to use the default Identity setting. See *Login to Another Control Surface or Suite on page 217* for more information about Multi Suite logins.

Figure 132. EIC Login Menu Logged On



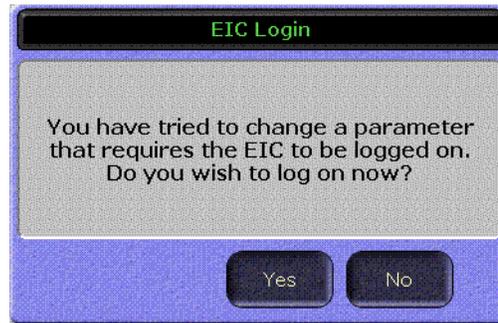
1. Use the soft knob or touch the Login Time data pad and enter a time duration for the EIC session. If no time is entered a default time of 60 minutes will be used.
2. Touch the **Login** button.
 - a. If password security has not been activated you are immediately logged in and can modify the Eng Setups parameters for the specified time.
 - b. If password security is active, a popup keypad appears into which you can enter the password. After the correct password is entered you will be logged in and can make changes for the specified time.

After logging in, an **EIC login active - changes allowed** message appears when you access an Eng Setup menu.

EIC Login Shortcut

If while in an Engineering Setup menu you attempt to make a change when not logged in as the EIC, the EIC login popup appears (Figure 133), allowing you to login without having to navigate to the Daily Setups EIC login menu.

Figure 133. EIC Login Popup Screen



Wait Time for NV Memory Update

Kalypso system NV memory is automatically updated on a regular basis, and NV memory is automatically loaded when the Video Processor frame is reset or rebooted.

Note After making any configuration changes, wait at least 3 minutes before rebooting the Video Processor frame. This time is needed to ensure NV memory is updated with the changed values.

When configuration changes are made (Engineering Setups, Suite Prefs, User Prefs) these changes immediately affect Kalypso system operation, but the settings are not immediately transferred to NV memory. The changes are sent at the next regular NV memory update. This causes a short time lag from when configuration changes are made in a menu and when they are available for use during a frame reset. Waiting three minutes before resetting the frame allows time for two updates, and helps ensure the data is sent to the frame that the menu is communicating with.

Note After changing between Single and Multi Suite modes a Video Processor frame reset is required. For this configuration change you do not need to wait three minutes before resetting, provided the system has been in operation for at least three minutes after bootup to allow NV Memory saves to be enabled.

Source Definition

The source definition tells the system which physical inputs or internal signals to use when a particular source is selected. The source definition, denoted by a source ID number, specifies how to process a signal, and what

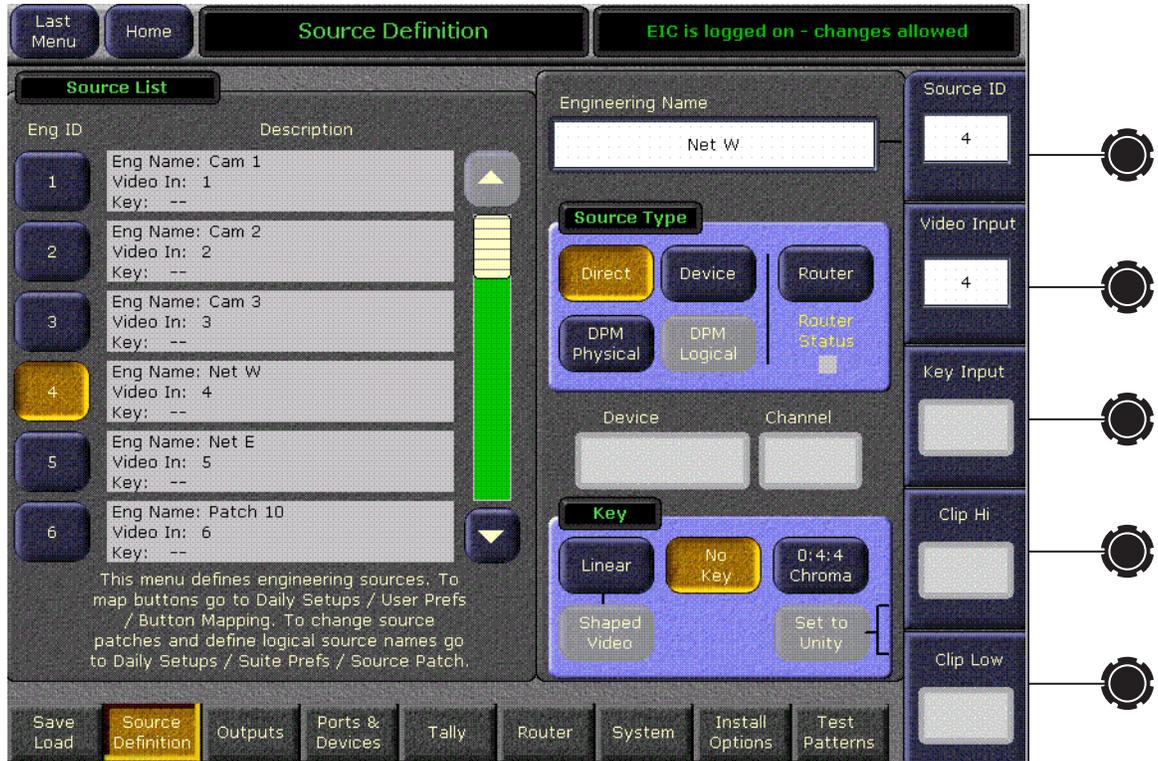
external devices, if any, are associated with that source. Each Kalypso Video Processor frame has one source definition set. Source definition defines what signals comprise each source. The default Source Select button definitions are listed in Table 26. These defaults are configured as video only signals.

Table 26. Default Source Definitions

Source ID	Video Input	Key Input	Name	Type	Key
1-16	Inputs 1-16 Input module 1 (Slot B10)	Inputs 1-16 Input module 1 (Slot B10)	(blank)	Direct	None
17-32	Inputs 17-32 Opt. Input module 2 (Slot B9)	Inputs 17-32 Opt. Input module 2 (Slot B9)			
33-80	Inputs 33-80 Opt Input modules 3-5 (Slots B8 - B6)	Inputs 33-80 Opt Input modules 3-5 (Slots B8 - B6)			
81-92	Input 1	Input 1			
93-116	Internal M/E, PGM PST outputs (various)		(various)		
117	Internal Test		Test		
118	Internal Black		Blk		
119-120	Internal Bkgd 1, 2		Bg 1, Bg 2		
121-128	Internal Still Store		SS 1... SS 8		

The Eng Setup - Sources menu is used to change source definitions. Press the **Eng Setups** button, then touch the **Sources** button to display the menu (Figure 134).

Figure 134. Eng Setup - Sources Menu



Direct Source Definition

To Change Direct Source Definitions:

1. Touch the button of the desired Source ID located on left side of the screen (it is a vertical scrolling list).
2. Touch the **Engineering Name** data pad to name the source using the pop up alphanumeric keypad or standard keyboard (see [Naming Guidelines](#) on page 174 for more information).

3. Touch the **Video Input** data pad to enter or scroll to the input number of the connector the source will use for video. The change is immediate and can be viewed on a connected monitor. [Table 27](#) lists the module and connector numbers for each input number.

Table 27. Input Module Connector Numbers

Module	Input Numbers	Connectors
Input module 1 (Slot B10)	1 - 16	J 1 - J 16
Optional Input module 2 (Slot B9)	17 - 32	J 1 - J 16
Optional Input module 3 (Slot B8)	33 - 48	J 1 - J 16
Optional Input module 4 (Slot B7)	49 - 64	J 1 - J 16
Optional Input module 5 (Slot B6)	65 - 80	J 1 - J 16

4. If the source includes a key signal, select the type of key with the lower touch buttons.

Note Select either **Linear** or **No Key** if you wish to configure a source for use as a standard Chroma key. A standard Chroma key always uses the video signal for keying, ignoring any separate key signal. The **0:4:4 Chroma** button is only to be used with the separate 8950ADC module, which generates two signals that allow full bandwidth 0:4:4 Chroma keys. Do not select the **0:4:4 Chroma** button for standard Chroma keys.

5. If you selected **Linear** or **0:0:0 Chroma**, touch the **Key Input** data pad and enter to the input number of the connector the source you will use for the key ([Table 27](#)).
6. If desired, define Clip Hi and Clip Lo values (used when a fixed linear key is selected for that source) with the labeled soft knobs and data pads.
7. Exit the menu by touching the menu name located at the top of the screen.

Source Names and Source Patching

Facility engineers need to know the exact routing of all the video signals connecting all the devices they are responsible for. These engineers need to be able to identify video signals in a way that will help them connect devices properly. Production personnel, on the other hand, are interested in the content they work with for their shows, and are generally not concerned about which individual device or routing path is used to make those signals available. They just need a way to identify the content and access it when they need it. To support these differing needs, two source naming mechanisms are available on Kalypso systems; Engineering and Logical.

Engineering names and Engineering IDs are intended to identify a source as it applies to a specific facility. In a truck, for example, cameras may be hard wired to the production switcher and might be given Engineering names 1, 2, and 3. Names like Patch 14 or Rtr 5 may be used for inputs that are patched or routed.

Logical names, Logical nicknames, and Logical IDs (set as a Suite Preference using the Source Patch menu) are intended to identify the use of a source for a particular show. For example, VTRs may be given Blue, Red, and Gold Logical names. DDR channels might be named A, B, and C. Cameras might be identified by the camera number and each operator's name (which may change from program to program). To support this added level of variability, both Logical names and Logical nicknames can be used to label sources differently for varying conditions.

The Kalypso system provides a way to map Engineering source IDs to Logical source IDs, using the Source Patch feature. By default this mapping is one-to-one, but this feature can be used to quickly set up production elements for use in a different facility. For example, a show's effects, DDR clips, and taped material may have been built in one production truck with one set of devices, but the next show is scheduled for a different truck. Previously, to use effects in the other truck the Technical Director (TD) would need to edit the engineering source definitions in the new truck so they exactly matched the old truck. In some cases six settings would have to be changed, and tally outputs would also need to be repatched. With the Kalypso 7.6 release, by remapping the Engineering sources of the devices in the new truck to the Logical sources used to build the effects, all the effects can be used without having to edit them. Source Patch can also be used to quickly swap out a defective device during a show without having to reconfigure the Engineering sources. In this case Logical names seen by the production personnel would be identical for that content, even though the actual device playing the material changed.

Name Display Hierarchy

Different source names may appear at different locations of the Kalypso system, depending on what names have been defined. The following rules are used to determine which name is displayed:

Only Engineering names or Engineering ID numbers appear in the Eng Setup menus. If an Engineering name has not been entered, the Engineering ID number is displayed on these menus.

Logical names and nicknames can appear on the Main panel, the Local and Remote Aux panels, and on the Menu panel. On M/E and Aux panel Source Name Displays, if a Logical nickname exists, that name for that source will be displayed. Otherwise, if a Logical name exists, that name will be displayed. Otherwise, if an Engineering name exists, that name will be displayed. Otherwise, the Logical ID number will be displayed. For other displays (M/E status and all menus) the above logic is also used, except if

both a Logical name and a Logical nickname exists, the Logical name is shown on these displays, and the Logical nickname continues to appear on the Source Name Displays.

Naming Guidelines

It is not necessary to define an Engineering name, Logical name, and Logical nickname for every Kalypso source. It is generally a good practice to create the least number of names possible. This ensures consistency in the various displays and reduces the time needed to enter and edit the names. If you can create short Engineering names that work for both the production staff and engineering, complete naming consistency is assured. However, this level of simplicity is probably only feasible at a fixed installation where all the shows use the same source names.

The additional naming capabilities available on the Kalypso system can help make everyone's job easier. Operators often require program specific source names, but engineers may need technical names not of any value to the operators. Separate engineering and logical names solves this problem. Operators also may prefer to see short names on the Main panel. They know a particular group of buttons are the cameras, so a number is sufficient. But in other contexts, more descriptive names may be necessary. Separate names and nicknames solves this problem.

Defining Logical names that fit well on the Source Name Displays makes it unnecessary to enter a Logical nickname, simplifying the naming process. However, should you want different information on the Source Name Displays, you can do this by entering both a Logical name and Logical nickname. For example, you may give the cameras Logical names that include the operator (C1 Bob, C2 Phil, and C3 Bill), but remove the operator names to the nicknames so the Source Name Displays show C1, C2, and C3 in larger characters. When both Logical names and nicknames are used, they should be similar to make it easy to recognize they represent the same source.

The Source Name Displays on the Main panel and Aux panels size the text for the best fit. The display can show up to three lines, using large, medium, and small font sizes. A space in a name forces a line break. Single letters and two numbers use the largest font size. Names like Cam 1 or VT 3 split to two lines and use the medium font. In the case of cameras, using only numbers (1, 2, 12) provides the largest size text. Character number and size (capital letters are wider, and W is wider than I) affects the display. For example, CAM 1 and Blue use the smallest font, but C1 and Blu use the medium font. XXXXXX uses two lines, but xxxxxx and IIIIII use only one line. When the Source Name Displays are set to display both shifted and unshifted names, only one line of text is available for each name. If a name overfills its allotted space, the end of the name is truncated. Some experimentation with capitalization and abbreviations may be required for the best fit and readability of names. In general the shorter the name the better.

Source names displayed on Menu buttons will look different from the same names on the Source Name Displays. The menus use only one font size, cannot show three lines of text, and may not show nicknames. The ends of long names are truncated on the menus. Should you define long names with qualifiers at the ends, indistinguishable source names on the menu buttons can result. Check the names on both the Source Name Displays and the Menu buttons as you define them to ensure each one appears unique. While it is possible to define the same name for different sources, this is obviously not recommended as it will cause considerable confusion.

If logical names are limited to numbers, make them the same as the logical ID number and patch them to the appropriate engineering source. This minimizes confusion between the name and the ID number

Source Patching

Source patching (a Suite Preference) affects which sources are available to an operator, and how these sources are identified on control panels and menus.

Note Source Patching is the bridge between engineering sources and logical sources. Both TD and EIC should make reference to this menu when resolving source issues. The mechanism is similar in concept to a physical patch panel. Effects and all source selections are based on logical sources. Tally and associations with external devices are based on engineering sources.

Refer to the separate *Kalypso Reference Manual* and *Kalypso User Manual* for information about source patching.

External Device Source Definition

The **Router**, **DPM Physical**, **DPM Logical**, and **Device** buttons are used to setup a source as an external device, including GPI and Peripheral Bus II controlled devices. See *Appendix C-External Interfaces* for information on configuring external devices.

Button Mapping

After sources have been defined they can be mapped to Kalypso system control panel buttons. The Button Mapping menu (accessed by touching **Daily Setups**, **User Prefs**, **Button Mapping**) is used to map the sources associated with each source selection button. Refer to the separate *Kalypso User Manual* for specific button mapping instructions.

Permanently mapped buttons can also be labeled, if desired, using film inserts (see *Button Labeling on page 255*).

Output Assignments

All but two Kalypso outputs (Black and Test) are programmable. During configuration you determine which signals will be dedicated outputs. All the remaining outputs can be used for Aux buses. Output assignments determines which Kalypso system outputs appear on the Effects Send module connectors and each of any optional Output module's connectors. These modules have paired outputs that carry identical signals.

Kalypso fixed system outputs are listed in [Table 28](#). Switched Preview and Aux bus outputs are also available.

Table 28. Available Fixed Kalypso System Outputs

M/E Outputs	M1 A	M1 B	M1 C	M1 D	M1 pA	M1 p2
	M2 A	M2 B	M2 C	M2 D	M2 pA	M2 p2
	M3 A	M3 B	M3 C	M3 D	M3 pA	M3 p2
Pgm Pst Outputs	PP A	PP B	PP C	PP D	PP pA	PP p2
Internal Sources	Test	Blk	Bg 1	Bg 2		
Still Store Outputs	SS 1 - SS 8					

Default Output Assignments

The default output assignment of 4-M/E and 2-M/E Kalypso systems are identical except for Output module 1. The default output mapping for the standard Effect Send module is listed in [Table 29](#).

Table 29. Default Output Mapping, Effect Send Module

Effect Send Module (Slot B11)		Connectors
Output #	Output Signal	
41	Aux 1 A	J 1, J 2
42	Aux 1 B	J 3, J 4
43	Aux 2 A	J 5, J 6
44	Aux 2 B	J 7, J 8
45	Aux 3 A	J 9, J 10
46	Aux 3 B	J 11, J 12
47	PP A	J 13, J 14
48	Switched Preview	J 15, J 16

The default output mapping of Output module 1 is listed in [Table 30](#). Output module 1 is inactive on standard 2-M/E Kalypso systems. These outputs are driven by the Crosspoint module 2, which is not included with these systems. Configure the outputs of 2-M/E systems by either redefining the defaults on the Effects Send module or those of an optional Output module.

Table 30. Default Output Mapping, Output Module 1

Output Module 1 (Slot B16)			Connectors
Output #	Output Signal		
	4-M/E System Crosspoint Module 2 Present	2-M/E System Crosspoint Module 2 Absent	
1	PP A	Inactive	J 1, J 2
2	Switched Preview		J 3, J 4
3	M1 A		J 5, J 6
4	M1 pA		J 7, J 8
5	M2 A		J 9, J 10
6	M2 pA		J 11, J 12
7	M3 A		J 13, J 14
8	M3 pA		J 15, J 16

The default definitions for the remaining optional modules are identical on 4-M/E and 2-M/E systems ([Table 31](#) and [Table 32](#)).

Table 31. Default Output Mapping, Output Modules 2 and 3

Output Module 2 (Slot B15)		Output Module 3 (Slot B14)		Connectors
Output #	Output Signal	Output #	Output Signal	
9	PP B	17	Aux 5	J 1, J 2
10	PP C	18	Aux 6	J 3, J 4
11	PP D	19	Aux 7	J 5, J 6
12	PP pA	20	Aux 8	J 7, J 8
13	M1 B	21	Aux 9	J 9, J 10
14	M2 B	22	Aux 10	J 11, J 12
15	M3 B	23	Aux 11	J 13, J 14
16	Aux 4	24	Aux 12	J 15, J 16

Table 32. Default Output Mapping, Output Modules 4 and 5

Output Module 4 (Slot B13)		Output Module 5 (Slot B12)		Connectors
Output #	Output Signal	Output #	Output Signal	
25	Aux 13	33	Aux 21	J 1, J 2
26	Aux 14	34	Aux 22	J 3, J 4
27	Aux 15	35	Aux 23	J 5, J 6
28	Aux 16	36	Aux 24	J 7, J 8
29	Aux 17	37	Aux 25	J 9, J 10
30	Aux 18	38	Aux 26	J 11, J 12
31	Aux 19	39	Blk (fixed)	J 13, J 14
32	Aux 20	40	Test (fixed)	J 15, J 16

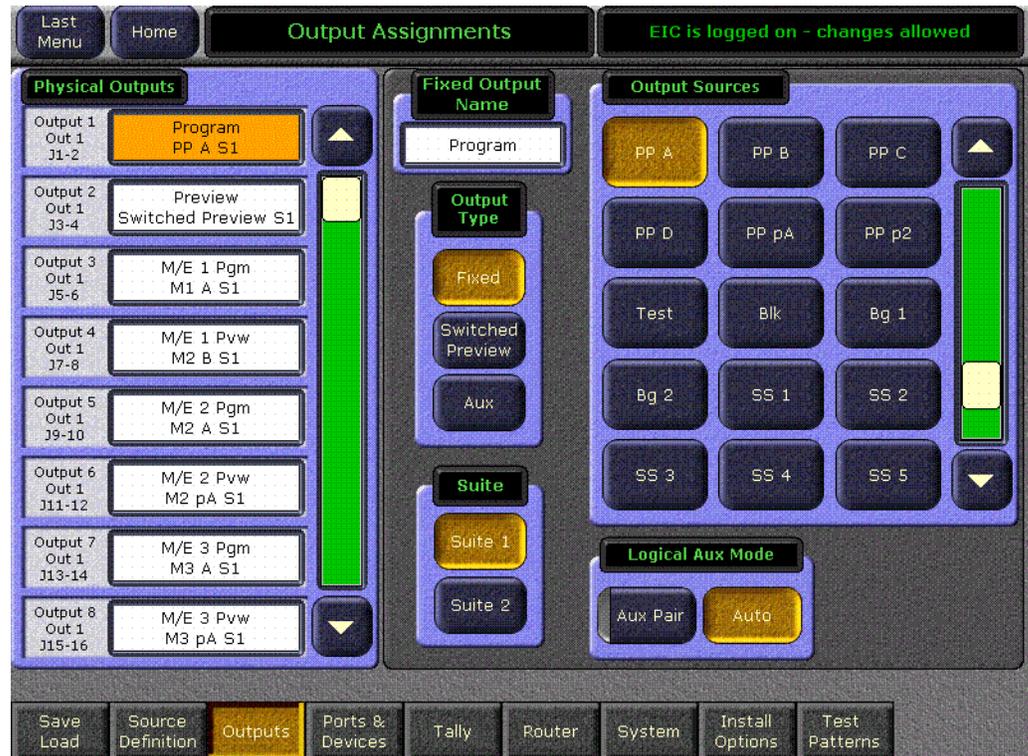
Effects Send Outputs

Outputs 41-48 can be configured to access Effects Send paths in the switcher that are unavailable to other outputs. Effects Send allows signals to be sent from an M/E to an external device (like a DPM) and return directly back to the M/E. Background information about Effects Send is included in the separate *Kalypso User Manual*. See [Effects Send Configuration on page 377](#) for more information about its use with DPMs.

Output Assignments Menu

The Output Assignments menu is used to change the Kalypso system output assignments. The current output assignments can be viewed in this menu. Press **Eng Setups, Outputs** to access this menu (Figure 135).

Figure 135. Output Assignments Menu



The scrolling list of data pads along the left side of the screen shows the currently assigned output for each listed module connector pair. The scrolling list on the right side shows the available outputs.

To Change Output Assignments:

1. Touch one of the output signal data pads from the left scrolling list to select it and display information for that output connector.
2. Select the Mode appropriate for the output being configured:
 - Select **Fixed** if the output is to be dedicated.
 - Select **Switched Preview** if the output will be used for switched preview. Switched preview can be assigned to multiple outputs.
 - Select **Aux** if the output will be an Aux bus (see [Aux Bus Configuration](#) on page 180 for more information).

Different sources appear on the right side of the menu, depending on what mode has been selected.

3. The **Suite 1** and **Suite 2** buttons are used to assign the currently selected output to a suite. The default setting is Suite 1.

Note Outputs assigned to Suite 2 will go to black if a Kalypso system configured for Multi Suite operation is set back to Single Suite mode. For this and other reasons switching a Multi Suite Kalypso system back to Single Suite mode is not recommended.

4. Touch the button of the desired output for that connector from the scrolling list on the right. The change is immediate, and can be viewed on a connected monitor. (Switched Preview mode does not offer any output sources to select from).
5. If desired, touch the Name data pad to change the name of the output using the pop up alphanumeric keypad or standard keyboard. This name appears on the data pad of the scrolling list on the left.
6. Exit the menu by touching the menu name located at the top of the screen.

Aux Bus Configuration

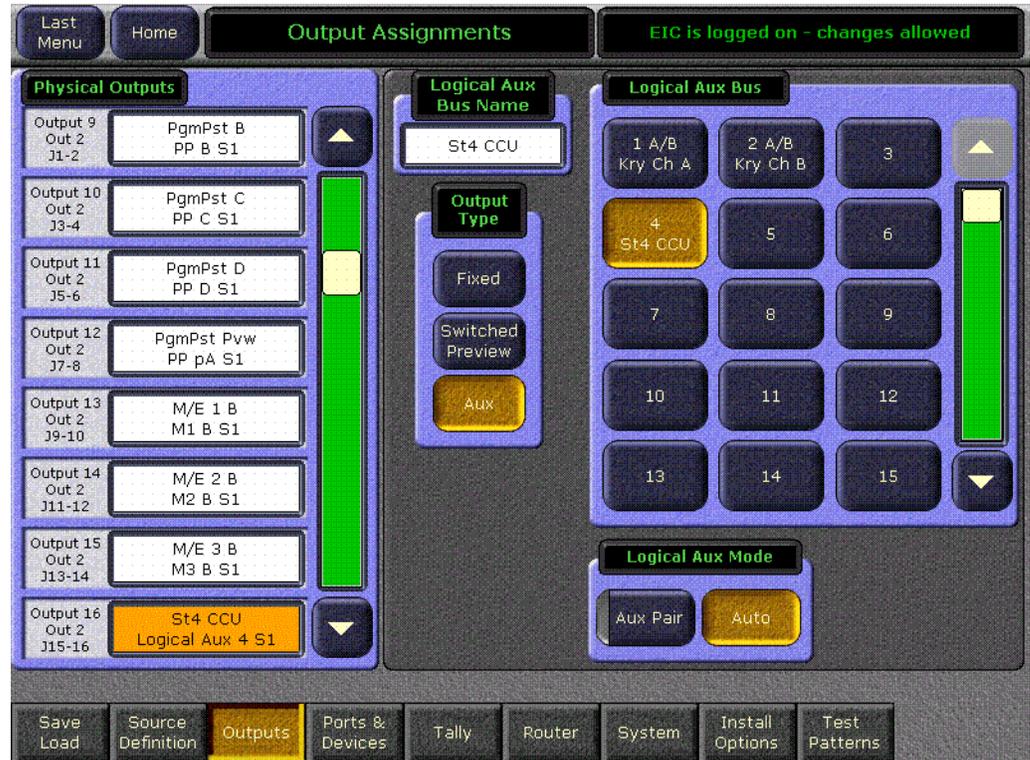
Aux buses can be used to send dynamically selected sources to an output. Aux bus sources are selected using the Local Aux panel, or using Remote Aux panels delegated to control that Aux bus. It is also possible to configure Aux buses to work with DPMs, which allows the DPM to switch Aux bus sources during the running of an effect (see [Appendix C-External Interfaces](#) for more information). Other Aux Bus attributes such as bus-to-panel delegation and Aux Pair configuration are covered in menus outside of Eng Setups and will be referred to in this section.

The number of aux buses on a Kalypso system varies, depending on how the physical outputs have been mapped. Any output that is not configured as Fixed or Switched Preview is available for use as an Aux bus.

Video Only Aux Bus

When the Logical Aux Mode **Aux Pair** button is not selected, the Aux bus is configured as a single video-only output (Figure 136).

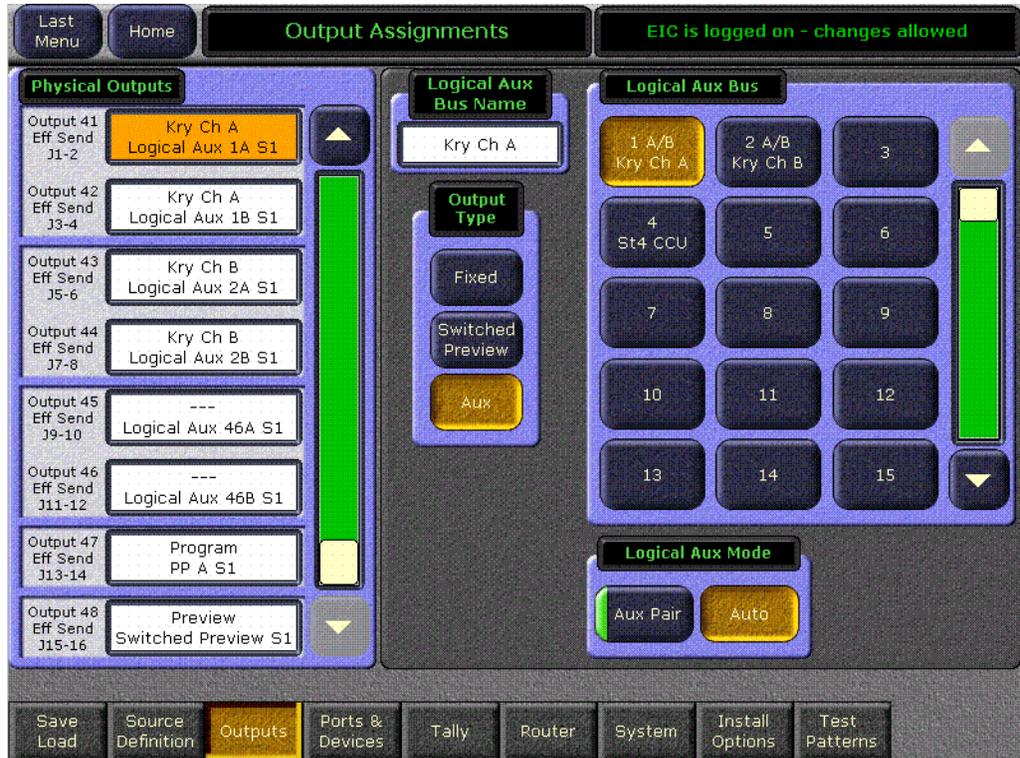
Figure 136. Output Assignments Menu, Video Only Aux Bus



Aux Bus Pairs

Physical Aux Buses can be also be configured as Aux Pairs in the Outputs menu, by selecting the **Aux Pair** button (Figure 137).

Figure 137. Output Assignments Menu, Aux Bus Pair



Aux Pairs are two physical Aux Buses that have been configured to send a video and associated key (or another video) signal to an external device, such as a DPM, usually for an effects send effect. Pairing of the video and key signal to be used on the Aux bus is defined in the Sources menu as explained earlier. Aux pairs are indicated on the menu by changing the gray area around the two buses to show they are grouped. The Aux Bus pairs are also identified with A and B letter indicators. The Aux A signal is always a video signal.

The Aux B signal can be defined as either video or key, which is done in the separate Aux Bus menu, outside of Eng Setup. To access this menu touch **Aux Bus** from the Home menu (Figure 138).

Figure 138. Aux Bus Menu



Remote Aux Panel Configuration

After the optional Remote Aux panels are installed, powered up, and set to different addresses, they need to be configured to the Kalypso system.

The following steps are involved.

- For serial controlled Remote Aux panels, in Engineering Setup identify which serial port (7 or 8) the Remote Aux panels will use.
- Identify and name the Remote Aux panels in Engineering Setup,
- Map sources to Remote Aux panel buttons in Daily Setups, and on multiple destination 32-Crosspoint Remote Aux panels map the Aux buses to be controlled by the delegation buttons on each panel.
- Program joystick overrides, if appropriate.

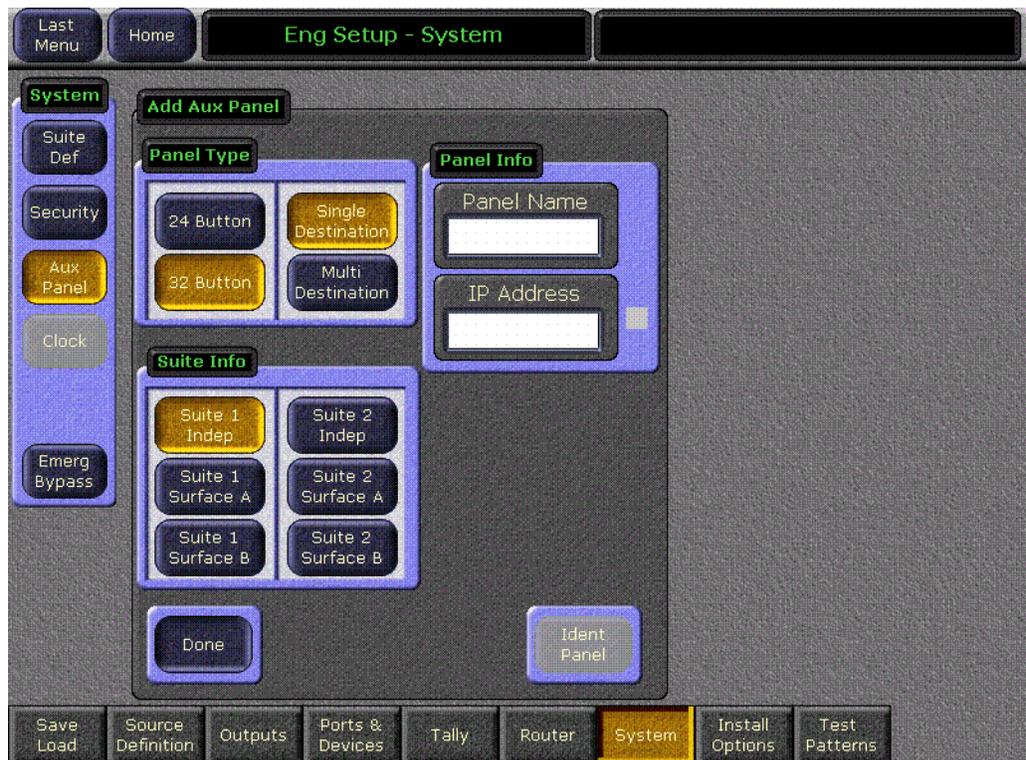
Select Serial Port (Only Serial Remote Aux Panels)

1. Go to the Port and Device Definition menu (**Eng Setup, Port & Devices** and select (**Remote Aux Panel**) from the scrolling list.
2. Touch the Assigned Serial Port data pad. On the Physical Serial Port Assignment pane, select either **Port 7** or **Port 8**.
3. Touch the **Done** button.
4. Connect the serial communications cable to be used with the Remote Aux panels to this serial port on the Video Processor frame.

Identify Remote Aux Panels

The Eng Setup System menu is used to identify the type of Remote Aux panel and its address. This menu is reached by pressing **Eng Setup, System, Aux Panel, Add Panel** (Figure 139). Slightly different menus appear, depending on whether the system is operating in Single Suite or Multi-Suite mode.

Figure 139. Eng Setup - System Menu



1. Select the type of panel (24 or 32 Button, Single or Multi Destination).

2. Enter the address of the panel.
 - If a 24-Crosspoint panel, touch the **Panel ID** data pad enter the Panel ID number set with the DIP switches on the Remote Aux panel.
 - If a 32-Crosspoint panel, touch the **IP Address** data pad and enter the IP address of the Remote Aux panel being configured.
3. Touch the Panel Name data pad and give the panel an easily recognized name.
4. Identify the Remote Aux panel as a component of a control surface of a suite, or Independent.
 - Remote Aux panels should be associated with a control surface if they operate in conjunction with other panels in that control surface. For example, if the TD uses Remote Aux panels as DPM input selectors, their User Pref will control the button mapping for these panels.
 - Remote Aux Panels should be Independent if they are used by a different operator. For example, Remote Aux panels used at the camera shading position should be configured Independent so that they are not affected by the TD's User Pref loads.
5. Touch the **Done** button.
6. Repeat this procedure with all the Remote Aux panels to be used with your Kalypso system.

Remote Aux Panel Button Mapping

After a Remote Aux panel has been identified it will be available for button mapping.

- The Button Mapping menu (accessed by touching **Daily Setups, User Prefs, Button Mapping**) is used to map the sources associated with each source selection button. This menu is also used to program joystick override operation (see *Joystick Override* on page 186).
- For multi-destination panels, the Aux Deleg Mapping menu (accessed by touching **Daily Setups, User Prefs, Aux Deleg Mapping**) is used to map the aux buses to delegation buttons.

Note Remote Aux panel button and delegation mapping settings are made here, but the configuration data is saved with Eng Setups. This is different from Local Aux panel and Main panel button mapping settings, which are saved with Daily Setups.

Refer to the separate *Kalypso User Manual* for specific button mapping instructions. Mapped buttons can also be labeled, using film inserts (see *Button Labeling* on page 255.)

Joystick Override

Camera joystick override allows the Aux bus to be momentarily switched to a camera for shading, then switched back to what ever source was previously selected, typically Program. Contact closures in the camera shading panels are wired to the joystick override connector on the Remote Aux panel Remote Aux panel joystick override is programmed using the Button Mapping menu. Joystick override selections are available at the bottom of the scrolling button mapping list (Figure 140).

Figure 140. Button Selection for Joystick Override



1. Select the Remote Aux panel to be programmed by touching the lower right **Remote Panel** button, touching the yellow data pad, and selecting the remote Aux panel from the list. After selection you are returned to the previous menu.

Note Remote Aux Panels need to be configured (Panel ID or IP Address set) before joystick override can be programmed.

2. In the center pane, scroll to the end of the list and touch the button for the joystick override contact pin to be programmed.
3. In the right Sources pane touch the button for the camera source associated with the camera shader wired to that contact pin.
4. Repeat for all the joystick override contacts to be programmed.

Configuration Files and Remote Aux Panels

Beginning with Kalypso version 9.1.5, Independent Remote Aux panel configuration data is saved with Eng Setups, and button mapping data for Remote Aux panels assigned to a control surface is saved to User Prefs. Remote Aux Panel configuration files for earlier software versions may not follow this convention, so these files should be reloaded in the proper order.

Note When updating software on your Kalypso system, first reload the Eng Setup file and then load the Suite Prefs, and finally load the User Prefs file to ensure legacy Remote Aux panel configuration information is retained.

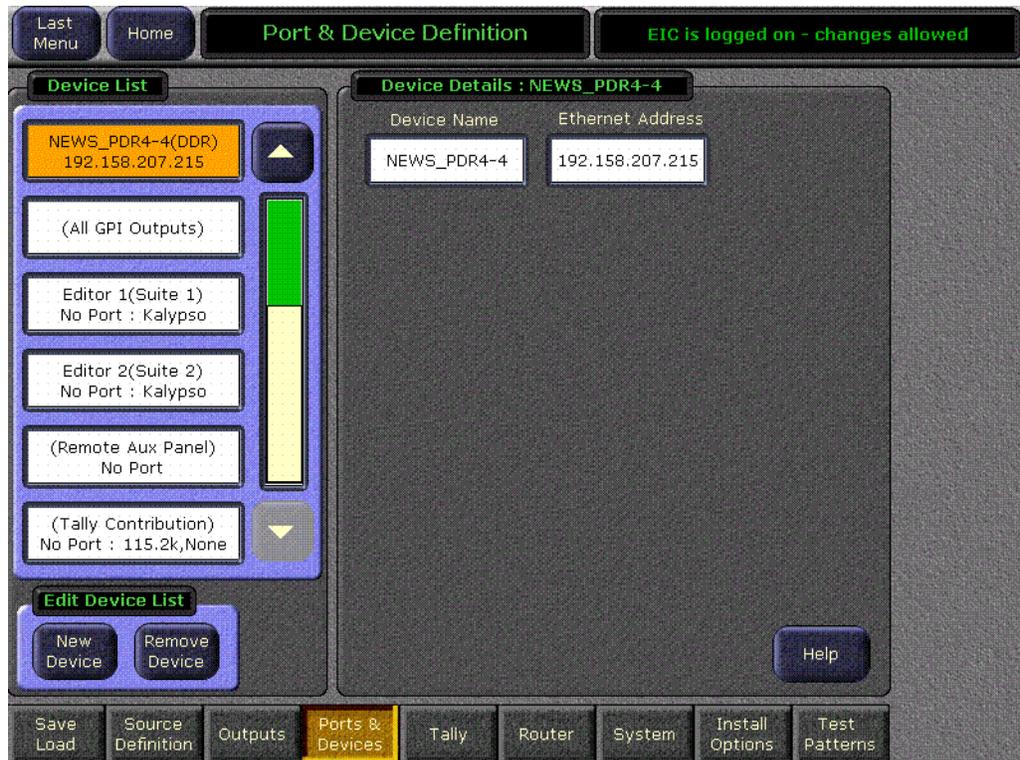
In general, if you are only making changes to an existing configuration on a system whose software version has not changed, you do not need to load all these file. However, you should be sure the Eng Setup is correct before you change a Suite Prefs file, and both the Eng Setup and Suite Prefs should be correct before you change a User Prefs file.

Remote Aux panels configured as Independent are only accessible for configuration when you are logged in as the EIC. Aux panels assigned to control surfaces can only be configured when the Menu panel is accessing that control surface.

Port & Device Definition Menu

The Eng Setups Port & Device Definition menus is used to create and edit *Device Definitions*. Each Device Definition contains the settings required to use the unique features of that device. DDRs, VTRs, and DPMs are associated with sources, while GPI and PBus devices are not. A new logical device can be created, and existing devices can be edited and deleted via this menu. Serial ports are also assigned with this menu. The menu is accessed by touching **Eng Setup, Ports & Devices** (Figure 141).

Figure 141. Port & Device Definition Menu



See *Section C-External Interfaces* for specific configuration instructions.

Tally Configuration

The Tally menus are used to configure the tally system. There are multiple tally calculators, three different tally calculation methods, and user assignment of tally relays. The results of the tally calculators are applied to the tally relays on the Tally modules in the Video Processor frame, and those relays control external tally lights. The menu set also allows the user to map Engineering sources to the tally relays.

One Tally module is shipped with the Video Processor frame and a second optional Tally module may be added. Each module provides 64 tally relay outputs. Tally is recalculated and refreshed every field.

About Tally Systems

In general, a tally system identifies which sources to the switcher contribute to the final picture at a selected point in the video chain. The identification is communicated by activating relays in the video frame. The method by which the sources are determined is called the tally calculation.

The tally calculation begins at a point in the video path and then traces the path of the signals upstream to their original video (and key) sources. The state of the switcher affects tally. For example, tally on a true clean feed only includes sources that contribute to the main output, but tally on a programmable clean feed can include sources that do not contribute to the main output.

When configuring a tally calculation, the user chooses the starting video path point (called a tributary) to trace back to its origin. The main On Air tally video output point is Pgm-Pst PGM A, but Pgm-Pst PGM B, Pgm-Pst C, and Pgm-Pst D are included in case these alternate programmable clean feed outputs have keys (or utility buses) that don't contribute to the PGM A output.

The On Air tally calculations are essential for switcher operation. (One calculator is reserved for On Air.) This tally calculation forms the basis for On Air indication (panel, camera tally lights, etc.), and other functions such as external device Auto Start, Off Air Advance, or router protections. On Air tally calculations normally start at the Pgm-Pst PGM A-D outputs.

User tally calculations can be used for purposes other than On Air tally. These tally calculations still trace the video path up stream from the specified points in the video path, but the starting point does not necessarily have to be a program output. For example, a Look Ahead tally begins at the Pgm-Pst Look Ahead Preview (LAP). When a transition is not in progress this virtual output is not on air.

The Output tally calculator indicates which sources contribute to designated outputs. For example, a M/E Iso tally is a user configured Output tally set up to begin at an M/E's PGM A, B, C and D. The tally would indi-

cate what contributes to the M/E's program outputs but not anything down stream of it. The tally would be the same whether or not the M/E was On Air.

The Look Ahead tally calculator indicates which sources will be on air if a main transition is performed on the selected level. One way this can be used is for a second set of tally lamps on a camera to alert the camera operator that his camera is next to be taken on air. Many control room monitor walls also include a secondary tally indicator for Look Ahead. Look Ahead tributaries do not necessarily leave the switcher as video signals. For example, an M/E has four program outputs but only two physical preview outputs. The LAP information for all four program outputs may be included in a tally calculation.

However, if an M/E is placed down stream of Pgm-Pst the On Air tally calculation can be configured to start at that M/E's program outputs. If this situation is planned, it is recommended that aux buses be set up to provide the real program outputs for the switcher and the On Air calculation configured using those aux buses as the tributaries.

You can use more than one starting point for tally calculations. Programmable clean feed (FlexiKey) and DoubleTake options allow the exclusion of video signals from the M/E main output (PGM A) that appear on one of the other program outputs. Include the other program outputs with the M/E main output (PGM A) as calculation starting points to tally all the On Air sources.

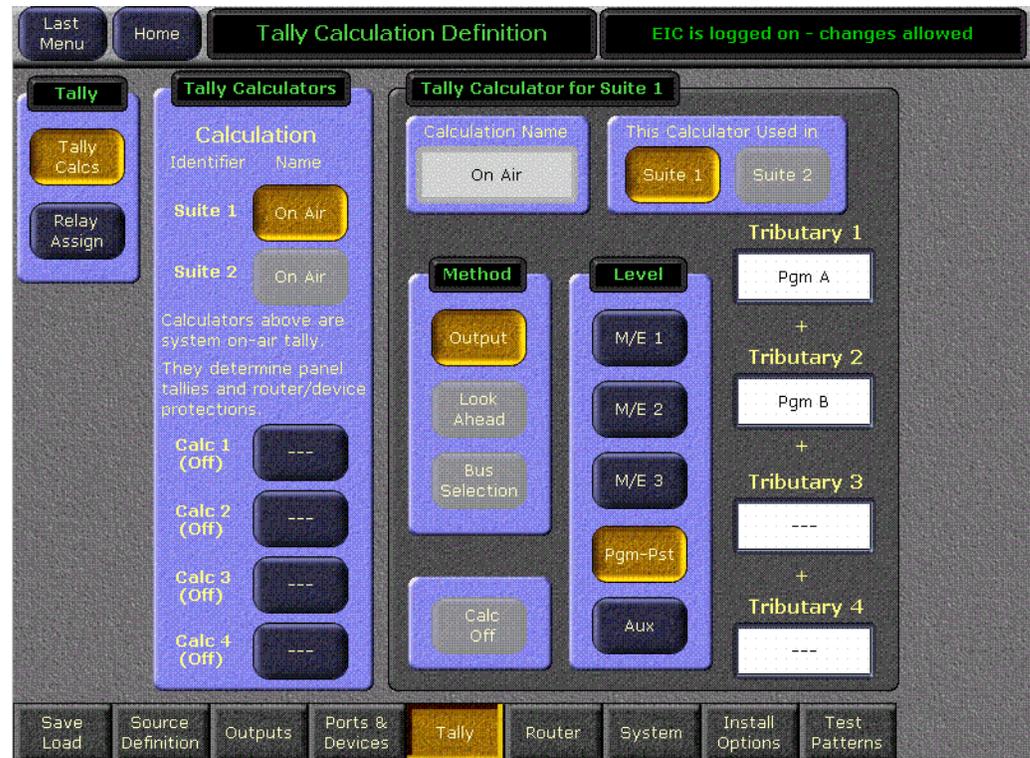
Kalypso allows tally calculations to ignore some of the M/E outputs if they are never used as alternate program outputs.

The Bus Selection tally calculator indicates which sources are selected on a specified set of switcher buses. The tally calculator using this method does not trace tributaries upstream; it only tells what sources contribute to the specified bus(es), even if the source is an M/E. For example, a Bus Selection tally calculation could be set up to indicate which source is selected on the Pgm-Pst A bus, permitting audio-follow-video selections to be run by the tally system.

Tally Calculation Definition Menu

The Tally Calculation Definition menu is used to select calculators, methods, and levels, name User calculators, assign outputs to Tributaries, and turn the User calculators on and off. Touch **Eng Setup, Tally, Tally Calcs**, (the Tally Calcs button is in the Function pane) to access the menu (Figure 142).

Figure 142. Tally Calculation Definition Menu



The Kalypso tally calculator may use a method other than Output On Air to compose its list of tallied sources. There are 3 tally calculation Methods or types; Output, Look Ahead, and Bus Selection.

Kalypso has five independently running tally calculators. For example, the system can calculate On Air tally, Look Ahead tally, and M/E output tallies for three M/Es at the same time. The first of the five tally calculators is reserved for On Air tally calculation.

Up to four tributaries can be included as the basis for each tally calculation. For example, all four program outputs of the Pgm-Pst bank are typically included in the On Air tally calculation. The final tally source list is a union of the sources found on each of the four tributaries. If aux buses are actually used as the program outputs of the switcher (for example, to facilitate the use of M/E 1 as additional down stream keyers), up to four aux buses can be the basis of On Air tally calculations.

Tally calculations do not require actual outputs, for example, LAP tributaries are virtual and may never leave the M/E.

In the Tally Calculators pane, there are five available Tally Calculators. When one of the Tally Calculators is selected, then the pane to the right delegates to the selected calculator and shows the calculation Method, Level, and Tributaries.

The Calculation Name data box pops up the alphanumeric keyboard so that a User Button can be given a meaningful name. In this example, names have been entered for User 1, User 2 and User 3. The first tally calculator has a fixed name so the Calculation Name data box is grayed out, and the calculation name is automatically set to **On Air**. Since the On Air Calculator is restricted, the buttons for the other methods are disabled. Also, the On Air system tally is always on and can not be shut off.

A different setup is shown in Figure 143. The calculator is User defined with a Look Ahead Method selected, the level is Pgm-Pst, and it uses two look-ahead preview buses as tributaries.

Figure 143. Tally Calculation Definition Menu, LAP



The Method pane has three button choices so you can select between **Output**, **Look Ahead**, and **Bus Selection**. **Calc Off** is a toggling button with a red LED. If **Calc Off** is activated, the tally calculator is shut off, and (Off), is printed

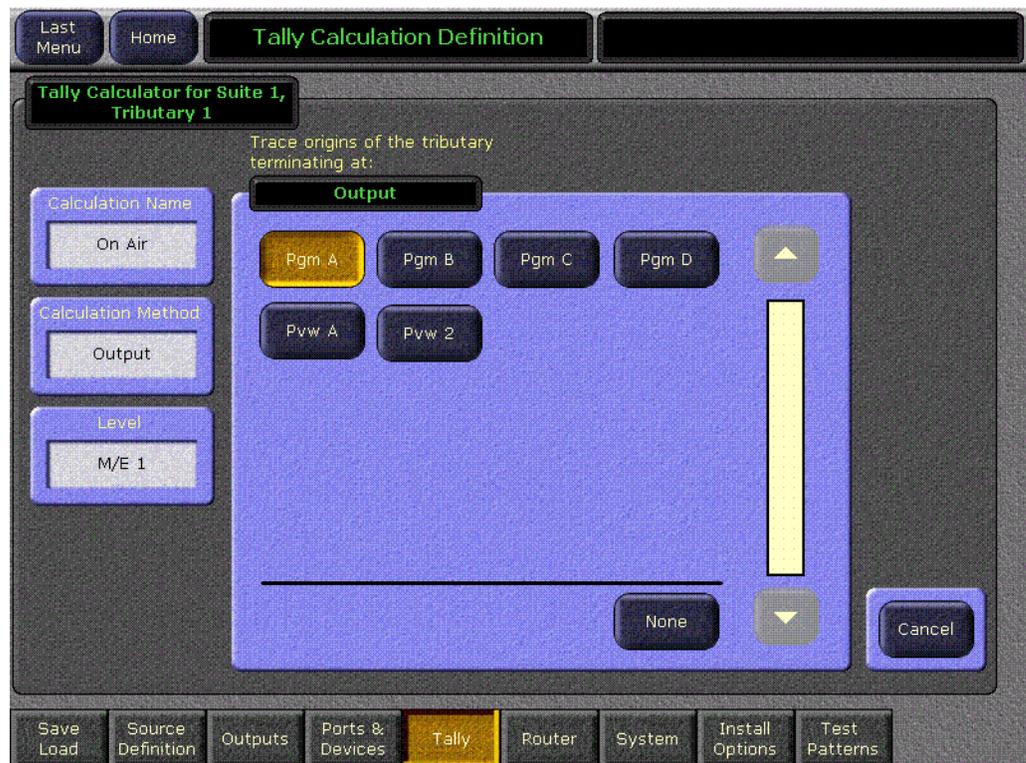
under User # in the Tally Calculations pane, as shown under User 3 in this example. Calculations for On Air Tally can not be shut off. When the calculation method is on, the (Off) annunciator disappears.

There are four Tributaries available for each tally calculator. There are plus (+) signs between each of the Tributaries to indicate they all sum (or logically OR) together to form a union of sources. Each tributary has a data box showing the output through which the tributary is traced upstream to its source. If a tributary has not been defined or has been cleared the data box displays ---.

The Tributaries for a given Tally Calculator must all terminate in the same M/E or Aux system.

The Tributary data boxes, when touched, pop up a picker menu as shown in Figure 144.

Figure 144. Tally Out Popup Menu



The title to the popup pane shows the calculator identifier and the Tributary number. For reference, the Calculation Name, Calculation Method, and Level are shown in non-editable data boxes.

The starting point for the tally calculation is selected in the picker pane. Which is titled Output when the switcher outputs are listed. This illustration shows six outputs on Kalypso for Program-Preset or an M/E.

If the Method is Bus Selection and the Level is Aux, the pane in Figure 145 would appear.

Figure 145. Tally Aux Popup Menu

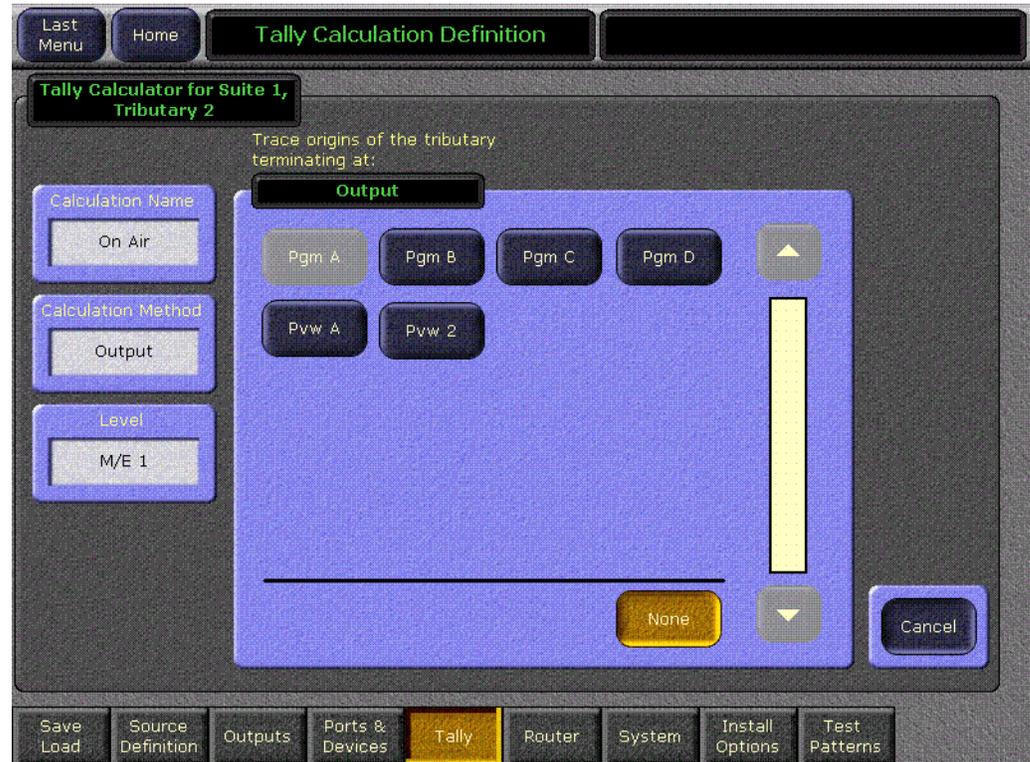


The scroll bar appears because there are more logical aux bus buttons than can fit on a single pane.

When the popup is entered for a tributary that has no assignment, the **None** button is shown lit. If the popup is entered where there is already a tributary assignment, the assigned output button is shown lit. Pressing any button in the picker selects that output and exits the popup. Pressing the **None** button in the source or aux picker clears the tributary, setting it to --- and exits the popup. Pressing the **Cancel** button exits the menu without changing the tributary assignment.

After a tributary choice has been assigned, subsequent popups gray out the already selected choice(s). This is shown in [Figure 146](#). In this example, Tributary 1 was Pgm A, so in the popup for Tributary 2, Pgm A is grayed out.

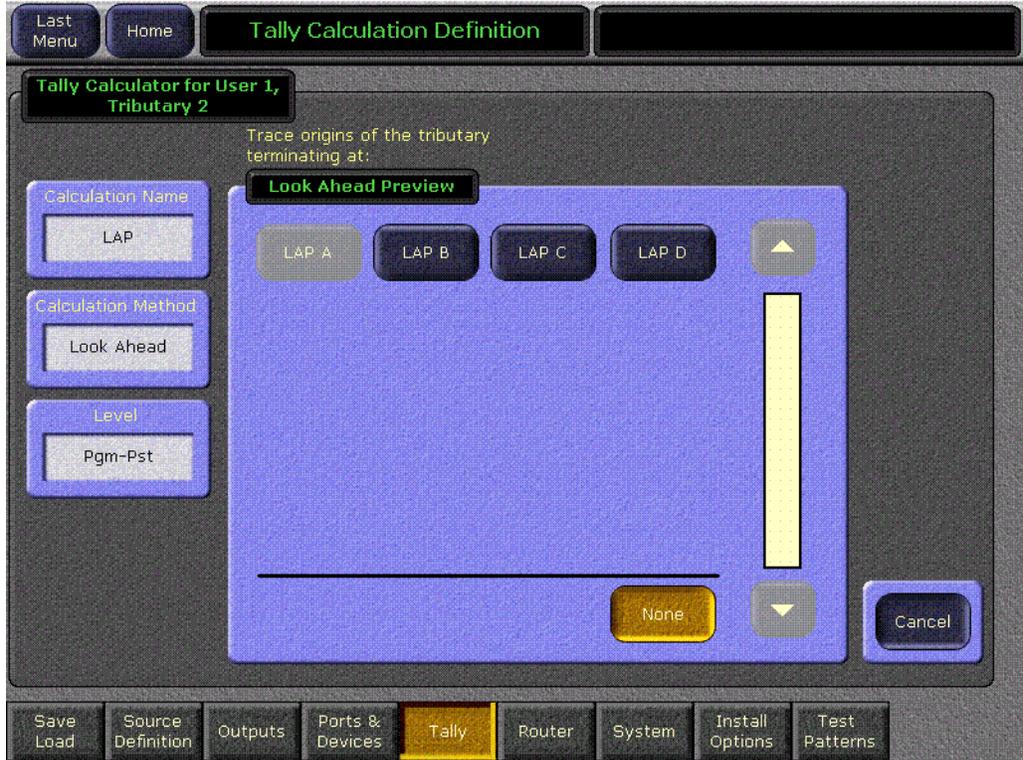
Figure 146. TallyPopupTrib2 Menu



If the Calculation Method is Look Ahead, Aux is grayed out in the Level pane, because there is no look ahead point on an aux bus. Then when a Tributary data box is touched, the following popup in [Figure 147](#) appears.

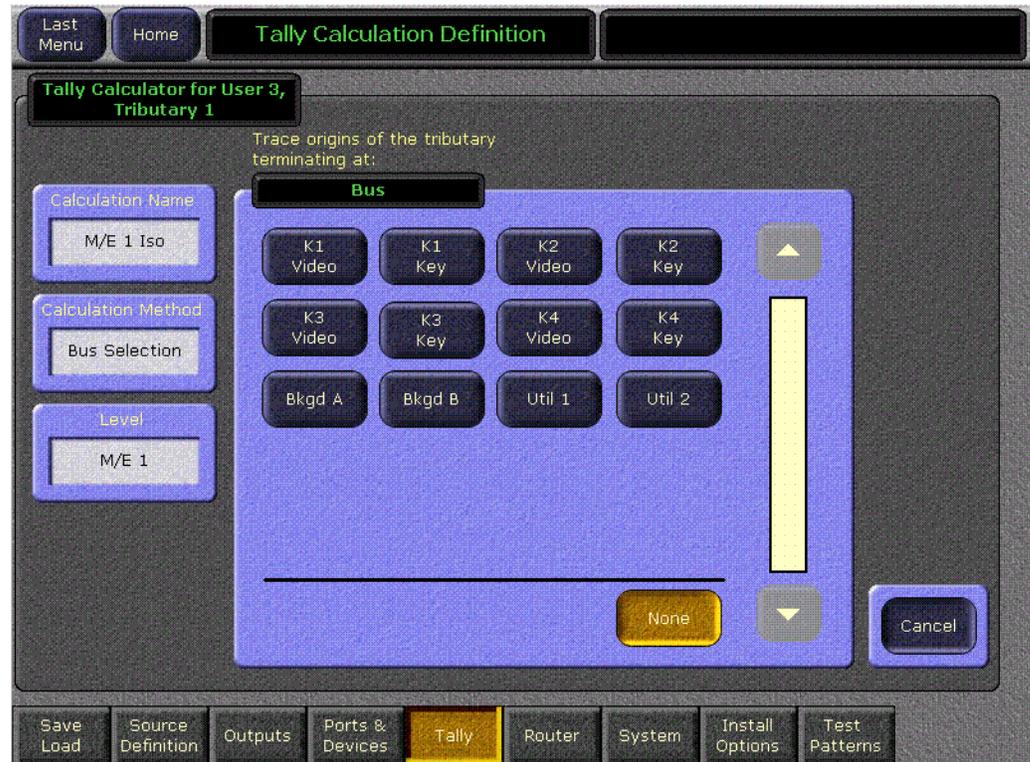
The available points in the video chain for look-ahead previews are called LAP A, LAP B, LAP C, and LAP D. In the example shown, LAP A is grayed out because it has already been assigned to Tributary 1.

Figure 147. Tally LAP Popup Menu



If the Calculation Method is Bus Selection, and if the Level is M/E 1, M/E 2, M/E 3, or Pgm-Pst, and the user touches a Tributary data box, the following popup in [Figure 148](#) appears. All the input buses in the M/E are shown, and the key buses are shown as separate Video (fill) and Key (cut) buses.

Figure 148. Tally Bus Popup Menu



Tally Relays

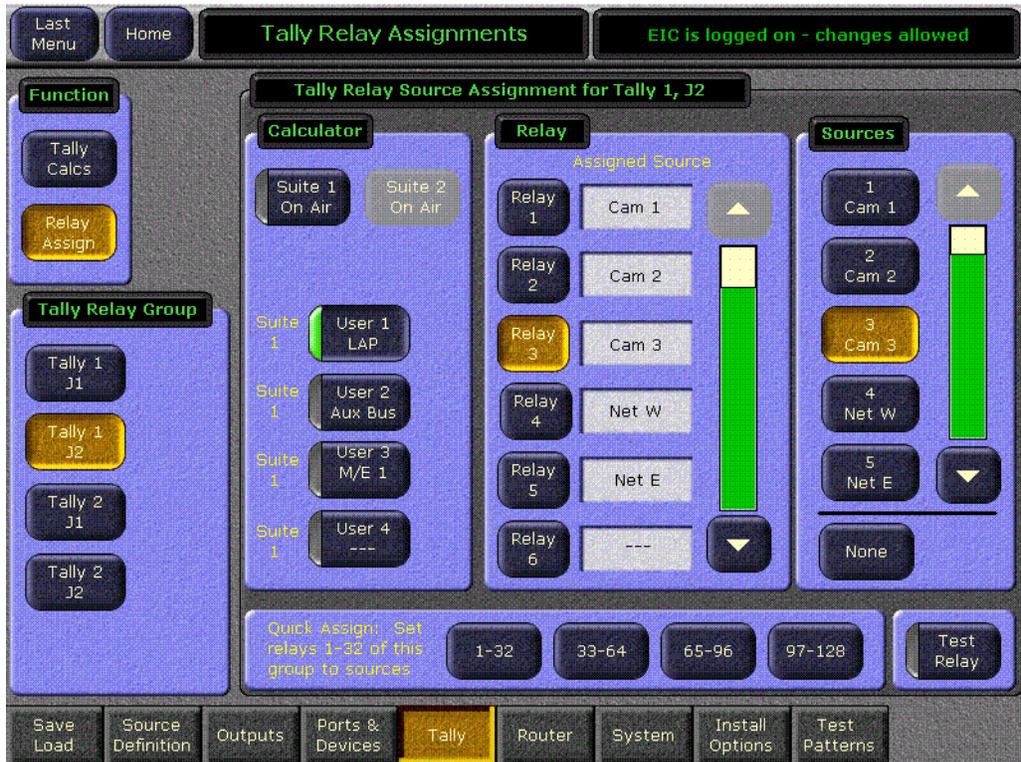
Tally relays are grouped in increments of 32 relays. Each group can be associated with any combination of the five tally calculations, and each relay in the group can be associated with a different source. For example, the first group of 32 relays could be configured for On Air tally with the first relay tallying source 14, the second tallying source 47, etc. The second group of relays could provide look ahead preview for the same (or different) sources.

Combining tally calculations when configuring tally relay groups can often minimize external wiring and conserve relays. For example, if an aux bus feeds the record input to a replay device, a user tally calculation can be set up for output tally of that aux bus and combined with the On Air tally calculation. This permits Auto Start, etc. to function normally, but the On Air relay closures will include the source feeding the replay recorder.

Assignment of Tally Relays to Sources:

Touch **Eng Setup, Tally, Relay Assign** (the Relay Assign button is in the Function pane) to access the Tally Relay Assignments menu (Figure 149).

Figure 149. Tally Relay Assignments Menu



The default tally calculator is the On Air calculator, and for the standard 64 relays to tally the first 64 sources (1-32 and 33-64). The second module will tally sources 65 through 128 (65-96 and 97-128).

There are two standard relay groups on each Tally module. These relay groups are named according to the Tally Module name (Tally 1, Tally 2) and jack number (J1, J2) on the rear panel of the Video Processor frame. Touching a button for a relay group delegates the Tally Relay Source Assignment pane to show details for the selected group. If only one tally relay board is installed, then only the two buttons for the installed board show on the Tally Relay Group pane.

In the Tally Relay Source & Assignment menu is a selector for the Calculator, a Relay list, and a Sources list. In addition, there are Quick Assign buttons and a Test Relay control.

Touch the Tally Calculator to be assigned to the selected relay group. All buttons toggle on and off independently, so you can select more than one calculator to be applied in a logical OR to the delegated relay group. The text in the buttons is formatted such that the upper line shows the Calculator Identification and the bottom line shows the Calculator Name.

Touch a numbered Relay button from the list, and then assign a Source to that Relay from the list of Sources. The Source button displays the Engineering ID, and the user defined Engineering name (if an Engineering name has been entered in the Source Definition menu). Tally relays map to Engineering Sources not Logical Sources, to ensure tally is consistent regardless of Source patching. The Source name will display in the non-editable data box next to the Relay. Relays already assigned will automatically show their assigned Source. If a relay is unassigned or the **None** button is selected for that Relay, --- is displayed.

The four **Quick Assign** buttons will assign the 32 relays in the group respectively to sources 1-32, 33-64, 65-96, or 97-128.

CAUTION When a Quick Assign button is pressed it will immediately assign the relays. To reassign the relays requires each button to be individually selected and reassigned one at a time.

The Test Relay button when toggled On causes the selected relay to flash on and off at a rate of 1 Hz as an aid in setup and troubleshooting. The test flash mode persists as long as the Test Relay is on and is automatically shut off when either a different relay is selected in the Relay pane, or when a different relay group is selected in the Tally Relay Group pane, or when the Tally menu is exited.

Sync/Timing Menu

The Sync/Timing menu, accessed via **Eng Setup, System, Sync/Timing**, reports the status of the sync regenerator of the Kalypso system (Figure 150).

Figure 150. Sync/Timing Menu

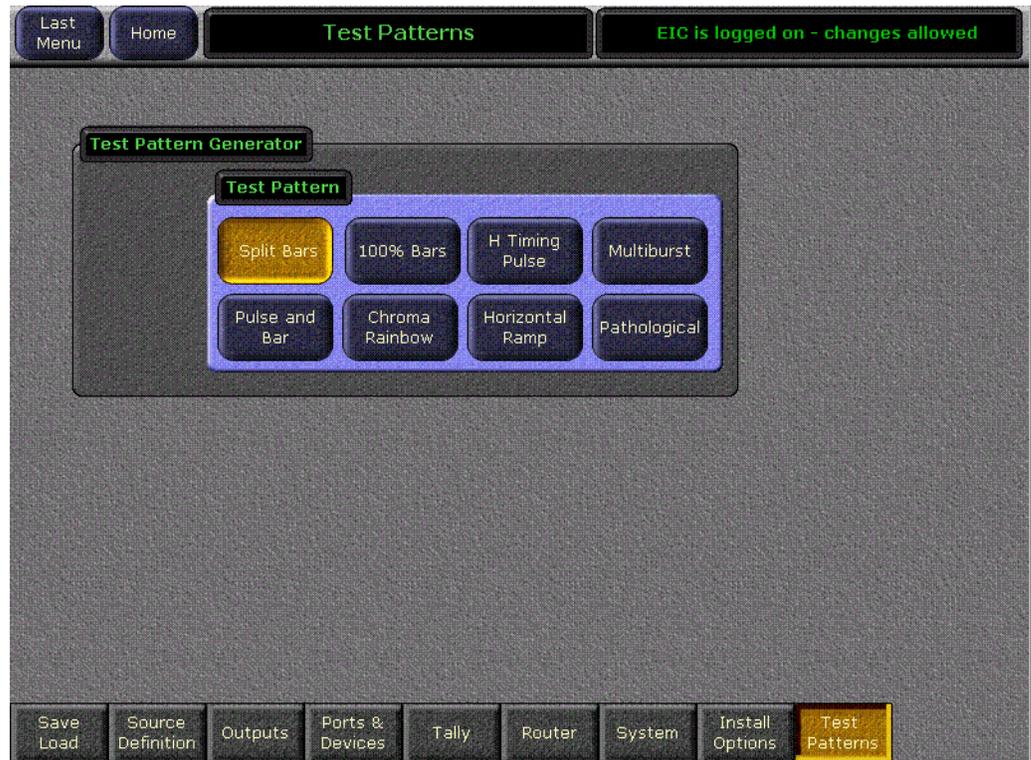


The Kalypso sync regenerator locks to an incoming reference signal and reports the line standard it is regenerating in the Operating Mode field. That operating mode persists until a reference input different from the current line standard is detected and locked to. If the reference signal is temporarily lost, the Kalypso system will continue to free run in that line standard and a NO INPUT status will be reported.

Test Patterns Menu

The Eng Setup-Test Patterns menu (Figure 151) allows the selection of different video test patterns. The chosen test pattern will be displayed when the Test source is selected.

Figure 151. Test Patterns Menu



Other Engineering Setups

Other Engineering Setups menus are available for various purposes.

- Authorization codes for software enabled options can be entered in the Install Options menu (see [Authorization Procedure on page 267](#)).
- Configuration settings are available for an external routing system (see [Router Interface on page 403](#)).
- Configuration settings are available for the Emergency Bypass Option. See the separate *Kalypso Emergency Bypass Option Instruction Manual* for detailed information.

Save Engineering Setups

After defining the Engineering Setups, you can save them to disk using the Eng Setups Save-Load menu (Figure 152).

Figure 152. Eng Setup Save-Load Menu



We suggest you save your files to Zip disk to prevent accidental erasure. However, Engineering Setup files may be saved to any accessible drive using the file browser features of this menu.

To Save Engineering Setups to Zip Disk:

1. Insert a formatted Zip disk into the Kalypso removable media drive.
2. Go to the Eng Setups Save-Load menu by touching **Eng Setups, Save Load**.
3. Navigate to the desired destination directory with the **Up, Top, and Open** buttons and/or create and name a new folder for the file with the **Create Folder** button.
4. Touch the **File Name** data pad and enter the name you wish the saved file to have (you may want to name it by system and date).
5. Touch the **Save** button.

CAUTION Saving a file with the same name as an existing file will overwrite that file without displaying any precautionary message.

6. Eject the Zip disk, label it, and store it in a safe place.

To Load an Engineering Setup File from Zip Disk:

1. Insert a formatted Zip disk into the Kalypso Zip drive.
2. Go to the Eng Setups Save-Load menu by touching **Eng Setups, Save Load**.
3. Navigate to the directory containing the file you wish to load, using the file browser buttons in the upper right. You can use the **Top** button to display the Zip drive letter.
4. Touch the icon of the desired file so it is highlighted.
5. Touch the **Load** button.

CAUTION The Load button immediately replaces information the Kalypso system is currently using with the selected file information. When configuration files are loaded, significant changes to Kalypso system operation are possible.

Daily Setups

Daily Setups are available to operators as well as facility engineers. These settings may need to be changed on a session by session basis. The Kalypso system supports Suite Preferences and User Preferences.

The engineer in charge of a Kalypso system should create and save at least one default set of Suite and User Preferences so the system can be set to a known state. This can be accomplished using the Daily Setups Save-Load menu. Save these settings to Zip disk for backup, and install them in the Profiles directory for easy access.

The following items in particular will help you restore the system to a known state for troubleshooting and testing.

Suite Preferences (Suite Profile)

- E-MEM Prefs,
- Default Keyframe,
- Video Settings,
- Source Patch,
- GPI Input and Output Settings, and
- Source Memory (On/Off).

User Preferences (User Profile)

- Button Mapping,
- Aux Deleg Mapping,
- Shift Prefs,
- Source Display, and
- Clip Hi-Lo Prefs

Daily Setups Save-Load Menu

- Source Memory settings.

Refer to the separate *Kalypso User Manual* and *Kalypso Reference Manual* for information about Daily Setup configuration, saving, and loading.

Resource Sharing

Introduction

The Resource Sharing feature permits the allocation of Kalypso system resources between two suites. This allows independent system operation from multiple locations without conflict.

Logical resource assignments allow the reuse of E-MEM effects in either suite regardless of which specific hardware resources were allocated.

Security provisions can restrict unauthorized access to a suite from a Menu panel in the other suite, or from a PC connected to the Kalypso system network.

Each suite can be run with its own suite preference settings, and two different user preference settings can operate simultaneously in each suite. These preferences can be saved and loaded, permitting reliable Kalypso system changes to meet varying requirements.

The current suite/resource relationships are maintained in non-volatile (NV) memory. If the Kalypso system powers down or is reset, resource allocations for each suite are restored when the system returns to operation.

Collaborative Resource Sharing

Collaborative resource sharing permits a group of operators to have simultaneous access to a resource. For example, a video operator may want access to an M/E so he can set up a chroma key, but the TD also wants control of that M/E so that he can put the chroma key on air. This type of sharing has always been available on Kalypso systems, simply by installing additional control panels, and does not require the Resource Sharing feature. However, prior to 8.0 software only one User Preference could be used on the entire Kalypso system at a time, which limited its usefulness (for example, source to button mapping had to be the same on all Main panels).

Corroborative system operation has inherent limitations. Since one operator can change the settings used by another operator, it is assumed the operators are in close communication with each other so they can avoid system control conflicts.

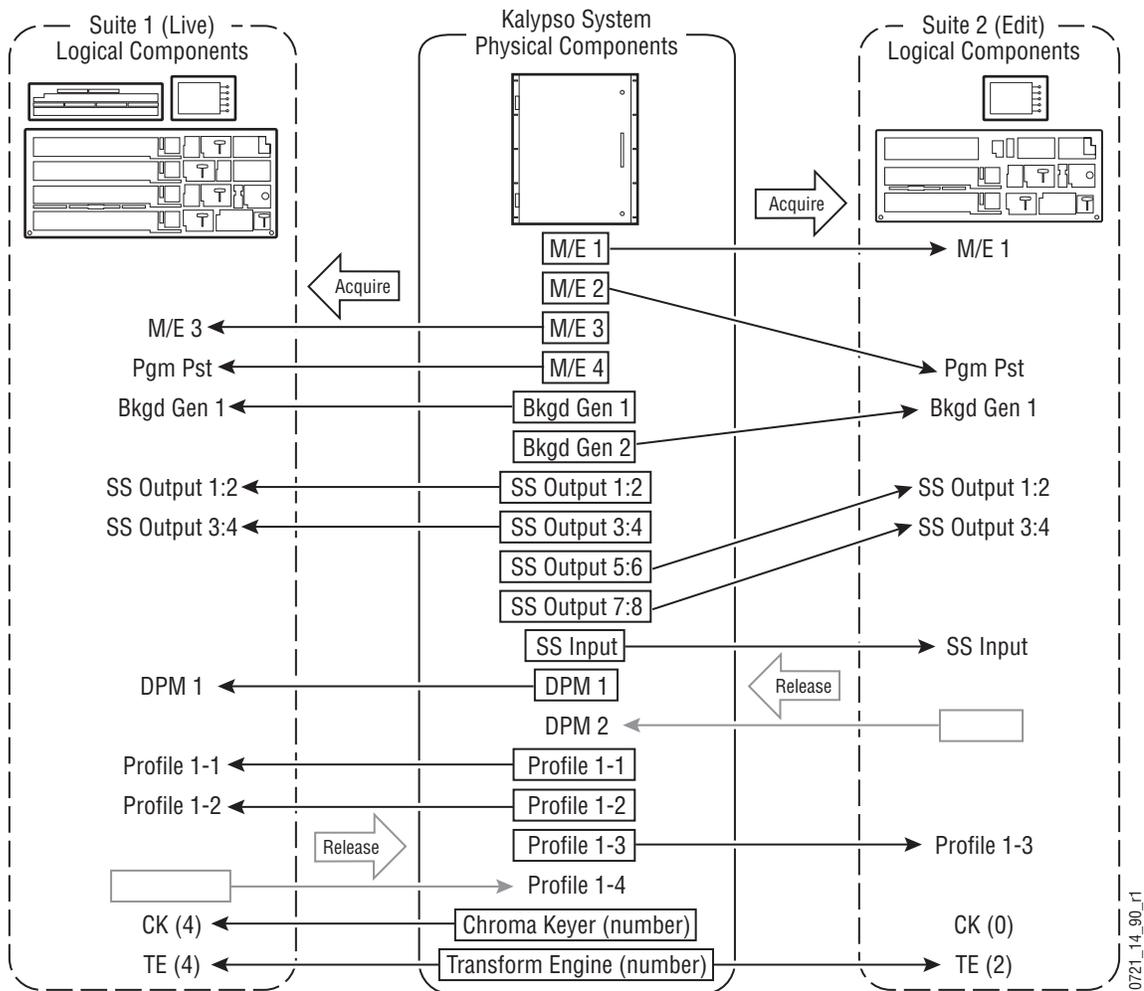
If two conflicting corroborative commands are sent, the Kalypso system ends in the state of the last command processed. For example, one operator could select a source on a bus of an M/E at nearly the same time another operator selects a different source on that same bus. The output of that M/E will momentarily display the first source and then switch to the last source selected, possibly causing an apparent flash on that output.

The Resource Sharing feature allows collaborative sharing of Kalypso system components with different User Preferences. For example, when a 1-M/E panel is used in a corroborative environment with a 4-M/E panel, the button mapping for the two panels must be different because of the different number of source buttons available.

Independent Resource Sharing

Independent resource sharing isolates an operator or group of operators from other operators, by defining two separate suites. When one suite has acquired a resource, only the operator or group of operators in that suite will be able to control it. An example of independent sharing is splitting a 4-M/E Kalypso system into two independent 2-bank switchers (Figure 153). The Resource Sharing feature makes this possible.

Figure 153. Independent Resource Sharing Example



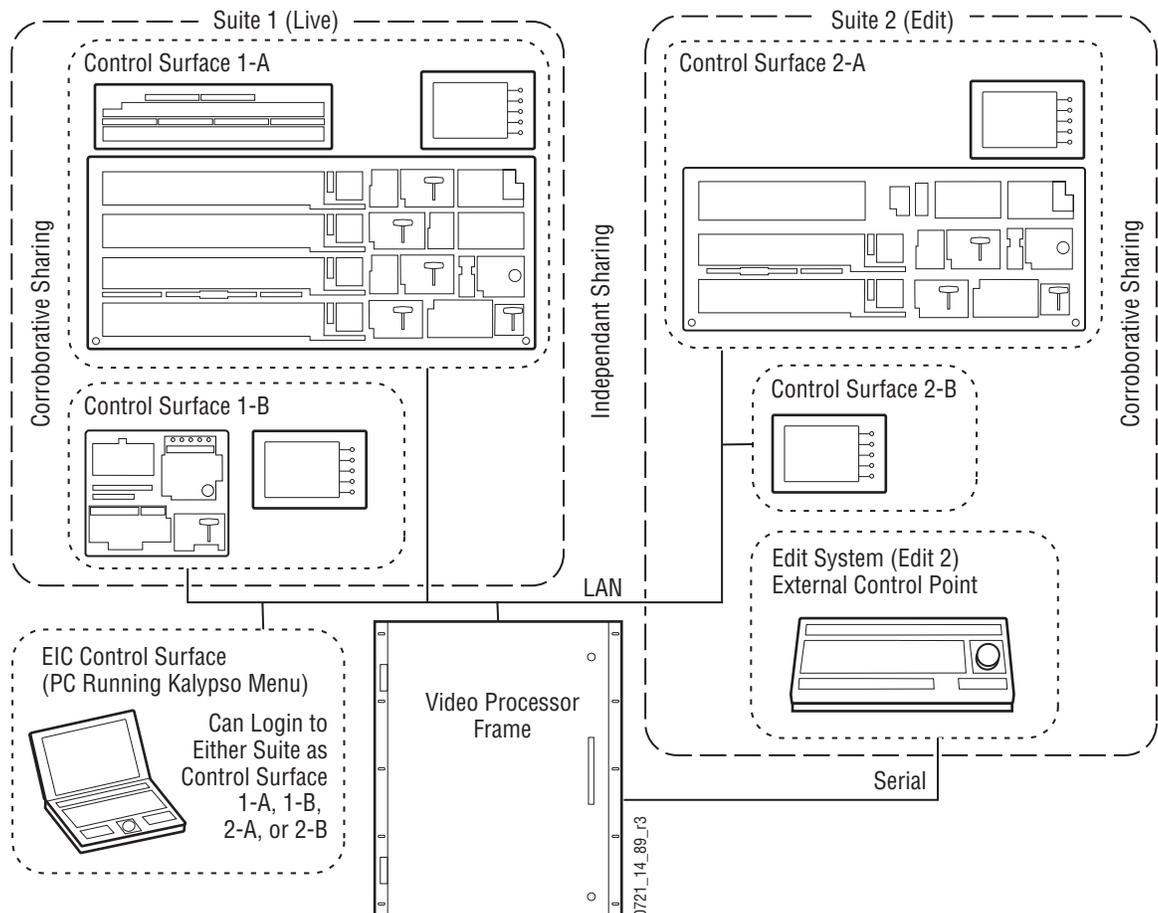
When a suite acquires a physical resource (like an M/E) it uses that resource logically. For example, the M/E 2 physical resource can be used as a logical PGM PST bank. Each of the two switchers created can therefore

have their own PGM PST bank, and this allows effects built in one suite to operate correctly when loaded and run in the other suite. Effects will also run correctly in the same suite when run at a later time even if different physical resources have been acquired. Resources can be released by a suite. Once released, these resources can be acquired by the other suite. This permits dynamic reconfiguration of the system resources to meet varying operational requirements.

Suite

A suite is a grouping of one or more control surfaces (described below), and constitutes a coordinated working environment. Resources are attached to a suite rather than to individual control surfaces. All control surfaces in one suite have access to all resources assigned to that suite (collaborative sharing). Control surfaces in one suite are not able to control resources assigned to the other suite (independent sharing). Suites provide isolation from operators in the other suite. You will probably want to create separate suites for different control rooms, as indicated in [Figure 154](#). Otherwise, an operator in the edit suite could affect the on air output from the live suite.

Figure 154. Suites and Control Surfaces Example



Control Surface

A control surface is generally a group of panels which interact and provide a single user a unified work surface. An example of this type of control surface is a Main panel, Menu panel, and Local Aux panel of a 4-M/E Kalypso system. These panels combine to form a Technical Director's (TD) control surface. Other panels like a shot box or additional menu can be added to a control surface.

A control surface may also consist of a single item. For example, a Menu panel (or a laptop computer running the Kalypso Menu application) can act as a separate control surface in a suite. This could be used by a Still Store operator to control the Kalypso's internal Still Store.

With Resource Sharing, up to two control surfaces can be created for each of the two suites. Each control surface can load its own User Prefs, so they can behave differently from one another. For example, different sources can be mapped to the source select buttons of the two control surfaces in the same suite, permitting quick access to different sources appropriate for each work location. If you need different User Prefs operating at the same time, separate control surfaces are indicated.

Control surfaces allow operators to collaborate on the same production while providing isolation between the operators themselves. For example, a small Main panel set up in the studio for rehearsals will need access to the same effects as the larger Main panel in the control room, but may need access to a specific set of sources. The smaller panel also requires a different button mapping. If a Menu panel is associated with each Main panel, the DPOP operations of one panel should affect its menu, not the other one.

Remote Aux panels are special in that they can be associated with a suite's control surface, or they can be associated with a suite but not with a control surface (independent). Independent Remote Aux panels have their own User Pref for button mapping and delegation mapping. This provides isolation of one user (a video operator for example) from the User Prefs of the TD.

Adding panels or menus to a control surface expands the capability of that control surface. Typical additions to a control surface would be Remote Aux panels or Kalypso Menu applications (typically on a laptop). When additional Menu applications are added to a control surface, only the primary menu interacts with the Main panel for DPOP operations.

Desired Resources

The Kalypso Resource Sharing feature employs a desired resources mechanism. Desired resources are those that are needed for a particular show. These resources can be specified in advance and saved as part of a Suite Pref. Preparation for a specific show can then be accomplished by simply

loading the preference file, and then acquiring the desired resources with the touch of a single button. It is not necessary to know what all these specific resources are and acquire them manually.

For example, an evening newscast probably needs all the switcher's resources. However, a noon cut-in might be switched with only M/E 3, PGM-PST, one chroma keyer, and two TEs. The Suite Pref for the evening newscast marks all resources as desired; while the noon cut-in Suite Pref marks only M/E 3, Pgm-Pst, one chroma keyer and two TEs as desired. Acquiring the resources necessary for these programs is then accomplished by loading the Suite Pref and touching Acquire Desired in the Acquire menu. The resources not acquired for the noon cut-in remain available for use by operators in the other Kalypso suite.

Logical Aux Buses

Each suite has its own set of numbered Logical Aux buses. This means effects built for one suite will run properly in the other as long as the physical connections for the same numbered logical Aux buses are similar. For example, if Aux bus 5 in one suite is used to feed that studio's monitor wall, using Aux bus 5 in the other suite to also feed that studio's monitor wall will make effects compatible between the suites. Note that these Aux buses have different internal paths and different physical connections, but share the same logical Aux bus number.

When Aux buses have been associated with an external device, like a DPM, when that external device is assigned to a suite the associated logical Aux bus assignments follow. Only one instance of each of these DPM assigned Aux bus numbers exist in the system, not two. Aux buses for DPMs are used either in suite 1 or suite 2 and are not logically assigned.

Remote Aux Panels

Remote Aux panels are set up as part of a particular suite. They then become another control surface of that suite, with functionality limited to controlling only the Aux buses assigned to that suite.

External Control Points

Some types of Kalypso system control originate from an external location, like an edit controller, or a GPI contact closure. The Resource Sharing feature accommodates these control points differently.

A separate editor port can be assigned to each suite. An edit controller connected to each port is considered part of only that suite, and controls only the resources currently acquired by that suite.

GPI inputs themselves are not assigned to individual suites. Each suite can be configured to respond to particular GPI commands, with the other suite ignoring these commands.

Setting Up Resource Sharing

Preparation

Kalypso Release 9.0 or higher software must be installed on all the Kalypso HD system components.

Your Kalypso system should first be fully operational. The configuration files loaded above will accomplish this on an existing Kalypso system. For new customers, an initial system configuration will be required. This basic setup will become the baseline for Suite 1 operation. This includes having the Engineering Setup configured with the sources defined, Suite 1 outputs assigned, Suite 1 tally contacts connected and serial tally defined (if used), and any external interfaces (DPM, DDR, etc.) should be installed and operational that will be used in Suite 1.

Default Suite Prefs should also be defined and saved under a file name identifying its use for Suite 1. A default User Prefs file should also be defined and saved identifying it as a default setting for Control Surface A of Suite 1. All these files will become the starting point from which changes will be made to make full use of Resource Sharing.

When the above is accomplished and basic system functionality is confirmed, you can then activate Multi Suite mode, set up Suite 2, and more easily troubleshoot any configuration issues that may arise.

If you will be adding new Kalypso system components for use with Resource Sharing, all these components must be installed and configured on the network, using valid IP addresses. All control surfaces participating in Resource Sharing will also need to be in communication with the same Kalypso Video Processor frame. After the primary Main panel has been installed and its connectivity verified, one new panel should be installed and its connectivity also verified before you install any additional panels. This will make it easier to troubleshoot any IP addressing problems that may occur.

General Procedure

Prepare Worksheet

A worksheet is helpful for planning your multi-suite installation and configuration. The worksheet should list all panels and PCs running the Menu application, their IP addresses, and their Suite and Control Surface associations (if any). It should also list all Remote Aux panels, which Suite they belong to, and which Control Surface (if any) they should be associated with. Physical outputs should also be listed with their Suite association and which Fixed output or Aux bus they are associated with. This list should also list the destination of the output (main program out for the suite, Aux bus feeding the studio monitor wall, etc.).

Configure Control Surfaces

Control Surface definitions are part of Engineering Setups, apply to the entire Kalypso system, and so affect both suites.

1. Logon as the EIC using the Menu panel associated with what will be Suite 1.
2. Touch **Eng Setup, System, Suite Def** to go to the Suite Definition menu (Figure 155).

Figure 155. Suite Definition Menu, Initial Display

The screenshot shows the 'Suite Definition' menu with the following sections:

- System**: Suite Def, Security, Aux Panel, Clock, Emerg Bypass.
- Frame**: Frame Name (Frame), Single Suite (selected), Multi Suite, Frame IP Address (192.168.0.20).
- StillStore**: Still Store Name (StillStore), Still Store IP Address (192.168.0.22).
- Suite 1**: Suite 1 Name (Suite1).
- Suite 2**: Suite 2 Name (Suite2).
- Kalypso Nodes**: A table with 8 rows and 3 columns: IP Address, Node Name, and Suite & Control Surface. The first row is highlighted in orange.

	IP Address	Node Name	Suite & Control Surface
1	0.0.0.0		1 A
2	0.0.0.0		1 A
3	0.0.0.0		1 A
4	0.0.0.0		1 A
5	0.0.0.0		1 A
6	0.0.0.0		1 A
7	0.0.0.0		1 A
8	0.0.0.0		1 A

Bottom navigation: Save Load, Source Definition, Outputs, Ports & Devices, Tally, Router, System (selected), Install Options, Test Patterns.

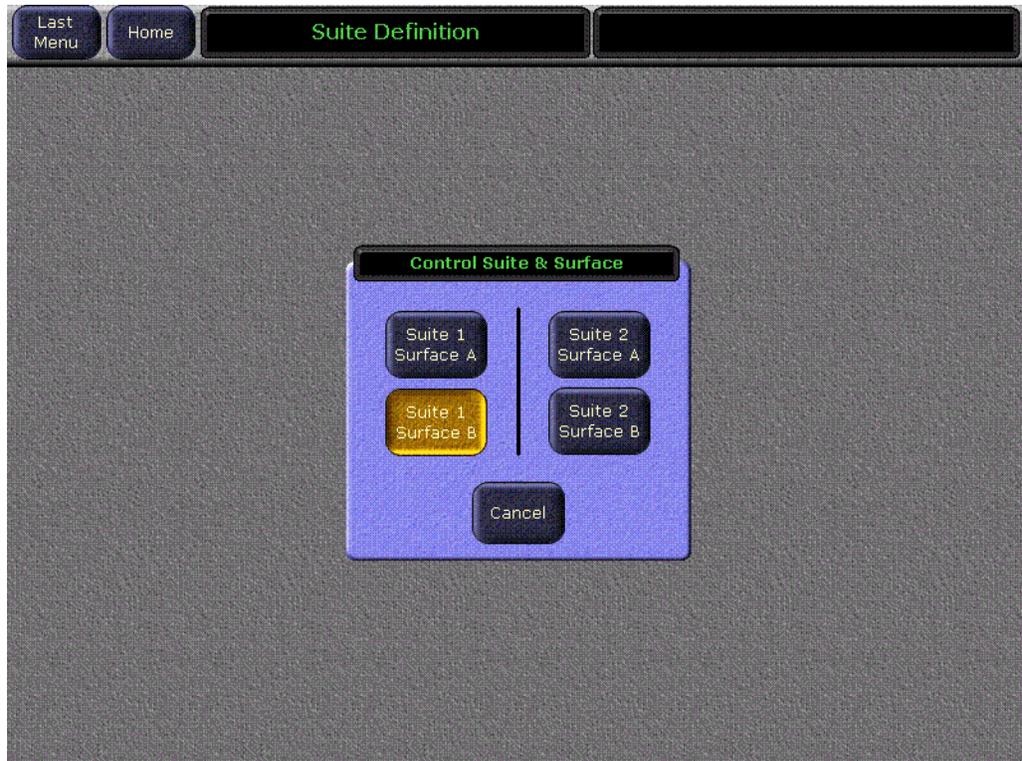
CAUTION When logged in as the EIC, changes made to the Kalypso Node scrolling list of IP Addresses are sent to the Video Processor frame as they are entered. The existing IP connections used by the frame are retained temporarily, but resetting that node's device or the frame imposes the new address and the previous connection will be lost.

3. Enter the IP addresses of all Kalypso system components to be used as nodes for Resource Sharing with the IP Address data pads in the scrolling list. It is essential this information (at least for the Menu panel used for configuration) is entered before the frame is rebooted in Multi Suite mode, to ensure access to the system from that Menu panel. In Multi Suite mode panels will not connect to the frame unless their IP addresses are in the Node list.

Note The IP address fields in the scrolling list determines which panels are allowed to connect to the Video Processor frame, and any changes take effect when the frame is reset. These IP address fields are different from those in the Frame and Still Store panes, which apply to the Menu panel and take effect when the Kalypso Menu application is reloaded or the Menu panel is reset.

4. Name both suites in the Suite data pads at the bottom of the menu, and name each node with the Node Name data pads in the scrolling list. While naming suites and nodes is optional, it can help clarity where components are located, helping both users and the EIC.
5. Select the suite and control surface each node will be associated with by touching the labeled data pad in the scrolling list. Control Suite and Surface buttons will be displayed permitting this selection ([Figure 156](#)).

Figure 156. Control Suite and Control Surface Selection



6. Select **Multi Suite** mode (Figure 157).

Figure 157. Suite Definition Menu Example

Frame		Kalypso Nodes		
Frame Name	Kal-Bay 1	IP Address	Node Name	Suite & Control Surface
Single Suite	Multi Suite	1	192.168.0.25	Live 4M/E Menu 1 A
Frame IP Address	192.168.0.20	2	192.168.0.26	Live 4M/E Pnl 1 A
Still Store		3	192.168.0.27	Live 4M/E AUX 1 A
Still Store Name	Bay 1 SS	4	192.168.0.35	Edit 2M/E Menu 2 A
Still Store IP Address	192.168.0.22	5	192.168.0.36	Edit 2M/E Pnl 2 A
Suite 1 Name	Suite 1	6	192.168.0.37	Edit 2M/E AUX 2 A
Suite 2 Name	Suite 2	7	192.168.0.45	Live 1M/E Menu 1 A
		8	192.168.0.46	Live 1M/E Pnl 1 A

7. Reset the Video Processor frame. The Kalypso system will boot to Multi-Suite mode. On the first bootup with this new configuration all system resources will be assigned to Suite 1.
8. Configure the following Engineering settings for use with suites, following the normal procedures described in the Kalypso Installation and Service Manual. Some of these settings now require specifying Suite and Control Surface selections:
 - Outputs (assign fixed, switched preview, and any logical Aux bus outputs for each suite, being sure to connect the newly configured program and preview outputs to monitors in the new second suite),
 - Ports & Devices (assign GPI outputs and Editor ports for each suite, if used),
 - System, Aux Panel (assign Remote Aux panels a suite, and select a control surface or have that Aux panel be independent.), and
 - Tally (assign tally relays and tally calculations for each suite, if used).

9. If a Kalypso system is run in Multi-Suite mode, restricted access to Eng Setups changes is essential (menu accessed via **Eng Setup, System, Security**). Without restrictions, an operator at any control surface can load an Eng Setup file that could remove the other suite's node information and/or switch to single suite mode. This could seriously impact operations in the other suite.
10. Save this Eng Setup configuration to disk, naming the file to identify it as the new default multi- suite engineering configuration for the facility.

Configure Defaults for Each Suite Preference

A Suite configuration applies to a suite, so you will configure each suite independently. The Suite Pref settings established here will be saved as defaults, so that each suite can be placed in a known state. Once in this state, modifications can be made for particular shows or projects.

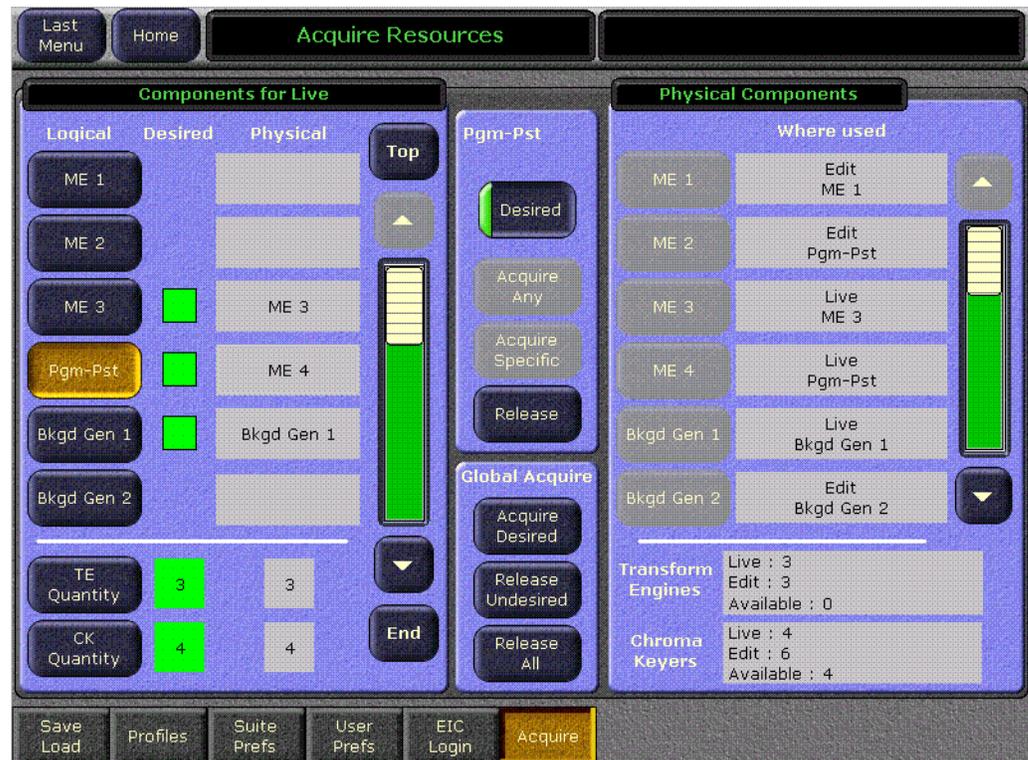
1. On a Menu panel of Suite 1, go to the Acquire menu (**Daily Setups, Acquire**).

You will next select the devices desired for this suite's default. Which devices are selected for this new default depends on your individual facility. For example, if there are 4-M/E and a 2-M/E Main panels in separate rooms, you may want each suite to start with two M/Es, one a logical PGM PST and the other a logical M/E 3. Similarly, you could divide the remaining resources so that there are logical equivalents in each suite. For example, both suites could have a logical Bkgd 1 matte. This approach essentially creates two switchers, and effects built in one suite will run in the other suite. Alternatively, if you have 4-M/E and a 1-M/E Main panels, you may wish to start by giving three M/Es to the larger switcher and one M/E to the smaller. The EIC needs to discuss common needs with the TDs who will be using the Kalypso system and arrive at the exact settings for these defaults.

2. Select one of the logical devices in the scrolling list on the left (Pgm-Pst, for example), and then touch **Desired** to indicate you wish to use that device in the suite.

- Continue specifying only the desired logical devices, then touch **Release Undesired** to free unwanted resources, and touch **Acquire Desired** to acquire only those resources (Figure 158). The other resources will be available for use by the other suite.

Figure 158. Acquire Resources Menu Example



- A message will appear if all the desired resources could not be acquired. If this occurs, scroll through the list on the left to identify the missing resources. Desired devices that are not acquired are colored red. To resolve the problem, you can contact the other suite and ask to have those resources released, or if a resource isn't really needed you can mark it as undesired.
- Make any other necessary adjustments to the remaining Suite Prefs for Suite 1. No changes may be required, since these settings are the same as were set previously in single suite mode. However, this may not be the case. For example, you may want to set source patching to unity with no logical names or nicknames, so that all sources are initially named the same.
- Save this Suite Pref to disk, being sure to name the file so you can identify it is for Suite 1. Note that the desired resource list is saved. The actual current acquisitions are not saved as part of a configuration file, but are non-volatile and are restored after reset.

Note Suite Prefs files should be saved as profiles for fast access, by saving them to the Frame:C:\User\profiles\suite or Zip Drive:\profiles\suite default directories. The names of the files appear in the scrolling list in the Profiles menu, so naming them for easy recognition is important.

7. On a Menu panel of Suite 2 (either work on the actual panel, or Login as the EIC to access that suite), go to the Acquire menu, set the desired resources, and touch **Acquire Desired** to acquire those resources. Then scroll through the list to ensure all the desired devices have been acquired. If there are any resource conflicts, you can dynamically share a resource between the suites by acquiring it when needed and releasing it when done.
8. Make any necessary adjustments to the Suite Prefs for Suite 2.
9. Save this Suite Pref to disk, naming the file so you can identify it is for the defaults for Suite 2.

Note Suite Prefs files should be saved as profiles for fast access, by saving them to the Frame:C:\User\profiles\suite or Zip Drive:\profiles\suite default directories. The names of the files appear in the scrolling list in the Profiles menu, so naming them for easy recognition is important.

Later, when you build the Suite Preference for a particular show, you can add or remove desired resources to meet your individual requirements and save that Suite Pref named with the show title and suite name.

Configure User Prefs for Use In A Control Surface

Up to two control surfaces can be defined for each suite. Each control surface operates with its own User Prefs. The same User Prefs file can be loaded onto any control surface, or different configurations can be defined and saved for each control surface. Which approach is used depends on your facility requirements and the individual operator's working style.

1. On a Menu panel of a control surface of Suite 1, go the various User Prefs menus (accessed via **Daily Setups, User Prefs**) and set them as desired. In particular, you may want to set different button mappings on the Main panel and Local Aux panel buses for that control surface.
2. Save this User Pref to disk, naming the file so you can identify it is was defined for that suite and control surface.

Note User Prefs files can be saved as profiles for rapid access, by saving them to the Frame:C:\User\profiles\user or Zip Drive:\profiles\user default directories. The names of the files appear in the scrolling list in the Profiles menu, so naming them for easy recognition is important.

3. If you wish to use different User Prefs for different control surfaces, either in the same suite or in different suites, use a Menu panel associated with each control surface to setup the User Prefs and save these file to disk, naming each so you can distinguish them from the others.

Login to Another Control Surface or Suite

With an EIC login, a Menu panel of a control surface in one suite (or a PC running the Menu application) can be used to access the other suite or the other control surface in the same suite, if necessary. This makes it possible to, for example, modify the suite or user preferences for a control surface lacking a menu application, like a 1 M/E Main panel.

EIC login also permits the manual reallocation of resources from any location. For example, suppose one suite acquired resources for a session, finished work, and was abandoned without releasing those resources. The EIC can login to that suite using a panel located in the other suite and release the needed resources. After logging back into the original suite, he can then acquire and use those released resources.

Logging off and back on restores the menu to its normally specified control surface.

Engineering Setup Recommendations

Restrict Eng Setup Changes

Eng Setup Changes should be restricted, especially if you are running in Multi Suite mode, because of the changes to Kalypso system behavior that result when Eng Setups are changed or loaded. It is recommended the EIC impose this restriction if it has not already been done. This is accomplished in the Security Account Setup menu accessed via **Eng Setup, System, Security**.

Do Not Change the Suite Operating Mode

If a Kalypso system is configured to use Resource Sharing, it should be set to Multi Suite mode and left in that state. There is no need to change modes, since even in Multi Suite mode the Kalypso system can operate with all resources assigned to a single suite, same as for earlier Kalypso software versions.

CAUTION While it is possible to switch between modes, hardware resets are required and Node configuration information will be lost. If a second suite has been configured, switching to Single Suite mode also takes all Suite 2 outputs to black, assigns all resources to Suite 1, and gives all control surfaces, including those in Suite 2, access to all the resources now residing in Suite 1. A button press in another room could then change the on-air output of the Kalypso system! Any additional control surfaces should be disconnected from the network if for some reason you must switch to Single Suite mode.

Eng Setups Only Load Into Same Suite Mode

Eng Setup files can only be loaded into a Kalypso system running in the same Suites mode as that Eng Setup file. This prevents the operational problems described above. Attempts to load an Eng Setup file set to a different mode will abort and an **Attempt to change suite mode!** message will be displayed. Note that Eng Setup files created with versions before 8.0 are considered Single Suite configurations, so they cannot be loaded into a Kalypso system running in Multi Suite mode. If you must load a different Suite Mode Eng Setup file, select the same mode before loading the file.

Enhanced Network Security

Even if your Kalypso system does not have multiple panels arranged in two suites, you may wish to operate your system in Multi Suite mode for enhanced network security.

In Single Suite mode, any PC on the Kalypso network running the Kalypso Menu application can connect to the Kalypso Video Processor frame and controls its operation remotely. Obviously this can compromise on-air operations.

In Multi Suite mode, only devices with IP addresses set in the Suite Definition menu are allowed to control its assigned part of the Kalypso system. By default all resources are assigned to Suite 1, so this suite should be specified for all Kalypso nodes.

Main Panel Adjustments

System control panels are set at the factory for optimum performance, and generally do not require adjustment. The following procedures are provided should changes be required.

4-M/E and 2-M/E Main Panels

Source Name Display Contrast Adjustment

Source name display LCD contrast can be adjusted on each eight source segment on the Menu panel and Local Aux panel.

1. If necessary, press and hold down the **Unshift**, **Shift**, **Near Side**, and **Far Side** buttons on M/E 1 for five seconds to bring up the Top Menu on the PGM PST source name display. The source buttons labeled **IP Config**, **Disply Adj**, **Calibrate**, and **EXIT** will illuminate.

Note Since contrast and viewing angle are interdependent, it is recommended that you stand or sit in front of the panel in a position that suits normal panel operation while adjusting LCD contrast.

2. Press **Disply Adj** to enter the source name display contrast adjustment mode. In this mode the **Key Split** button flashes and the right two source buttons of each segment go high tally. These source buttons will be labeled **Up**, **Down**, and have a number readout on the left (assuming the contrast is already adjusted for readability).
3. Pressing the **Up** source button increases the opacity for that segment, and increments the number readout one step. Pressing the **Down** button does the opposite. Holding down a button does not scroll the settings. The system beeps when a control reaches its upper or lower limit (the display will not be readable at that time).
4. After making your contrast adjustments on the panel, press the flashing **Key Split** button to return to the Top Menu.
5. Press **Exit** to exit the Top Menu. The Main panel automatically reboots and returns to normal operation.

Lever Arm and Joystick Calibration

The Main panel lever arms and joystick can be calibrated from the Main panel.

1. If necessary, press and hold down the **Unshift**, **Shift**, **Near Side**, and **Far Side** buttons on M/E 1 for five seconds to bring up the Top Menu on the PGM PST source name display. The source buttons labeled **IP Config**, **Disply Adj**, **Calibrate**, and **EXIT** will illuminate.
2. Press **Calibrate** to enter calibration mode. Lighted PGM PST Source buttons are labeled with all the lever arms and the joystick.
3. To calibrate a lever arm, press the labeled button of the desired lever. Calibration values display and a button labeled **Calibrate** flashes.

4. Press the flashing **Calibrate** button. Directions for the procedure are displayed. Move the lever to its lower limit, press a lighted button labeled **Press**, then move the lever to its upper limit, again pressing the button labeled **Press**. The values of each limit are displayed.
5. To calibrate the joystick, press the **Joystick** button. Calibration values are displayed and a button labeled **Calibrate** flashes.
6. Press the flashing **Calibrate** button. Directions for the procedure are displayed. Move the joystick up, down, left, right, clockwise, and counterclockwise. After all the direction limits have been reached, press the labeled **Press** button. Release the joystick to allow it to find its neutral position and press the labeled **Press** button.
7. Press **Exit** to exit the Top Menu. The Main panel automatically reboots and then returns to normal operation.

Speaker Volume Adjustment

The Kalypso system Main panel includes a small speaker that beeps when, for example, a knob hits a limit. The speaker is located inside the Main panel, on a module mounted to the underside of the lid. A large knob located next to the speaker is available for adjusting the volume.

1-M/E Main Panel

Source Name Display Contrast Adjustment

Source displays are adjusted for readability at the factory before shipment. These displays can be adjusted to match a facility's ambient lighting. Once set, the source name display should not need to be re-adjusted, but can be should a display's illumination drift over time.

1. Press and hold down the **Unshift**, **Shift**, **Near Side**, and **Far Side** Source Select Modifier buttons for about five seconds. The source name display will read **Top Menu** on the left, with lighted source buttons on the right labeled **IP Config**, **Dsply Adj**, **Calibrate**, and **Exit**.
2. Press the **Dsply Adj** button to place the panel in display adjust mode. In this mode you use three Menu soft knobs to adjust the backlight of both source name displays, and adjust the contrast of the individual left and right displays. Be sure your adjustments are made under the lighting conditions used during production.

3. Turn the labeled knob to adjust backlight and contrast. The range within which significant changes occur is limited, and the location of this range varies for different individual display hardware, so there are no recommended values. Knob response is slow, and the illumination level of the displays also changes slowly. Allow time for the settings to take effect.
4. When the displays have been adjusted, press the **Key Split** button to store the values entered and return to the Top menu.
5. Press **Exit** to exit the Top Menu. The Main panel automatically reboots (**PNL RST ING** is displayed), using the new settings if they were saved.

Lever Arm and Joystick Calibration

The Lever Arm and Joystick are calibrated at the factory before shipment. If lever arm controlled transitions do not complete reliably, the lever arm may need to be calibrated.

1. Press and hold down the **Unshift, Shift, Near Side, and Far Side** Source Select Modifier buttons for about five seconds. The source name display will read **Top Menu** on the left, with lighted source buttons on the right labeled **IP Config, Dsply Adj, Calibrate, and Exit**.
2. Press the **Calibrate** button to place the Main panel in calibrate mode. In this mode you set the limits for the Lever Arm and Joystick. The last four source buttons light and are labeled **ME LEVER, JOYSTICK, SAVE EXIT, and EXIT ONLY**.

Note The Joystick is not operational in Release 7.6 and should not be calibrated. Attempts to do so may freeze the 1-M/E panel, which will then require a reset.

3. Press **ME LEVER** and follow the instructions displayed, moving the lever arm to its lower limit, pressing the flashing source button, then moving the arm to its upper limit and pressing the flashing source button again.
4. Press **SAVE EXIT** to save the settings and return to the Top Menu.
5. Press **Exit** to exit the Top Menu. The Main panel automatically reboots (**PNL RST ING** is displayed), using the new settings if they were saved.

Menu Panel Display Calibration

System control panels are set at the factory for optimum performance, and generally do not require adjustment. The following procedures are provided should changes be required.

Enhanced Menu Panel

Touchscreen Calibration

The Enhanced Menu panel display is aligned using a software tool provided by the display manufacturer using standard Windows 2000 procedures.

To calibrate the Menu panel display, press **My Computer\Control Panel\Pointer Devices**.

Press the **Calibration** tab and then press the **Calibrate** button. Follow the instructions displayed on the screen, and when done touch **OK**.

Display Settings

The Windows 2000 **Display** settings have been set to factory defaults as follows:

- **Screen Area:** 800 x 600 pixels
- **Colors:** High Color (16 bit)
- **Display Type:** Default Monitor

Refresh Frequency Adjustment

To adjust the refresh frequency:

1. Open **My Computer\Control Panel\Display**.
2. Press the **Settings** tab and then press the **Advanced** button.
3. Press the **Monitor** tab and adjust the frequency rate. Refresh frequency should be set at 60 Hz or 75 Hz.

Original Menu Panel

Touchscreen Calibration

The original Menu panel display is aligned using a software tool provided by the display manufacturer using standard Windows NT procedures. To calibrate the Menu panel display, press **My Computer\Control Panel\Pointer Devices**.

Press the **Calibration** tab and then press the **Calibrate** button. Follow the instructions displayed on the screen, and when done touch **OK**.

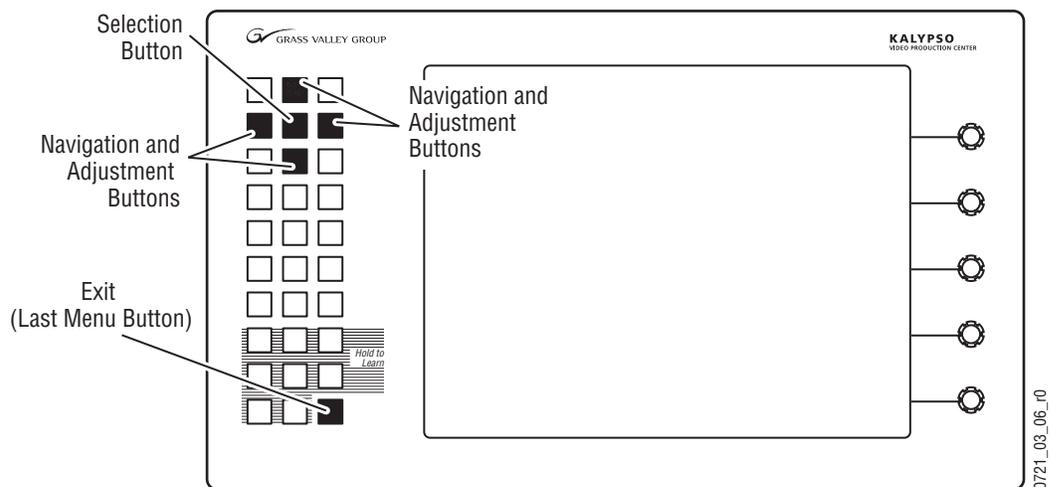
Panel Display Adjustments

The original Menu panel permits control of several display settings, including contrast, brightness, and phase. These controls are not needed on an Enhanced Menu panel.

Note Frequency and Phase are critical adjustments set at the factory that should not need to be changed.

When the adjustment program is active, menus of various parameters are displayed on the Menu panel screen. Six buttons light on the Menu panel. Five buttons are arranged in a cross pattern (+) at the top. The four outer buttons are used for navigation and parameter adjustment. The center button of this group is used to select menu items. A single exit function button (**Last Menu**) is lighted on the lower right ([Figure 159](#)).

Figure 159. Original Menu Panel Screen Adjustment Control Buttons



To Adjust the Menu Panel Display:

1. While in Windows, double click on the **Adjust Display** shortcut on the desktop. Six buttons illuminate on the Menu panel.
2. Press selection button to display the menu then press the navigation and selection button in turn to display and select the parameter(s) to adjust.
3. Adjust the settings up or down with the adjustment buttons.
4. When done making changes, exit the adjustment menu by selecting the **Exit** menu item, and then press the **Last Menu** exit function button on the Menu panel.
5. Restart the Menu panel to clear the illuminated buttons and restore normal operation.

Adjusting Frequency and Phase

Frequency and phase adjustments are critical for legibility. The factory settings should provide satisfactory performance. The correct setting can only be made by displaying a test screen and knowing exactly what to look for.

Phase Adjustment Procedure

Phase adjustment can cause columns of the display to blur while others remain sharp. To see this clearly, a full screen of small text must be displayed and the phase carefully adjusted so that none of the columns blur. This should be close to the setting that fills the screen horizontally, but there is some variation in this correlation.

Phase should be set midway between the two extreme values that tear the display.

Frequency Adjustment Procedure

To adjust the refresh frequency, press **Start\Settings\Control Panel\Display**.

Press the **Settings** tab and adjust the frequency rate. Refresh frequency should be set at 56Hz or 60 Hz.

Windows NT Accounts

The Kalypso system original Menu panel is pre-configured to automatically logon to NT as user “kalypso”, with password “kalypso”. Logging on with this account automatically starts the Kalypso Menu and OmniBus software. This default logon account should always be used for normal system operation and for software update procedures, since any configuration changes are saved to the current account.

Should there be a problem, it is possible to logon under a different account that does not automatically run Kalypso or OmniBus software. This should only be done for troubleshooting purposes. The other account (“administrator”) can be accessed by holding down the keyboard **Shift** key during automatic logon. The standard Windows logon prompt appears, allowing you to type user “administrator” and password “kalypso”.

Note If you use the administrator account, before resuming system operation or software loading you must log off, then log back on as user “kalypso”. Log off, hold down the **Shift** key during auto logon, and at the prompt logon as user “kalypso”, password “kalypso”.

Kalypso system Enhanced Menu panels run Windows 2000 and automatically logs on with all administrative privileges enabled.

Maintenance

Introduction

This section provides routine maintenance information for servicing the Kalypso Video Production Center, including the Video Processing frame, Control Surface components, the Video Processor Power Supply, and the Main panel Power Supply. For troubleshooting and diagnostics information refer to *Section 5-Troubleshooting and Diagnostics*.

Servicing Precautions

Before performing any type of maintenance or troubleshooting of the Kalypso Video Production Center, read the complete *Safety Summary* at the front of this manual. The Safety Summary describes all of the pertinent safety issues and recommended precautions for working with the Kalypso Video Production Center.

Tools Required

Many of the system installation tools listed in *Required Tools on page 61* may be required for maintenance procedures. Most assemblies described in this section use Torx #10, #15 or #20 screwdrivers.

Video Processor Frame Maintenance

CAUTION Do not operate the Video Processor frame with its doors open for an extended period of time. Failure to observe this precaution may result in improper air flow and cause components to overheat.

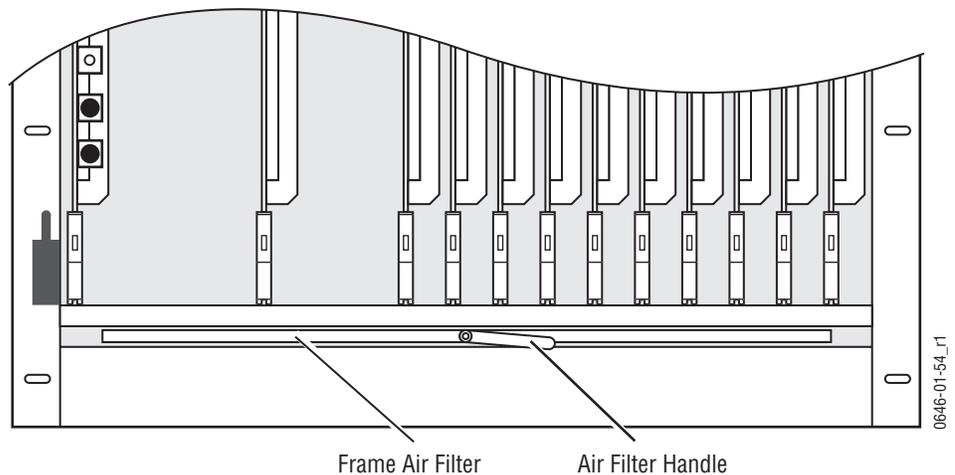
Video Processor Frame Air Filter

The Video Processor frame contains a removable air filter that reduces the accumulation of dust on the circuit boards. The air filter should be removed and cleaned periodically.

To clean the frame air filter:

1. Open the front door of the Video Processor frame and locate the air filter located at the bottom of the frame (Figure 160).

Figure 160. Video Processor Frame Air Filter



2. Remove the filter by pulling the white plastic handle at the front center of the filter. Pull the filter out slowly, making sure the metal netting on the top of the filter does not catch on the frame.
3. Vacuum the filter and/or wash it in a warm water soap (not detergent) solution.
4. Rinse the filter thoroughly with fresh water, and air dry completely.
5. Squeeze the four inside metal edges of the filter between your fingers in several locations prior to inserting the filter in the frame. This will make the filter easier to remove and replace.
6. When the filter is completely dry (if washed), reinstall it into the frame with the metal netting on top. Close the front door of the frame.

Removing and Replacing Frame Modules

Modules in the Kalypso Video Processor frame are not designed to be repaired in the field unless a repair is authorized by Customer Service, usually in the form of a *Field Modification Note*. Failed modules should be replaced.

A list of available Field Replaceable Units (FRUs) is provided in *Appendix B-Field Replaceable Units*. This list also provides important replacement notes and installation information for each type of assembly.

If you need to remove or replace a module in the Video Processor frame, refer to the module location illustrations in [Figure 55 on page 76](#) (frame front) and [Figure 56 on page 77](#) (frame rear), [Module Insertion on page 86](#) and [Module Removal on page 87](#) in *Section 2-Installation*. All frame modules can be removed and replaced without powering down the frame.

CAUTION All modules are subject to static damage when removed from the frame. Always use recommended anti-static precautions when handling modules.

Some modules may require that components be moved to the new replacement module. Refer to any specific module installation procedures in *Section 2-Installation* or the notes in the FRU list in *Appendix B-Field Replaceable Units* for complete details.

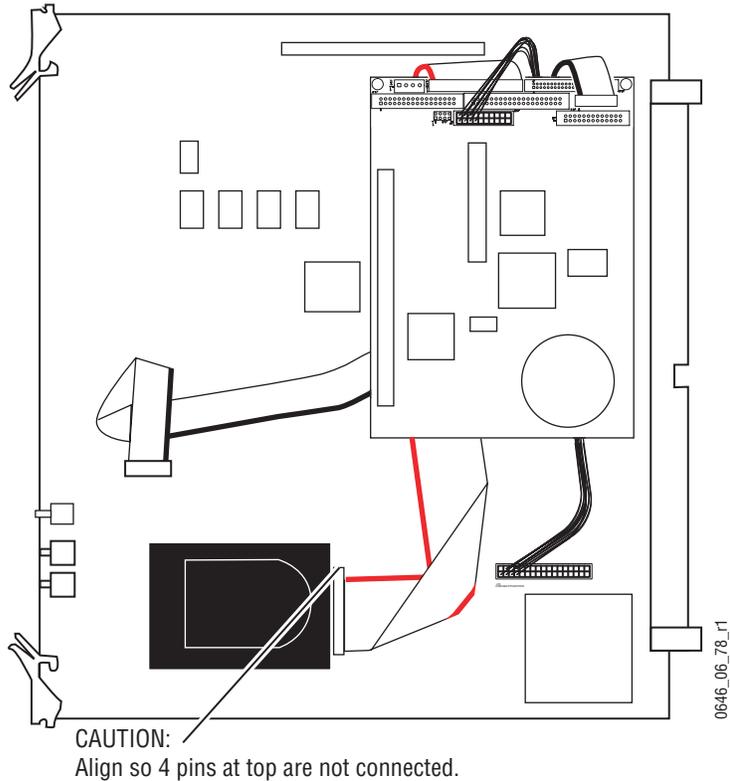
Field Upgrading of Frame Modules

Kalypso frame modules are designed with field programmable circuitry that allows firmware upgrades to be done in the field over the Facilities LAN during a software download. Any specific upgrade instructions will be included in the Kalypso *Release Notes* that accompany each software update.

Frame Control Processor Hard Drive Replacement

Note E-MEM, R-MEM, and Configuration files reside on the Control Processor Hard Drive. If this drive is replaced you will need to load these files back onto the Kalypso system to restore the previous operational state.

Figure 161. Video Processor Frame Control Processor Module Hard Drive



1. Power down the Kalypso Video Processor frame.
2. Remove the Control Processor module from slot A1.
3. Note the orientation of the ribbon cable before you disconnect it. The colored edge connects to the top side of the drive with the four drive select pins exposed (Figure 161).
4. Turn the board over and remove the four Philips screws holding the hard drive to the board, remove the drive, and install the new drive using the four screws removed.

CAUTION The connector on the ribbon cable is not keyed. Connecting the hard drive ribbon cable incorrectly and applying power can damage the Processor daughter board, and may also damage the Hard Drive. Leave the four pins exposed at the top of the connector.

5. Reconnect the ribbon cable to the hard drive. You must orient the ribbon cable correctly to prevent damage to the hardware (Figure 161).

Video Processor Frame Control Processor Replacement

An SBC1000 processor is recommended for 60 hz Kalypso systems running 7.5 and higher software.

Incompatible Hard Drive Ribbon Cable Identification

Kalypso systems manufactured before April of 2000 shipped with hard drive ribbon cables that are incompatible with the SBC1000 processor upgrade. Some early replacement processors may also have this ribbon cable.

- An incompatible hard drive ribbon cable does not have a part number and has a black pin 1 stripe. The connector at the processor end is too large to fit into the SBC1000 socket. If this cable is present you must replace it during the update.
- A compatible ribbon cable is labeled **174-8051-00** and has a red pin 1 stripe, and the connectors at both ends are smaller. This cable can be used with the SBC1000 processor.

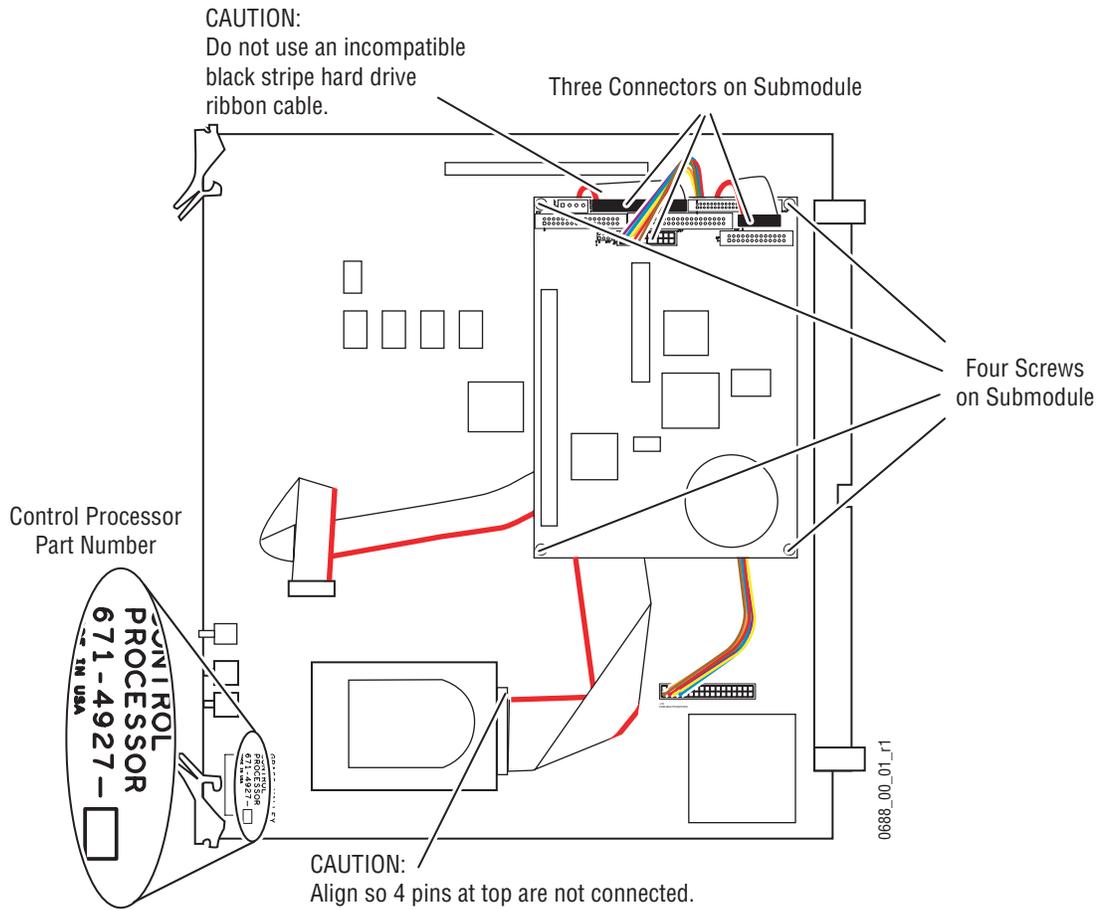
Replacement Instructions

CAUTION The SBC1000 is fully compatible with 7.2.1 and higher software versions. You must install compatible software BEFORE you install the SBC1000. Refer to the *Kalypso Release Notes* for software installation procedures.

CAUTION Removing the Video Processor Frame Control Module causes loss of Kalypso system control, and reinserting the module causes a reset that takes the Kalypso system outputs to black.

1. Power down the Kalypso Video Processor frame.
2. Remove the Control Processor module from slot A1.

Figure 162. Video Processor Frame Control Processor Module



3. Disconnect the three cables identified in Figure 161 from the processor submodule.
4. Use a #10 Torx screwdriver to remove the four screws identified in Figure 161.
5. Remove the spacer (highlighted in Figure 163) from each corner.

CAUTION Once the screw is removed these spacers are no longer physically attached. They can be lost or potentially cause damage.

6. Remove the submodule from the Control Processor module. Be careful not to disturb the placement of the standoffs or the cables.

WARNING Kalypso systems manufactured before April of 2000 shipped with hard drive ribbon cables that are incompatible with the SBC1000 processor upgrade. Some early replacement processors may also have this ribbon cable. Forced use of an incompatible cable can damage the SBC1000 connector and, if misaligned, destroy the SBC1000 processor, hard drive, and ribbon cable.

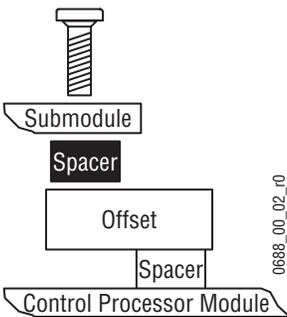


Figure 163. Spacer

7. Examine the hard drive ribbon cable for compatibility.
 - If it has a red pin 1 stripe and has a 174-8051-00 part number, the ribbon cable is compatible and is safe to use with the SBC1000.
 - If it has a black pin 1 stripe, it is incompatible and must be replaced with a 174-8051-00 ribbon cable. Use the following procedure:
 - a. Note the orientation of the ribbon cable before you disconnect it. The colored edge connects to the top side of the drive with the four drive select pins exposed ([Figure 161 on page 228](#)).
 - b. The new ribbon cable must be folded correctly to lay flat under the processor and be oriented for proper attachment to the hard drive and processor. Refer to the old ribbon cable for folding.

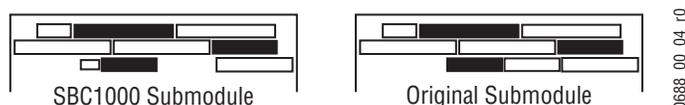
CAUTION The connector on the ribbon cable is not keyed. Connecting the hard drive ribbon cable incorrectly and applying power can damage the Processor daughter board, and may also damage the Hard Drive. Leave the four pins exposed at the top of the connector.

- c. Connect the replacement ribbon cable to the hard drive. You must align the ribbon cable correctly in the socket to prevent damage to the hardware ([Figure 161 on page 228](#)).

CAUTION Careful alignment between the module and submodule connectors will prevent bent pins. Check the alignment before pressing the submodule on to the Control Processor.

8. Align the SBC1000 submodule and press it lightly on to the Control Processor module. Do not seat the submodule yet.
9. Place a spacer under the submodule at each corner, using a screw to loosely secure the spacer.
10. Seat the SBC1000 submodule.
11. Tighten the four screws.
12. Connect the three cables, see [Figure 164](#).

Figure 164. Cable Connector Location for SBC1000 and Original Submodules

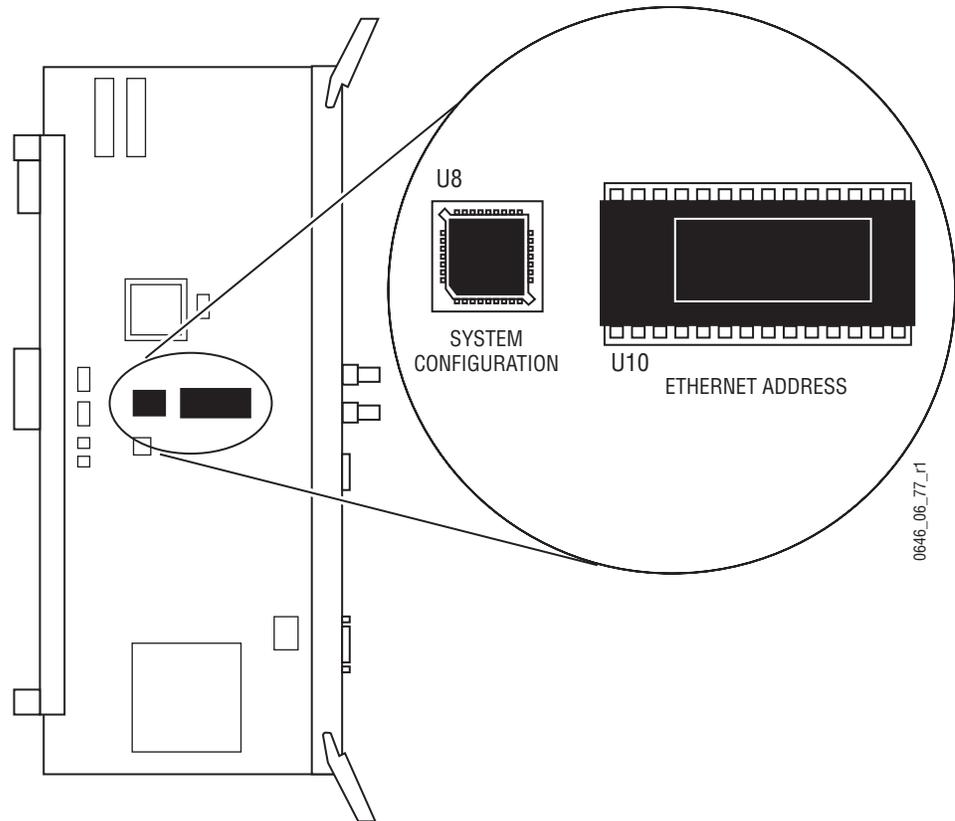


13. Return the Control Processor module to its original location in the frame. You may plug the module back into the frame while it is powered up.

Reference In Module PROM Replacement

The Kalypso Reference In module has two PROMs that contain System Configuration (software enabled options) and Network address data. If you need to replace the Reference In module, these PROMs will need to be moved to the replacement module to retain Kalypso system network communications and option operation.

Figure 165. Reference In Module PROMs



1. Power down the Kalypso Video Processor frame.
2. Remove the old Reference In module from slot B17 at the back of the Video Processor frame.
3. Remove the U8 System Configuration PROM and the U10 Ethernet PROM from the module (Figure 165). A PROM extraction tool should be used to prevent damage to the chip or socket pins.
4. Remove the corresponding PROMs from the replacement module and store them in a safe place.
5. Carefully insert the PROMs from the old Reference In module into the corresponding sockets on the replacement Reference In module.

6. Insert the new Reference In Module back into the Video Processor frame.
7. Power up the Video Processor frame.

Note If the problem with the old Reference In module was caused by bad PROMs, use the PROMs from the replacement module. However, any non-default IP addresses will need to be reset and any software enabled options will need to re-authorized. Contact Grass Valley Customer Service for assistance.

Video Processor Power Supply Maintenance

For proper operation, the Kalypso Video Processor frame must have two power supplies installed and operating at all times. Frame power supply modules are not designed to be serviced in the field. If a power supply module fails, replace the entire module. The replacement power supply module can be installed while the system is powered up.

To install a replacement frame power supply:

1. Loosen the left and right thumb screws holding the Module Locking Bracket in place ([Figure 61](#)) and slide the bracket up to allow removal of the defective power supply.
2. Pull out the defective supply and carefully slide the replacement supply into the slot.

CAUTION Do not force the power supply module into position. Guide it into the rear connector then push firmly to seat it properly.

3. Slide the Module Locking Bracket down into position and tighten the left and right thumb screws to secure the bracket.

Main Panel Maintenance

The Main panel in the Kalypso Video Production Center requires no routine maintenance. Information on power distribution and available diagnostics for the Main panel and other control surface components are included in [Section 5-Troubleshooting and Diagnostics](#).

Cleaning Control Panel Surfaces

If any of the control panel surfaces require cleaning, use a damp (not wet) cloth. Do not use cleaners or spray anything on any panel surfaces.

Replacing Main Panel Modules

The electronic assemblies and circuit boards for the Main panels are installed inside the panel tub and panel lid (4-M/E Main panel, [Figure 212](#) and 2-M/E panel, [Figure 213](#)). Refer to [Appendix B-Field Replaceable Units](#) for a list of replacement assemblies available for the Main panel.

If the assembly you are replacing is a Main panel option, such as the Source Display, refer to [Section 2-Installation](#) for a detailed procedure.

To remove and replace assemblies in the Main panels:

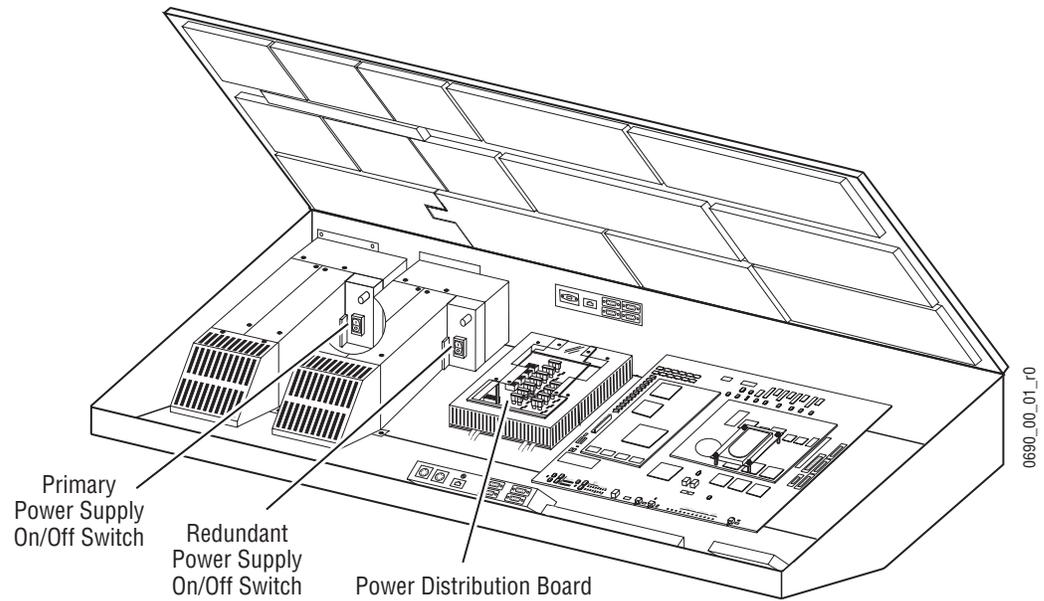
1. Turn off the AC power to the primary and redundant (if present) power supplies on the inside left of the Main panel tub.
2. Locate the assembly to be replaced and remove any control knobs and/or lever arm bars from the top of the panel that could interfere with removal of the assembly.
3. On the inside of the panel, disconnect any ribbon or power cables that are attached to the assembly to be removed. Retain these cables.
4. Using the proper tool, carefully remove any hardware holding the assembly in place and remove the assembly from the panel. Retain the hardware.
5. Install the replacement assembly by reversing the removal steps above.
6. Make sure you have not left any spare hardware or tools inside the panel and the replacement assembly is cabled correctly.
7. Turn power back on to the panel and test the new assembly for proper operation.

Main Panel Fuse Replacement

Note It is not necessary to power down the system to replace a fuse.

1. Inspect the fuses located on the Power Distribution board inside the Main panel (Figure 166). A red LED indicates that a fuse needs to be replaced. See Figure 214 on page 304 and Table 40 on page 305 for detailed LED status information.

Figure 166. Power Distribution Board and Power Supply Switches



Main Panel Disk-On-Chip and Hard Drive Maintenance

Drive Types

Different model Kalypso systems have different hardware configurations, and so require different maintenance procedures.

- The latest model Kalypso systems are equipped with a Disk-On-Chip solid state hard drive equivalent for use with the Real Time (RT) processor that drives the Main panel. The RT processor is mounted inside the Main panel. The Enhanced Menu panel used with these systems also has its own Windows OS processor and an IDE hard drive that is mounted inside the Menu panel. On these systems, only the RT processor Disk-On-Chip drive is user serviceable (see *Main Panel RT Processor Disk-On-Chip Replacement on page 237*).
- Earlier model Kalypso systems equipped with the original Menu panel have a Menu panel Windows NT processor with an IDE hard drive mounted on the processor board located inside the Main panel (not in the Menu panel). The separate Main panel RT processor on these systems may use either a Disk-On-Chip drive or an IDE hard drive mounted on that processor board. On these systems The Main panel RT processor drive and the Menu panel NT drive are user serviceable (see *Main Panel RT Hard Drive Replacement and Original Menu Panel Hard Drive Replacement on page 239*).
- Some very early model Kalypso systems were equipped with an RT processor IDE hard drive and a Menu panel IDE hard drive mounted separately on brackets inside the Main panel. Contact Grass Valley Customer Service if you have a system of this type that requires drive servicing.

Main Panel RT Processor Disk-On-Chip Replacement

Later model Kalypso systems are equipped with a Disk-On-Chip solid state hard drive equivalent for use with the Real Time (RT) processor. Should this unit need replacement, use the following procedure. Disk-On-Chip replacement units provided from Grass Valley Customer Service will already have the foundation layer software and the Kalypso system operating software installed.

1. Ethernet address information is stored on the RT Processor drive. Confirm the IP addresses for all the components connected to the Main panel and record them for use later.
 - a. Simultaneously press the **Un-Shift**, **Shift**, **Near Side**, and **Far Side** buttons on M/E 1 and hold them down for five seconds.
 - b. Select the IP Address Menu.
 - c. Scroll through all the addresses (Main Panel, Aux Panel, Menu Panel, and Frame) and write them all down.

- d. Exit without saving.
2. On the Menu panel, exit the Kalypso program. Shutdown the OS by selecting the Start -> Shut Down menu and selecting Shut down the computer. After the OS has shutdown, open the lid of the Main panel and power it off.
3. Carefully remove the 2111 RT Processor assembly from the 671-4942-xx board. It will take a bit of force to get the 2111 off, but be sure to not bend any pins in the process.
4. Remove the Disk-On-Chip board from the 2111 RT Processor assembly and unplug the cable from the Disk-On-Chip.
5. Locate the 32-pin socket on the 2111 Processor labeled U102. Note the markings for orientation on the board. Insert the replacement Disk-On-Chip in the socket.
6. Re-attach the 2111 Processor to the 671-4942-xx board. Again, it will take some force to attach the 2111 Processor, but be careful to not bend any pins.
7. Power on the Main panel. After the processor boots, the Panel will indicate **No Communications With Frame**. This is due to the IP addresses being set to factory defaults. The addresses will be reset in [Step 9](#).
8. It will be necessary to re-calibrate the Main panel displays, lever arms and joystick since the factory defaults may not be correct for this Panel. See [Source Name Display Contrast Adjustment on page 219](#) and [Lever Arm and Joystick Calibration on page 219](#) for specific instructions.
9. Follow the procedure in [Step 1](#) above to view the IP addresses. Reset the IP addresses to the desired settings using the IP addresses recorded. After resetting all the addresses, Exit and save the new addresses.
10. Reset the RT Processor by pressing the Reset button on the 671-4942-xx board.
11. After the RT Processor boots, the Panel will indicate it is able to communicate with the Kalypso Frame.
12. The Panel is now able to function as a Kalypso Control Panel. If another version of Kalypso software needs to be downloaded, this can now be done.

Main Panel RT Hard Drive Replacement

Should a Real Time (RT) Processor IDE drive fail, the entire Real Time Processor IF assembly can be replaced. This upgrades the system to the latest Disk-On-Chip technology. See [Real Time Processor Interface Assembly Replacement on page 240](#) for this procedure.

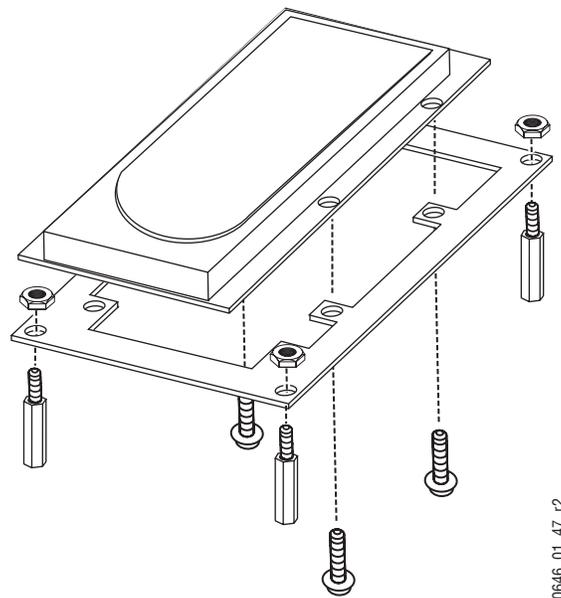
Alternatively, an IDE drive it can be replaced with just a Disk-On-Chip board.

1. Follow the *Main Panel RT Processor Disk-On-Chip Replacement* procedure on page 237, with the following changes:
 - Remove the IDE hard drive (not a Disk-On-Chip) from the 2111 RT Processor assembly. Unplug the cable from the IDE drive. Remove the metal plate the IDE drive is mounted on.
 - Find the DIP switch labeled SW2 on the 2111 Processor. Switch bit 8 controls the drive type (Disk-On-Chip is enabled when OFF). Move bit 8 from ON to OFF. The switch should now be set to: 0111 1010.

Original Menu Panel Hard Drive Replacement

To replace an original Menu panel hard drive mounted in the Main panel, follow the steps below and refer to [Figure 168](#). The hard drive is mounted on a metal bracket attached to four standoffs on the processor boards.

Figure 168. Replacing Board Mounted Hard Drives



1. Open the Main panel. On the Primary and (if present) Redundant Power Supplies, move the power switch to the Off position.
2. Carefully remove the ribbon cable connected to the front of the drive, noting pin 1 orientation stripe.
3. Use a 3/16 inch (4.8 mm) nutdriver to remove the four nuts and washers holding the hard drive metal bracket to the board standoffs. Retain the nuts and washers.

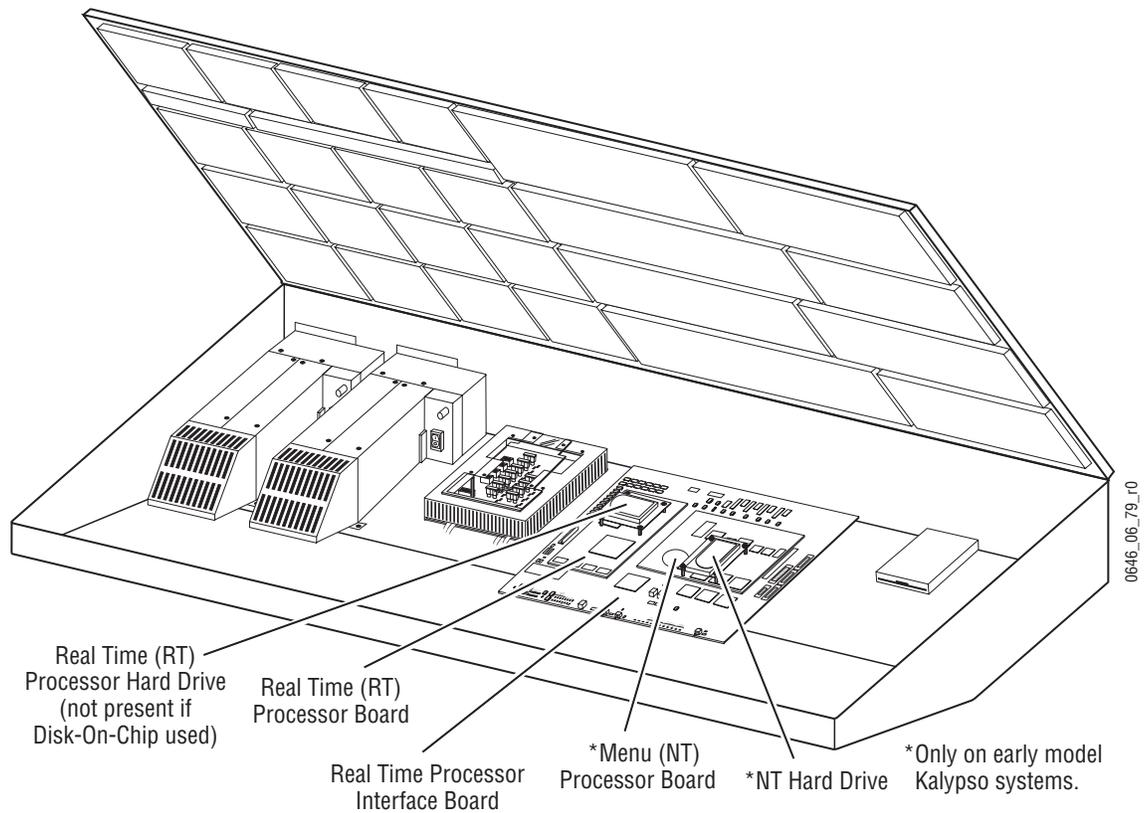
4. Remove the defective hard drive from the metal bracket by removing the four #10 Torx screws holding it to the bracket.
5. Install the replacement hard drive onto the metal bracket by lining up the holes in the circuit board side of the hard drive with the bracket holes. The label side of the hard drive should face away from the bracket. Use the screws removed earlier to secure it to the bracket.
6. Re-install the metal bracket to the standoffs on with the nuts and washers removed earlier.
7. Re-install the ribbon cable removed earlier, with the stripe denoting pin 1 of the cable lined up with pin 1 of the connector.

CAUTION The first two rows of pins on the top of the hard drive connector are not used. Connect the cable with its red strip up and the first two rows of connector pins exposed.

Real Time Processor Interface Assembly Replacement

The Real Time Processor Interface Assembly includes the Real Time processor board (with Disk-On-Chip or IDE hard drive) and on early model Kalypso systems also includes the Menu panel processor and IDE hard drive (Figure 169). On late model Kalypso systems the Menu Processor board and drive is located inside the separate Enhanced Menu panel.

Figure 169. Real Time Processor Interface Assembly



1. Ethernet address information is stored on the RT Processor and Menu panel drives. Confirm the IP addresses for all the components connected to the Main panel and record them for use later.
 - a. Simultaneously press the **Un-Shift**, **Shift**, **Near Side**, and **Far Side** buttons on M/E 1 and hold them down for five seconds.
 - b. Select the IP Address Menu.
 - c. Scroll through all the addresses (Main Panel, Aux Panel, Menu Panel, and Frame) and write them all down.
 - d. Exit without saving.
2. On the Menu panel, exit the Kalypso program, shutdown the OS, then open the lid of the Main panel and power it off.
3. From the outside back of the Main panel, disconnect the Menu panel, Ethernet, and any other cables attached to the rear of the Real Time Processor Interface board. Menu and Local Aux DIN power cables and any Emergency Bypass option cabling can remain in place.

4. From inside of the Main panel tub, disconnect the ribbon and other cables attached to the Real Time Processor Interface board. These cables include Power Supply and Power Supply status cables on the left and a speaker cable and five ribbon cables at the top rear. Note the locations of these cables so they can be replaced correctly.
5. From inside the Main panel tub, use a #15 Torx screwdriver to remove the three screws attaching the Real Time Processor Interface board to the bottom of the tub, and remove the two screws attaching the connector plate to the rear of the tub.
6. Remove the old board and replace with the new Real Time Processor Interface board using the screws removed.
7. Reconnect all the cables inside the Main panel tub.
8. Reconnect the cables at the outside back of the Main panel, with the following important Ethernet cable exception, if appropriate.

CAUTION The Real Time Processor Interface Assembly ships with default IP addresses. If you have another Kalypso system on your network that use default IP addresses, do not reconnect the Ethernet cables on the system being serviced until its default IP addresses have been changed.

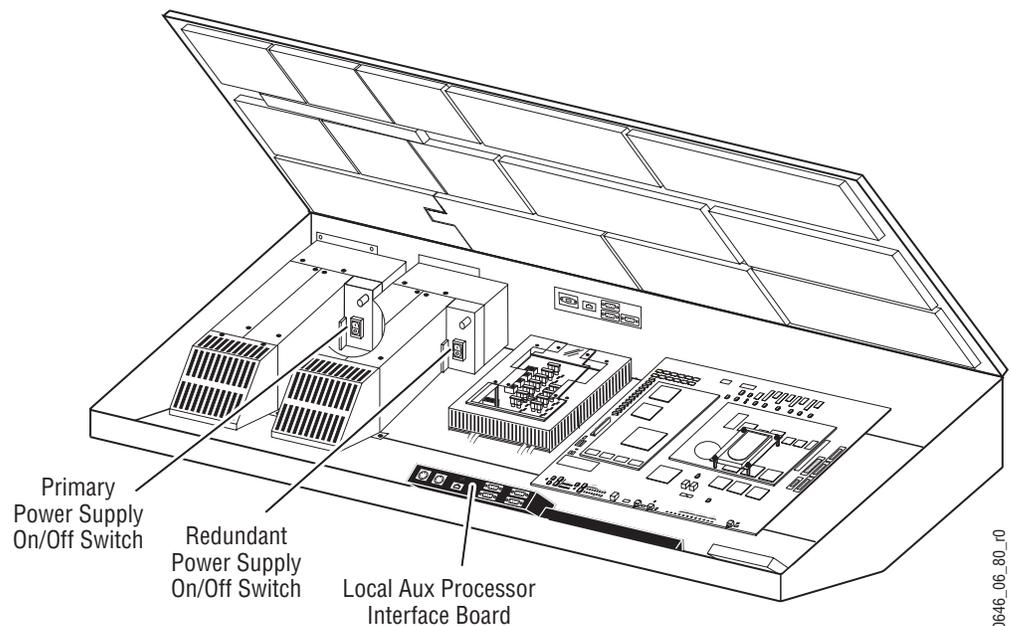
9. Power up the Main panel.
10. It will be necessary to re-calibrate the Main panel displays, lever arms and joystick since the factory defaults may not be correct for this panel. See [Source Name Display Contrast Adjustment on page 219](#) and [Lever Arm and Joystick Calibration on page 219](#) for specific instructions.
11. Follow the procedure in [Step 1](#) above to view the IP addresses. Set the Main panel IP addresses to the desired settings using the IP addresses recorded. If default addresses were used they should not need to be changed. When the addresses are correct, Exit and save the new addresses.
12. If you are servicing an early model Kalypso system equipped with an original Menu panel, set the IP address of the Menu panel, using standard Windows OS methods (see [Changing Menu Panel IP Address on page 158](#)). You will also need to set the IP addresses the Menu panel uses to communicate with other devices, by going to Home\Eng Setup\System\Config and entering IP addresses for the Frame, RT Panel, and (if the Still Store option is present) SStore IP address fields.
13. Reset the Main panel and Menu panel.
14. If not yet connected, attach the Ethernet cables to the rear of the Main panel.
15. After the RT Processor boots, the Panel will indicate it is able to communicate with the Kalypso Frame.

16. The Panel is now able to function as a Kalypso Control Panel. If another version of Kalypso software needs to be downloaded, this can now be done.

2-M/E Main Panel Local Aux Processor Interface Board Replacement

The Local Aux processor interface board is located inside the Main panel in 2-M/E systems (see [Figure 170](#)). The replacement Local Aux processor interface board ships with the default IP address setting and the latest version of Kalypso software installed.

Figure 170. Local Aux Processor Interface Board Location

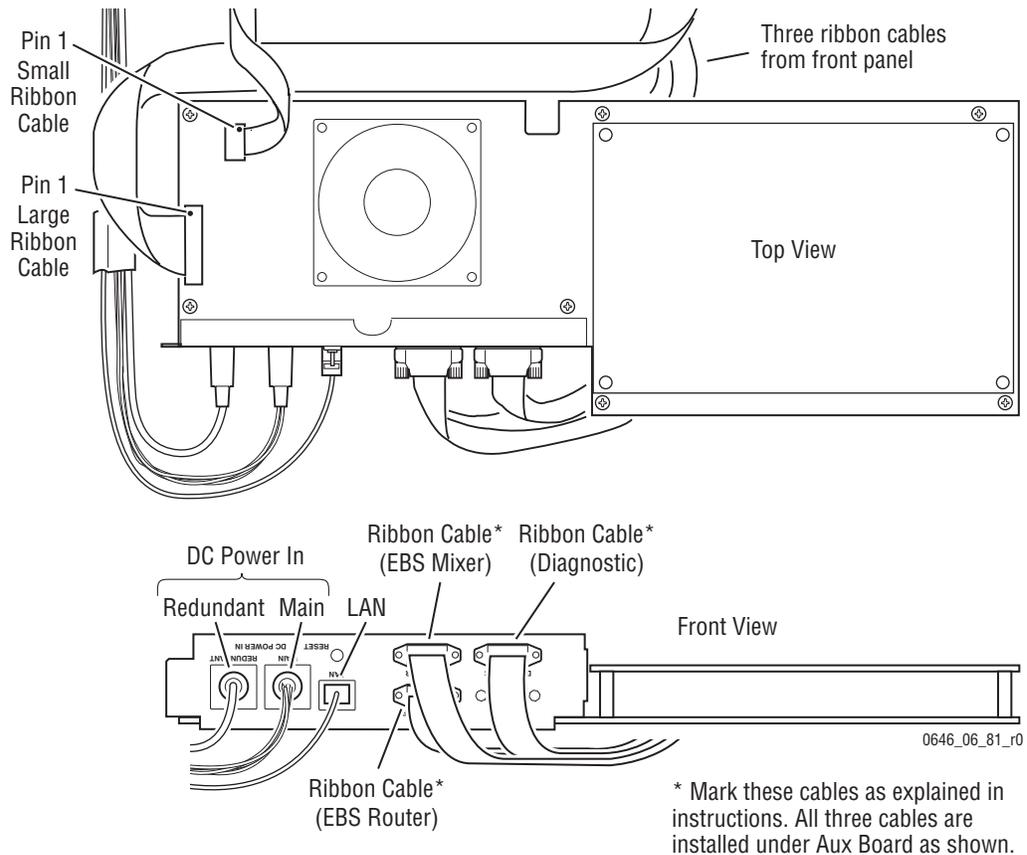


To replace the Local Aux processor interface board:

1. Confirm the IP addresses for the Local Aux subpanel and record it for use later.
 - a. Simultaneously press the **Un-Shift**, **Shift**, **Near Side**, and **Far Side** buttons on the Local Aux Subpanel Bus #1 and hold them down for five seconds.
 - b. Select the IP Address Menu.
 - c. Scroll through all the addresses (Main Panel, Aux Panel, Menu Panel, and Frame) and write down the IP address for the Aux Panel.
 - d. Exit without saving.
2. On the Menu panel, exit the Kalypso program. Shutdown the OS by selecting the Start -> Shut Down menu and selecting Shut down the computer.

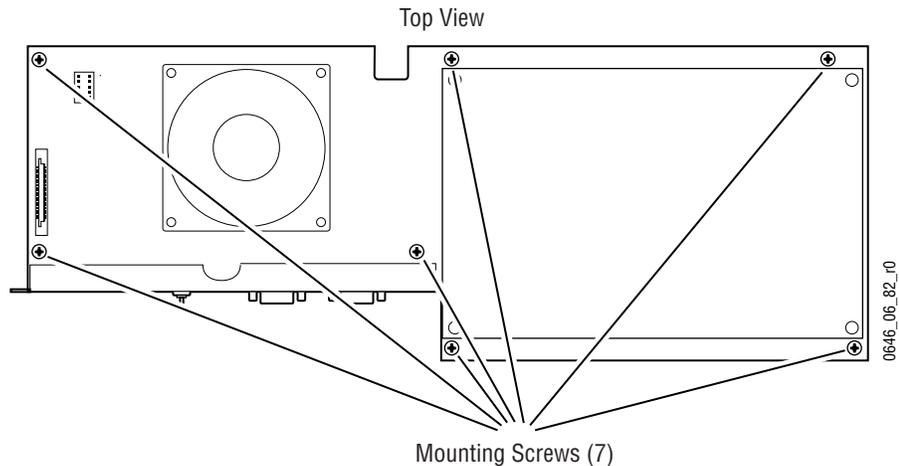
3. Open the Main panel. Turn off AC power to the Main panel for both the primary and redundant (if present) power supplies (see Figure 170).
4. At the rear of the Main panel, disconnect the AC line cord from both primary and redundant (if present) power supplies.
5. Open the Main panel and locate the Local Aux processor interface board inside the Main panel tub (see Figure 170).
6. Locate the three ribbon cables connected to the 9-pin D connectors labelled EBS Mixer, EBS Router, and Diagnostic (see Figure 171). Mark these cables to ensure that once these cables are removed that they can be reconnected to an identically labelled 9-pin D connector. These three ribbon cables are physically identical. Path integrity (from the EBS Mixer connector on the Local Aux processor interface board to the EBS Mixer connector on the Main panel tub to the EBS Mixer connector on the external device, etc.) must be maintained throughout the entire system for the Emergency Bypass System to work.
7. Use a flathead screwdriver to loosen the screws securing the 9-pin D connectors to the board.

Figure 171. Local Aux Processor Interface Board Cabling



8. Disconnect all cables from the Local Aux processor interface board (see [Figure 171](#)).
9. From inside the Main panel tub, use a #15 Torx screwdriver to remove the seven screws attaching the Local Aux processor interface board to the bottom of the tub (see [Figure 172](#)).

Figure 172. Local Aux Processor Interface Board Screws



10. Carefully, lift the Local Aux processor interface board out of the Main panel tub. Try to minimize the movement of the disconnected cables.
11. Place the replacement Local Aux processor interface board into position inside the tub, with the three 9-pin D connector ribbon cables under the board, and reattach the board to the tub with the seven screws removed earlier.
12. Reconnect all cabling.
13. At the rear of the Main panel reconnect the AC line cord for each power supply present.
14. Turn on the Main panel Primary and, if present, Redundant power supply.
15. Follow the procedure in [Step 1](#) above to view the IP addresses. If the default IP address is used it does not need to be changed. If the IP address is not the default IP address then set the Aux Panel IP address to the desired setting. When the address is correct, Exit and save the new address.

16. Verify the version of software loaded into the Local Aux processor interface board using the Software Versions menu (see [Figure 123 on page 147](#)). If the version of Kalypso software loaded into the Local Aux processor interface board is different from the version of Kalypso software being used by the other Kalypso system components, the Local Aux processor interface board needs to have that version of software loaded. Use the Kalypso Software Update Tool to install the software. Refer to the *Release Notes* which ship with software updates for complete software installation instructions

Main Panel Power Supply Replacement

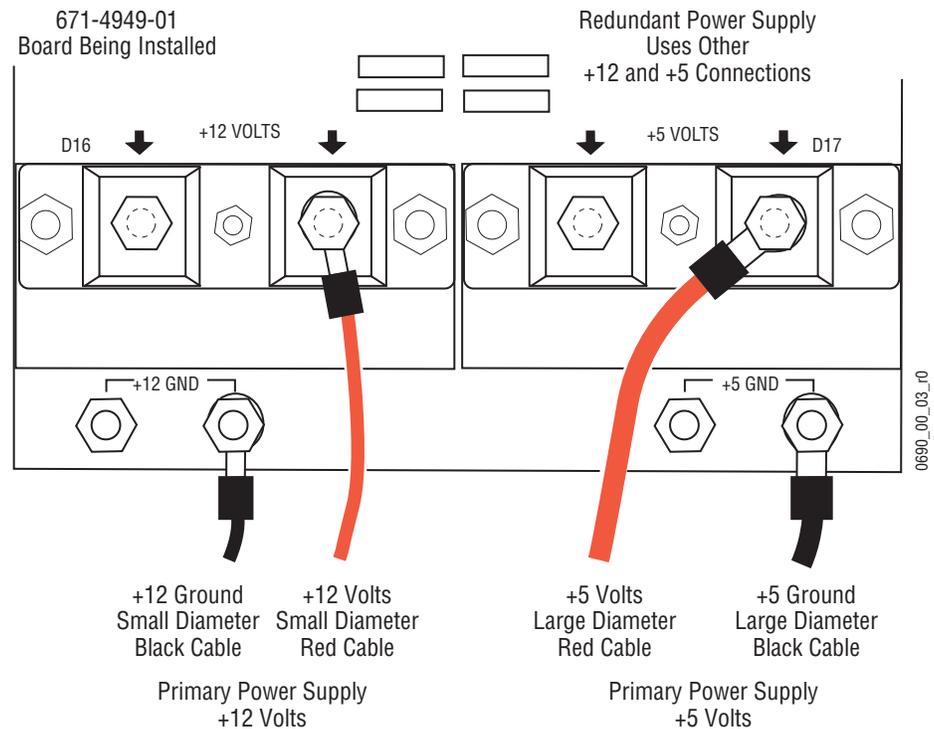
The Main panel has a primary power supply (left supply) and an identical optional redundant power supply (right supply), both located in the left side of the Main panel tub (see [Figure 212](#) and [Figure 213](#)).

To replace either power supply in the Main panel:

1. Open the Main panel. Turn off AC power to the Main panel for both the primary and redundant (if present) power supplies (see [Figure 166 on page 235](#)).
2. At the rear of the Main panel, disconnect the AC line cord from both primary and redundant (if present) power supplies.
3. Disconnect the rear ground connection from the power supply needing replacement.
4. Open the Main panel and locate the Power Distribution board inside the Main panel tub ([Figure 212](#) for 4-M/E and [Figure 213](#) for 2-M/E).
5. Use a #15 Torx screwdriver to remove four screws that hold a clear cover onto a metal grill that covers the Power Distribution board (see [Figure 167 on page 236](#)). Retain the cover and screws.
6. Remove the cable connections listed below from the right side of the Power Distribution board. Do not remove the M/E cables on the left.
 - a. Real Time Processor (J10)
 - b. Menu Display (J9)
 - c. Real Time Processor Power (J8)
 - d. Drive (J23)
7. Use a #15 Torx screwdriver to remove the metal grill covering the Power Distribution board by removing the four outside screws holding it in place ([Figure 167 on page 236](#)). Maneuver the grill around the M/E cables still connected to the Power Distribution board through the back opening of the metal grill. Retain the metal grill and screws.

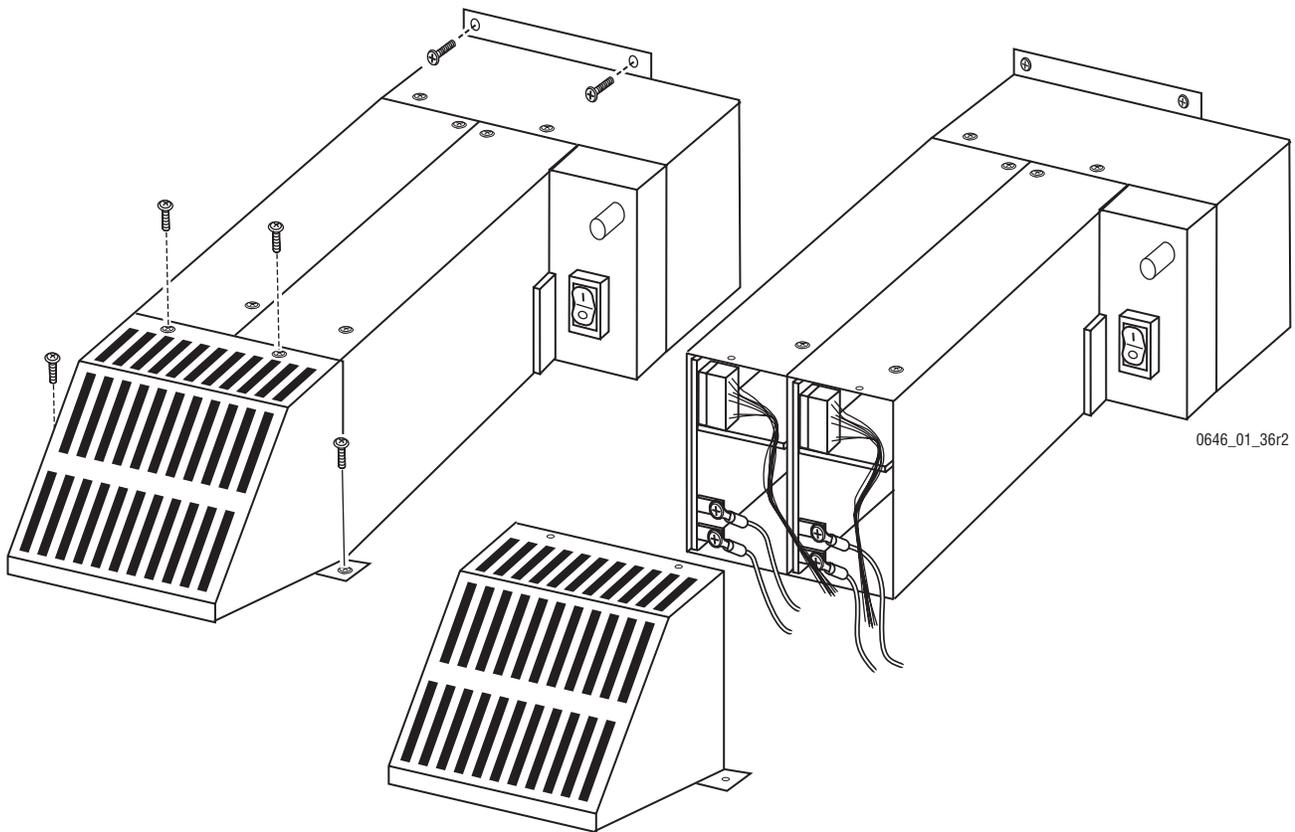
8. On the front of the Power Distribution board, disconnect the +12V and +5V cables from the positive voltage diode connections (Figure 173). Use a 7/16 inch (11 mm) nut driver to remove the bolts and washers. Retain the hardware for reuse.

Figure 173. +5V and +12V Power Distribution Board Connections



9. Disconnect the +12V and +5V cables from the Power Distribution board ground connections (Figure 173). Use a 7/16 inch (11 mm) nut driver to remove only the top nut and washer from each connection. Retain the hardware for reuse.
10. Unclamp any cable clamps holding the power supply cables to the bottom of the tub.
11. Remove the gray metal grill cover from the front of the defective power supply. The grill cover and the screws will be needed on the replacement supply (Figure 174).
 - a. Remove the two #15 Torx screws on top of the grill.
 - b. Remove the two #20 Torx screws holding it to the bottom of the panel tub.

Figure 174. Removing Main Panel Power Supplies



12. Remove the two power supply harness connectors labeled P5a and P12a (Primary Supply) or P5b and P12b (Redundant) from inside the front of the power supply +5V and +12V modules (Figure 174).
13. Release the entire power supply assembly from the tub by removing and retaining the two Torx screws holding the power supply to the rear of the panel tub.
14. Carefully lift the entire assembly out of the tub.
15. Place the replacement power supply assembly into position inside the tub and re-attach it to rear of the tub with the two Torx screws removed earlier.
16. Re-connect the power supply harness to the connectors inside the front of the power supply +5V and +12V modules. Connect P5a or P5b to the +5V module and P12a or P12b to the +12V module.
17. Reattach the red +12V and +5V cables to the diode connectors (D16, D17), (Figure 173 on page 247). Use a 7/16 inch (11 mm) nut driver to tighten the power cable lug and connection hardware:
 - The positive voltage connection hardware stack is lock washer, lug, lock washer, bolt.

18. Reattach the black +12V and +5V cables to the ground connectors on the new board:
 - The ground connection hardware stack is lug, lock washer, nut (on top of the already installed flat washer, lock washer, nut).
19. Note the labels silk-screened on the Power Distribution board and verify that the +5V and +12V cable connections from the replacement supply are connected correctly.
20. Attach the gray metal grill (removed in [Step 11](#)) to the front of the replacement supply using the two #15 Torx screws removed earlier ([Figure 174](#)).
21. Secure the grill to the tub with the two #20 Torx screws removed earlier.
22. Re-install the metal grill on the Power Distribution board using the four #15 Torx screws removed earlier.
23. Re-install the ribbon and power cables to the right of the Power Distribution board.
24. Re-install the clear plastic cover on the metal grill using the remaining four #15 Torx screws removed earlier.
25. Re-attach the ground connection to the rear of the power supply and plug in the AC line cords to both supplies.
26. Turn on the replacement power supply and check that the +5V and +12V indicators on the Power Distribution board are illuminated.
27. Turn on power to the other power supply (if present).

Power Distribution Board Replacement

The Power Distribution board distributes power to all the internal components of the Main panel, and to the Menu panel and, if present, Local Aux panel.

1. Open the Main panel and turn off AC power to the Main panel for the Primary and (if present) Redundant power supply (see [Figure 166 on page 235](#)).
2. At the rear of the Main panel, disconnect the AC line cord from each power supply present.
3. At the rear of the Main panel, disconnect the DIN power cable(s) feeding the Menu panel and (on 4-M/E systems) the Local Aux panel.
4. Open the Main panel and locate the Power Distribution board inside the Main panel tub ([Figure 166 on page 235](#)).

5. Use a #15 Torx screwdriver to remove four screws that hold a clear cover onto a metal grill that covers the Power Distribution board (Figure 167 on page 236). Retain the cover and screws.
6. Disconnect the four M/E cable connections from the back left corner of the Power Distribution board:
 - ME 1 (J5)
 - ME 2 (J7)
 - ME 3 (J10)
 - ME 4 (J12)
7. Disconnect the cable connections listed below from the right side of the Power Distribution board:
 - Real Time Processor Power (J6)
 - Drive (J8)
 - Menu Processor (J9)
 - Real Time Processor Power (J11)
8. Use a #15 Torx screwdriver to remove the metal grill covering the Power Distribution board by removing the four outside screws holding it in place (Figure 167 on page 236). Retain the metal grill and screws.
9. Disconnect the two fan power cables at the left rear corner of the Power Distribution board (Primary power supply fan connector J1, Redundant power supply fan connector J4).
10. Disconnect the Power Supply Controls cable from the left side of the Power Distribution board (J13).
11. On the front of the Power Distribution board, disconnect the +12V and +5V cables from the positive voltage diode connections (Figure 173 on page 247). Use a 7/16 inch (11 mm) nut driver to remove the bolts and washers. Also remove the bolts and washers for each Redundant Power Supply connection, even if unused. Retain the hardware for reuse.
12. Disconnect the +12V and +5V cables from the Power Distribution board ground connections (Figure 173). Use a 7/16 inch (11 mm) nut driver to remove only the top nut and washer from each connection. Also remove the nut and washer for each Redundant Power Supply connection, even if unused. Retain the hardware for reuse. The lower nut, washer, and ground bolt will be removed later.
13. Remove the four standoffs at the corners of the Power Distribution board with the 3/16 inch nut driver and retain them for reuse.
14. Remove the Power Distribution board from the tub.

15. Remove the lower ground connection nut and washers from the front of the board, and then remove the ground bolt for all four ground connections from the rear of the board. Retain the hardware for reuse.
16. Install the four ground connections onto the new Power Distribution board. Insert the four bolts from the rear of the board, and install the hardware from the front:
 - The hardware stack is flat washer, lock washer, nut.
17. Install the new Power Distribution board in the tub with the four standoffs.
18. Reconnect the two fan power cables at the left rear corner of the new Power Distribution board (J1, J4).
19. Reattach the Power Supply Controls cable to the connector on the left side of the Power Distribution board (J13).
20. If you have an older 4-M/E Main panel with an internal top lid support bracket, before tightening the connections route the power cables so there is open space for the support bracket to rest on the floor of the tub.
21. Reattach the red +12V and +5V cables to the diode connectors (D16, D17) on the new board ([Figure 173 on page 247](#)). Use a 7/16 inch (11 mm) nut driver to tighten the power cable lug and connection hardware:
 - The positive voltage connection hardware stack is lock washer, lug, lock washer, bolt.
22. Reattach the black +12V and +5V cables to the ground connectors on the new board:
 - The ground connection hardware stack is lug, lock washer, nut (on top of the already installed flat washer, lock washer, nut).
23. With only the power supply cables listed above reattached, reconnect the AC power lines at the rear of the Main panel, then turn on the Main panel Primary and, if present, Redundant power supply switches.
24. Confirm that both power supply fans operate.
25. Using a voltmeter across each +12V and +5V power supply cable connector pair, verify the voltages are correct and have not been accidentally swapped.
26. Turn off the Primary and (if present) Redundant power supply and disconnect the AC power lines at the rear of the Main Panel.
27. Re-install the metal grill on the Power Distribution board using the four #15 Torx screws removed earlier.

28. Reconnect the ribbon and power cables to the right of the Power Distribution board (the J connector numbers are different on the new board):
29. Reconnect the four M/E cable connections to the back left corner of the Power Distribution board (the J connector numbers are different on the new board):
30. Re-install the clear plastic cover on the metal grill using the remaining four #15 Torx screws removed earlier.
31. At the rear of the Main panel reconnect the AC line cord for each power supply present. Also reconnect the DIN power cables for the Menu panel and, if present, Local Aux panel.
32. Turn on the Main panel Primary and, if present, Redundant power supply and confirm proper Kalypso system operation.

Local Aux Panel Maintenance

The Local Aux panel requires no routine maintenance. For information on power distribution and diagnostics for the Local Aux control panel, refer to [Basic Functionality Checks on page 314](#) and [Local Aux Panel Diagnostics on page 315](#).

Refer to the Field Replaceable Units list in [Appendix B-Field Replaceable Units](#) for replacement parts available for the Local Aux panel.

The Local Aux subpanel is incorporated into the 2-M/E Main panel. See [page 243](#) for the replacement procedure for the Local Aux processor interface board.

Menu Panel Maintenance

Kalypso Menu panels require no routine maintenance. Troubleshooting and diagnostics for Menu panel knobs and pushbuttons (see [Basic Functionality Checks on page 312](#) and [Original Menu Panel Diagnostics on page 313](#)) and calibration procedures for the touch screen (see [Menu Panel Display Calibration on page 221](#)) are available through the Windows software on the Menu panel.

Refer to the Field Replaceable Units list in [Appendix B-Field Replaceable Units](#) for replacement parts available for the Menu panel.

Button Lamp Replacement

Kalypso system panel buttons illuminate, using LEDs or lamps. Different procedures are used for replacement.

Note Use care when removing keycaps from a Kalypso panel. Small parts are inside that can fall out and possibly drop into inaccessible areas.

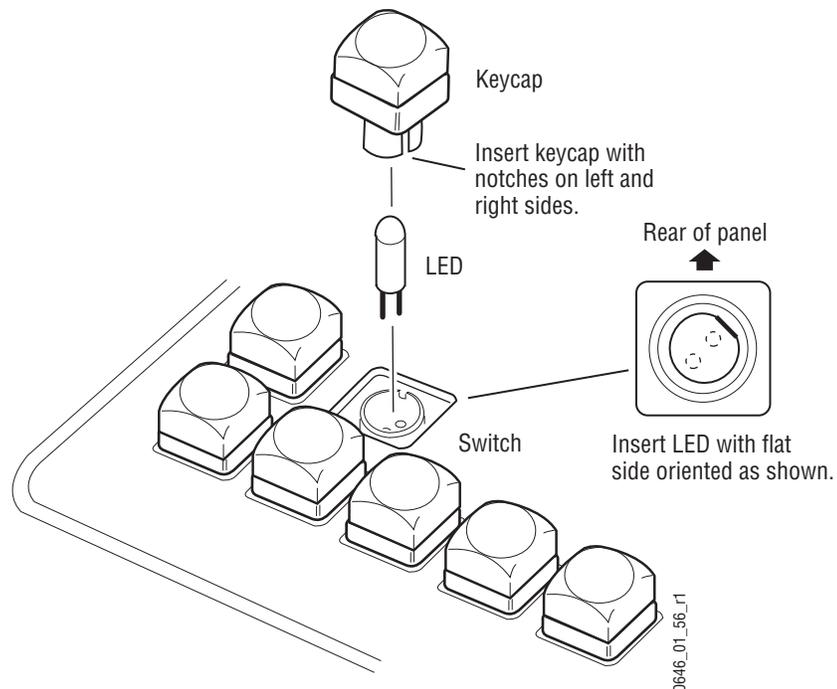
Note To prevent scratching keycap parts, wrap pliers jaws with tape before use.

Main and Local Aux Panel Procedure

The buttons on the Main and Local Aux panels use long-life Light Emitting Diodes (LEDs) which make lamp failure unlikely. If an LED fails to illuminate, it should be investigated and replaced if necessary. For detailed information see *Main Panel Diagnostics* on page 306 and *Local Aux Panel Diagnostics* on page 315.

1. Pull the keycap up and out of the panel using adjustable jaw pliers (Figure 175). If the entire keycap is not removed, carefully extract the pieces from the switch using pliers and reassemble the keycap (see Figure 178).

Figure 175. LED Replacement



2. Pull the LED out of the switch using needle nose pliers.

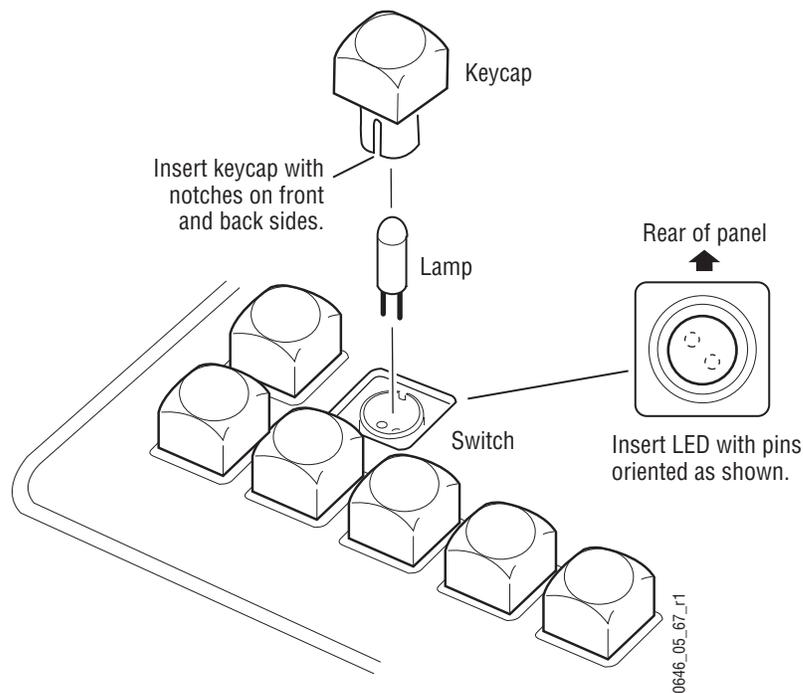
3. Replace with a new LED, making sure the polarity is correct as shown in [Figure 175](#) (flat side of LED to rear of switch). The pins must be straight to align with the holes in the switch.
4. Re-insert the keycap so the large notches are on the left and right sides of the switch.

24-Crosspoint Remote Aux Panel Procedure

The Kalypso 24-Crosspoint Remote Aux panels use incandescent lamps, and so may occasionally need to be replaced over the lifetime of the panel.

1. Pull the keycap up and out of the panel using your fingers or adjustable jaw pliers ([Figure 176](#)).

Figure 176. Lamp Replacement



2. Pull the lamp out of the switch using needle nose pliers.
3. Carefully replace with a new lamp. No special orientation is required, but the pins must be straight to align with the holes in the switch.
4. Re-insert the keycap so the large notches are on the front and back sides of the switch.

32-Crosspoint Remote Aux Panel

The LEDs in the 32-Crosspoint Remote Aux panel are soldered to the switch and cannot be replaced in the field. In the unlikely event a failure occurs, contact Grass Valley Customer Service. Contact numbers can be found on the copyright page at the front of this manual.

Button Labeling

Many buttons on Kalypso system panels can be labeled by inserting film with printed legends under their keycap lenses. 24-Crosspoint Remote Aux panels are shipped with a set of pre-printed labels to be installed by the user. Other Kalypso panels are shipped with blank source selection buttons (source name displays are generally used to identify sources). The remaining Kalypso panel buttons have standard button legends. Custom legends can be printed onto transparency film using a laser printer, then cut to size.

You may want to custom label the Source selection buttons on Remote Aux panels, since these panels do not have Source Name displays. Custom labeling may also be appropriate for the Local Aux panel and Remote Aux panel delegation buttons. The Kalypso system ships with the Local Aux delegation buttons labeled **Aux 1** through **Aux 13**. A system can be configured with more than 13 Aux buses, however, and these higher numbered Aux buses can be mapped to the Local Aux delegation buttons. These delegation buttons can be re-labeled for clarity.

Specifications

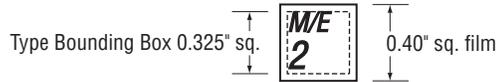
The following specifications (Figure 177) can be used to size the film labels and match the look of the standard Kalypso system buttons.

Figure 177. Kalypso System Keycap Film Specifications

Helvetica Condensed Oblique Font

- Main Panel
- Menu Panel
- Local Aux Panel
- 32-Crosspoint Remote Aux Panel (small key cap only)

SMALL KEY CAP FILM SIZE



NOTE: Font sizes listed below are not applicable to other fonts.

Small Key Cap Text Only
10 pt./10 pt. leading



LARGE KEY CAP FILM SIZE



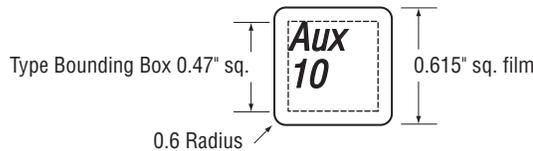
Mixed Text Sizes
Text: 10 pt./10 pt. leading
Number: 14 pt./14 pt. leading



Large Key Cap Only
14 pt./14 pt. leading



- 24-Crosspoint Remote Aux Panel (4000 style)



14 pt./14 pt. leading



Long Word Mixed Text Sizes
Text: 10 pt./10 pt. leading
Number: 14 pt./14 pt. leading



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Buttons with legends that do not change (fixed functions) may be internally laser etched, and so do not have film inserts. If you wish to relabel one of these buttons with film you must replace the existing labeled lens with a clear one. Buttons without fixed functions (source select buttons) ship with blank keycaps, suitable for film legends if you decide to always map these buttons to the same sources.

Button Label Replacement

Different button designs are used on various Kalypso control surface panels. The following buttons have a design which provides for label replacement:

- Large Kalypso button (used on Main Panel, Menu Panel, Local Aux panel),
- Small Kalypso button (used on Main Panel, Menu Panel, Local Aux panel. Two types of this button exist; an older style with a 2 part base, and the newer style with a 1 part base),
- 32-Crosspoint Aux button, and
- 24-Crosspoint Aux button (4000 model design).

A working button consists of a switch, an LED or lamp, and a removable keycap. A keycap, in turn, can consist of a base, diffuser, film label, and lens. The various button designs are similar, but their differences affect the procedures used when changing button labels.

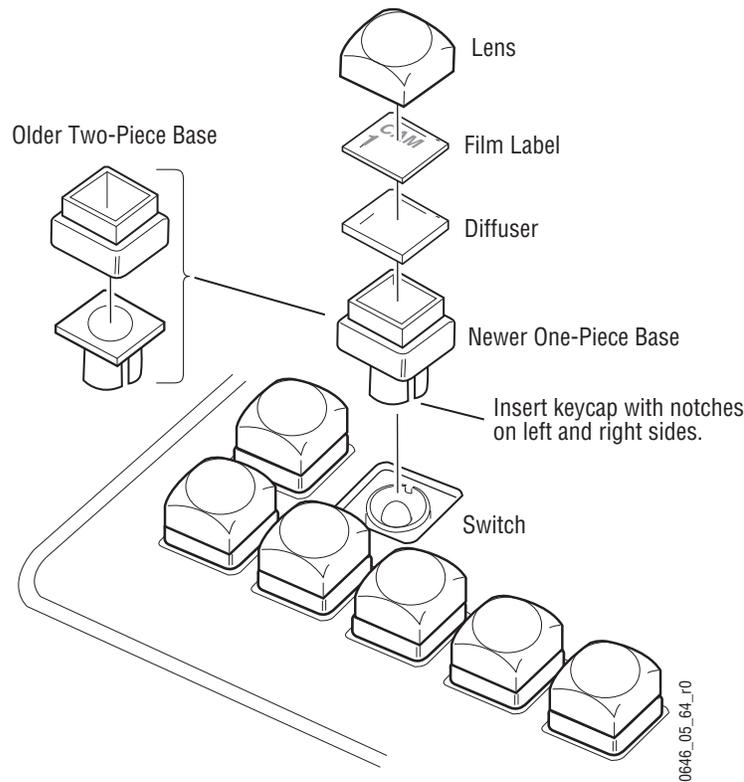
Note Use care when removing keycaps from a Kalypso panel. The keycaps have small parts inside that can fall out and possibly drop into inaccessible areas.

Note To prevent scratching button parts, wrap plier jaws with tape before use.

Large and Small Kalypso Button Procedure

1. Pull the keycap out of the panel using adjustable jaw pliers. You may remove the entire keycap, the lens may separate from the base, or on older small keycaps only part of the base may come out.
 - If only the lens separates, make sure you retain all the parts inside (diffuser and film label).
 - If the lens comes out with part or all of the base attached, pry the lens off the base using a small straight blade screwdriver inserted into the small slots on the sides.

Figure 178. Kalypso Buttons

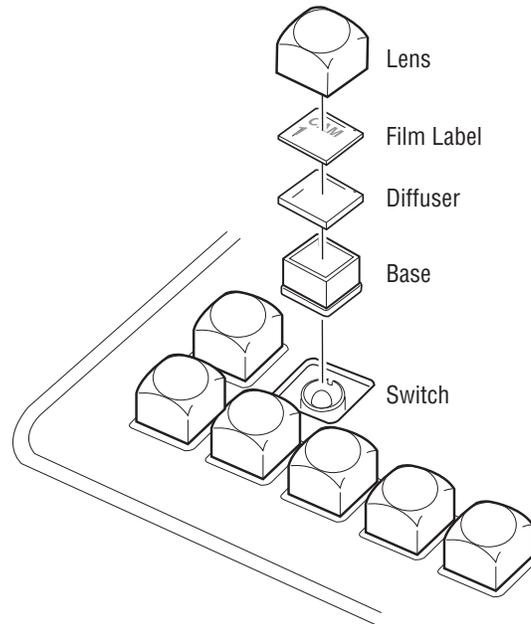


2. Extract the diffuser and existing film from inside of the lens. If the parts are wedged inside, use sticky tape to remove them. Avoid using sharp tools that can scratch the lens material.
3. Insert the new film label and diffuser into the lens, label first, and replace the lens on the base. Orient the label so the slots in the base are located on the sides.
4. Re-insert the keycap so its slots are on the left and right sides of the switch.

32-Crosspoint Aux Panel Button Procedure

1. Pull the keycap out of the panel, using your fingers or adjustable jaw pliers.

Figure 179. 32-Crosspoint Aux Panel Button



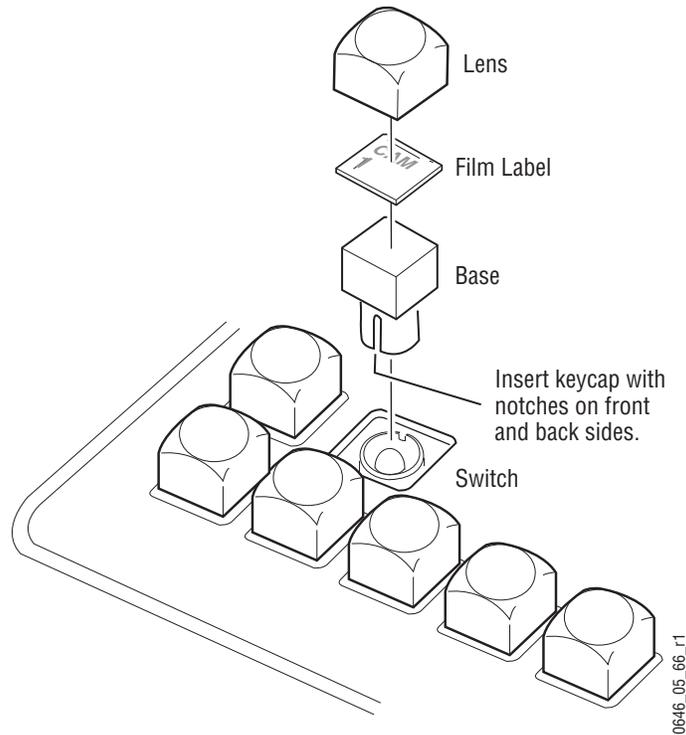
0646_05_65_r1

2. Extract the diffuser and any existing film from inside of the lens. If the parts are wedged inside, you can use sticky tape to remove them. Avoid using sharp tools that can scratch the lens material.
3. Insert the new film label and diffuser into the lens, label first, and replace the lens on the base.
4. Re-insert the keycap into the switch. The keycap fits into the switch in any orientation.

24-Crosspoint Aux Panel Button Procedure

1. Pull the keycap out of the panel, using your fingers or adjustable jaw pliers.

Figure 180. 24-Crosspoint Aux Panel Button



2. Using needle nose pliers, pull the keycap base out of the lens.
3. Extract the diffuser and any existing film from inside of the lens. If the parts are wedged inside, use sticky tape to remove them. Avoid using sharp tools that can scratch the lens material.
4. Insert the new film label and diffuser into the lens, label first, and replace the lens on the base. Orient the label so the slots in the base are located on the front and back.
5. Re-insert the keycap so the button slots are on the front and back sides of the switch.

Software Installation

Kalypso systems are shipped with the current software version. Updates to Kalypso system software are supplied on CD-ROM, which includes an Update Tool. The Kalypso Software Update Tool installs various software components for the Menu panel, Video Processor frame, Main panel, and

Local Aux panel. If your system is running an older version of software, update to the latest version before configuring your system. Refer to the *Release Notes* which ship with software updates for complete software installation instructions.

CAUTION Do not recycle power on the Main or Menu panel to reset them during a software installation. Recycling power results in an incomplete software install and produces error messages. Recycling power during a software installation necessitates a software reload, followed by a proper system reset using the Reset buttons.

Boot Dial Switch

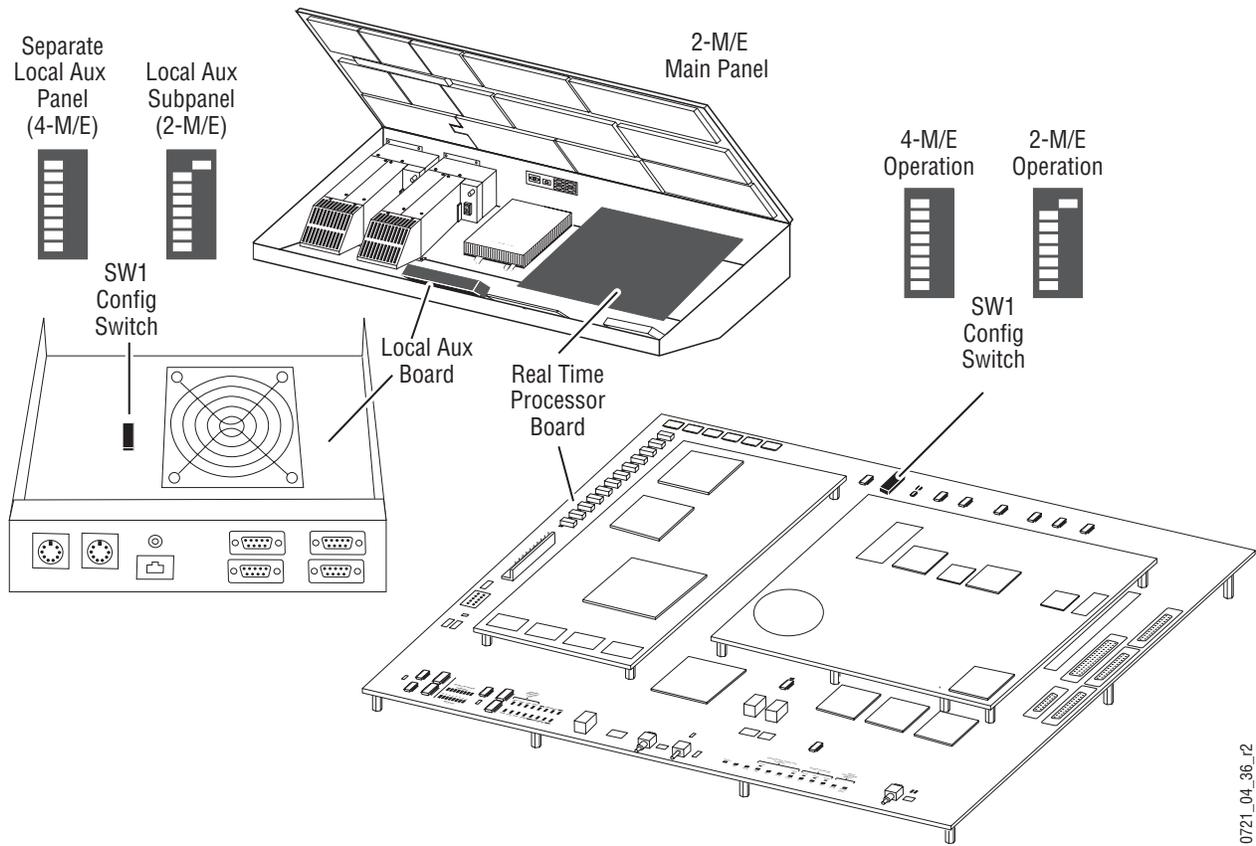
The Boot dial switch position **1** (one) of all Kalypso system processors is designed for loading boot software in the event the Kalypso software crashes during installation. It boots the processor with only the operating system and an FTP server. The normal position of the Boot dial switch is position 0 (zero) for operating mode.

Main Panel Configuration Switches

A configuration DIP switch on the RT Processor board in the tub of the Main panel is used to set the panel for 4-M/E or 2-M/E operation ([Figure 181](#)). This switch is set at the factory for the correct panel type and should not need to be changed. If the switch is in the wrong position (a replacement board may have been installed) incorrect software will load during an update and the panel will not operate. If this occurs, set the switch correctly and reinstall the panel software. The uppermost switch 1 (nearest the panel hinge) is set to the left (off) for 4-M/E operation, and to the right (on) for 2-M/E operation. All other switches should be off.

A configuration DIP switch located on the Aux panel board inside the 2-M/E Main panel ([Figure 181](#)) also controls software loading during an update. On 2-M/E systems this switch is set at the factory for Local Aux subpanel operation, rather than for the separate Local Aux panel used by 4-M/E systems. The uppermost switch 1 (farthest into the tub) is set to the right (on) for 2-M/E operation. All other switches should be off. The same switch resides inside the separate Local Aux panel used by 4-M/E systems, but it is not accessible to the user. This switch is set at the factory to the left (off) for 4-M/E operation.

Figure 181. Configuration Settings



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Clear NV Memory Procedure

Kalypso system non-volatile memory (NV Memory) contains Engineering, Suite, and User configuration data, and also has data for all the effects registers. This data is stored as files on the Video Processor frame hard disk, and is loaded on bootup. Errors in this data could cause Kalypso system problems, which may be overcome, perhaps only temporarily, by clearing the NV Memory.

Note You should have backup copies of your configuration and E-MEM files compatible with your current software version so they can be restored after the NV Memory is cleared.

To Clear Kalypso NV Memory:

1. Reset the Video Processor Frame using the engineering boot dial setting.
 - a. Turn the Video Processor frame Control module **COMM Boot** dial switch (the lower dial) to position **1**. Position 1 boots the control processor operating system without launching the Kalypso application, to permit software update if the application hangs repeatedly.

CAUTION If you leave the switch in position 0 (zero), the files cleared will be rewritten within 10-30 seconds and may become corrupted. Set position 1 (one) to suspend all normal processes, clear the files, and prevent the files from being rewritten automatically.

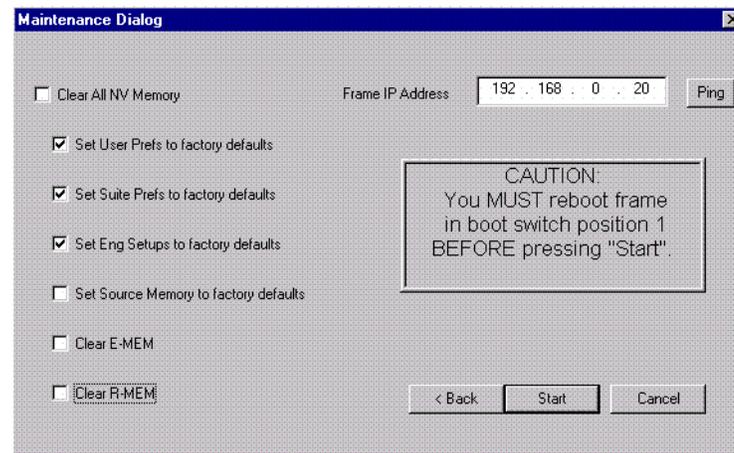
- b. Press the **Reset** button and allow at least 30 seconds for the system to reboot. The frame must be reset after changing the boot switch position. Simply moving the switch does not affect a running system.

CAUTION If you do not wait at least 30 seconds for the frame to reboot, data may become corrupted.

2. Clear NV Memory.

- a. Run the Kalypso Install program from the desktop (if it has been installed) or from the Kalypso Software CD.
- b. Select the **Clear NV Memory** box, then touch **Next**. The following screen will appear (Figure 182).

Figure 182. Clear NV Memory Categories Menu



- c. Ensure the IP address is correct and **Ping** to confirm the connection.
 - d. Check the boxes of the items you wish to clear. The **Clear All NV Memory** box toggles all the check boxes on or off.
 - e. Touch **Start** and confirm the dialog box by touching **OK**.
 - f. A progress bar will be displayed. When done, touch **OK**.
- ## 3. Reset the Video Processor frame again, using the zero boot dial setting.
- a. Turn the Video Processor frame **COMM Boot** dial switch to position **0**.
 - b. Press the **Reset** button and allow at least 30 seconds for the system to reboot.

4. Restore your backup files in the following order:
 - a. Reload your backup Engineering Setup file and make sure it is correct by, for example, checking that the proper source names appear in the Eng Setups Sources menu.
 - b. Load a Suite Profile, and check that the Suite Preferences settings are correct.
 - c. Load a User Profile and check that the User Preferences settings (Button Mapping for example) are correct.
 - d. Load some E-MEMs and run them to check that they operate correctly.
5. If there are any problems with any of the restored files, they may have become corrupted and need to be deleted and rebuilt. If a problem file locks the system, you may need to drain NV Memory again to restore system operation, but you will know what file is responsible. Contact Grass Valley Customer Service if you need troubleshooting assistance.

Kalypso Classic Frame Manual Flash Memory Update

This procedure describes how to manually update M/E or Transform Engine FPGA flash memory should the automatic flash update that occurs during software installation fail.

CAUTION This procedure should only be used for updating Kalypso Classic system flash memory. A Telnet connection to the Video Processor frame opens critical areas of the Kalypso system that can be accidentally changed very easily, and these changes can cause catastrophic Kalypso system failure with no simple recovery options.

Background

The M/E and Transform Engine modules contain a version ID for their flash contents. This version ID is updated during the flash update procedure whether or not all flash parts updated properly. This prevents repeated flash update attempts should a flash ROM have a hard failure. However, this also prevents recovery from a partial update of a module should the update process be interrupted for some reason.

Telnet Session

To force a flash memory update on an M/E or Transform Engine board, a Telnet session must be established with the frame. This provides access to a diagnostic and debug menu. Manual flash update is located in the debug portion of the menu tree.

Telnet into the frame using any available Telnet tool. You need to know the IP address of the Video Processor frame, and the PC that runs the Telnet tool must have IP access to that frame. One way to open a Telnet session is minimize the Kalypso Menu application and at the Windows desktop click **Start, Run**, and then type **TELNET** [IP address of frame].

CAUTION Care should be exercised while connected to the frame via Telnet. Follow these procedures carefully to avoid corrupting data or crashing the frame.

Procedure Annotation Conventions

In the following procedures, prompting is shown in regular font, commands typed in by the engineer are shown in **bold**, and explanatory comments are shown in braces [comments].

M/E Reflash Procedure

Note Blank or invalid selection for target M/E flash chip(s) is the same as 0 (CPU code).

The M/E reflash procedure reprograms all M/E modules installed in the system. If only one M/E needs to be reflashed, unplug the M/E modules you do NOT want to update to save time. M/E flash updates take approximately five minutes per module.

```
c> DBG
Menu> 1 [Main Proc]
CPU Board> Z [Program ME flash]
Enter Selection (0-9)> 8 [Program CPU, low FPGA, high FPGA]
CPU Board> Z
Enter Selection (0-9)> 9 [Program Matrix, Texture, Safe Title]
CPU Board> X [Exit]
c>
```

After all updates have been performed, close the telnet session:

```
c> EXIT
```

Reset the frame to insure proper initialization of all updated modules. If updating both M/E(s) and Transform Engine(s), the frame needs to be reset only once.

Transform Engine Reflash Procedure

The Transform Engine reflash procedure is similar to that above, except only one TE module is updated at a time.

```
c> DBG  
Menu> E [T/E boards]  
Select Transform Board (1-2)> 1  
hs-:TE-1> 30  
  
c> DBG  
Menu> E [T/E boards]  
Select Transform Board (1-2)> 2  
hs-:TE-2> 30  
  
c>
```

After all updates have been performed, close the telnet session:

```
c> EXIT
```

Reset the frame to insure proper initialization of all updated modules. If updating both the M/E and Transform Engine, the frame needs to be reset only once.

Software Option Authorization

Introduction

Some Kalypso system options have software components that can be enabled via an authorization process, using authorization codes. Authorization codes are also used for tracking maintenance contracts.

New Kalypso systems ship with the appropriate authorization codes installed, enabling all purchased options. When new optional features become available, Grass Valley sends new authorization codes to the customers.

Authorization Codes

The authorization process involves receiving an authorization code from Grass Valley and entering it in a menu on the Kalypso system. The authorization code is associated with a particular Kalypso Video Processor frame, identified by a System ID#, and is not transferable to different hardware. If you have multiple Kalypso systems at your facility, you will need to enter an authorization code onto each system.

CAUTION Software authorization data is stored along with IP addresses on the Reference In module of the Kalypso Video Processor frame. If you need to replace the Reference In module, you will need to remove an EPROM and EEPROM from the old module and install them into the replacement module to retain enabled software options and existing network connectivity. If the EPROM needs to be replaced with a different one, the system ID will change and you will need to contact Grass Valley Customer Service to get a new authorization code.

Standard authorization codes (Permanent) apply to purchased options and maintenance contracts. Other authorization codes (Temporary) may also be available that can enable selected options for a limited time. Temporary authorizations can be used for trial demonstrations and other special purposes. Temporary authorizations add to any permanently enabled options, but these additional options are disabled after the allotted time elapses.

Expiration Dates

Maintenance contract and temporary authorizations have expiration dates. Messages will be posted on the Kalypso Menu when an expiration date approaches. Expirations occur at midnight, but do not immediately go into effect. Instead, any expired options continue to operate until the system is power cycled or reset, at which time the options are disabled. This is intended to prevent loss of functionality during on-air operations. Expiration of the maintenance portion of an authorization will not disable any options.

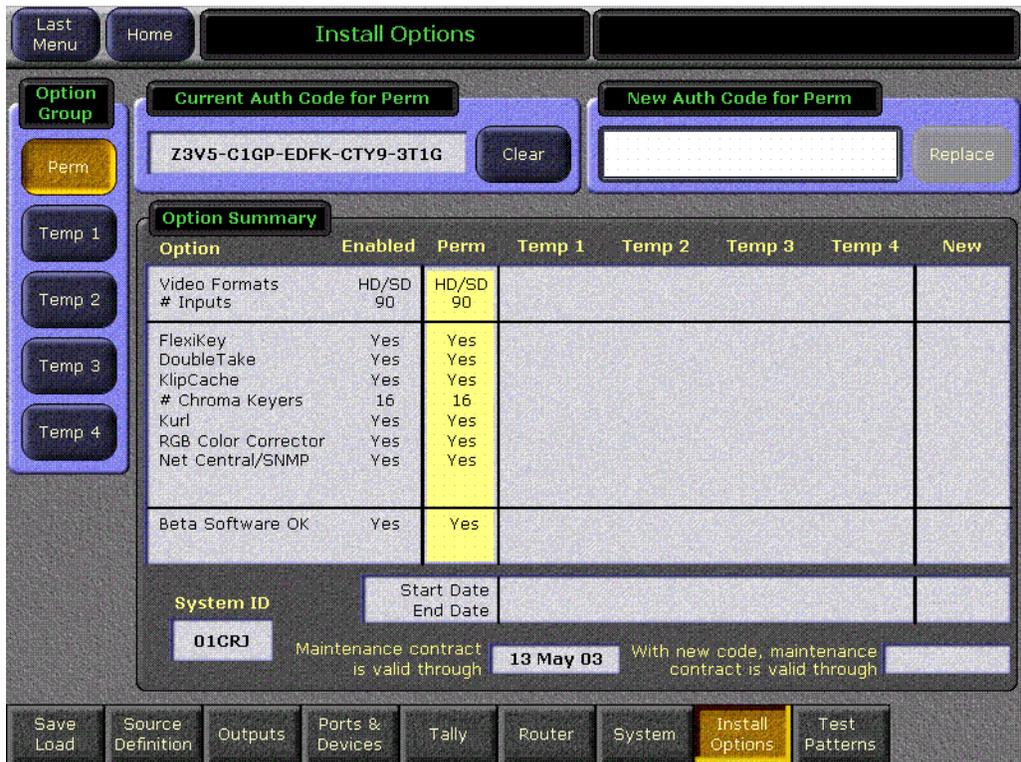
Authorization Procedure

Acquire Authorization Code

Grass Valley will be sending authorization codes to all Kalypso system customers. If you have received your codes and the Kalypso system IDs are correct, proceed to [Enter Permanent Authorization Code on page 268](#). If you do not have valid authorization codes you will need to acquire them from the Grass Valley.

1. Kalypso Release 11.0 needs to be installed on the system whose options you wish to authorize.
2. With version 11.0 software installed, go to the Eng Setup - Install Options menu (**Eng Setup/Install Options**) ([Figure 183](#)).

Figure 183. Install Options Menu



3. Write down the System ID # displayed on the lower left portion of the menu.
4. If you have more than one Kalypso system, repeat the above steps on every system that will have options enabled.
5. Contact Grass Valley Customer Service and request a code for each Kalypso System ID#. If options have not already been purchased, you can order the options directly from the service representative.

Enter Permanent Authorization Code

1. With version 11.0 software installed, go to the Eng Setup - Install Options menu (**Eng Setup/Install Options**) on the Menu Panel of the system whose options you are enabling ([Figure 183 on page 268](#)). Confirm that the System ID # on the menu matches the System ID# of the authorization code.
2. Touch the **Perm** button in the Option Group pane.
3. Touch the New Auth Code for Perm data pad and enter the code on the pop-up keypad.

Note System ID# and Authorization Codes are alphanumeric and need to be entered exactly. Authorization codes do not use the letters “o” or “l” to avoid confusion with the numbers “0” and “1”. The dashes in authorization codes are required for use.

4. Touch the button labeled either **Replace** or **Install** next to the new authorization code. The codes will be added and the expiration date of any maintenance contract will be indicated. If you do not believe the option statuses reported are correct, contact Grass Valley Customer Service to resolve the issue.
5. If options were removed, reset the Video Processor frame.

Note When an option is removed, it remains operational until the Video Processor frame is reset or power cycled. When an option is added, it becomes operational immediately without requiring a frame reset.

6. Write down the authorization codes, specifying which system they apply to, and store this information in a safe place, should you need to re-enter the codes at some time in the future.

Temporary Authorizations

For demonstration or rental, optional features can be authorized temporarily. Once you have obtained the temporary authorization code, enter it on the Kalypso system using the procedure described above, except you first select one of the **Temp** buttons. Temporary authorization information is displayed on the right portion of the menu. Up to four temporary authorizations are allowed at a time. Temporary authorization features that are removed remains active until the Video Processor frame is reset.

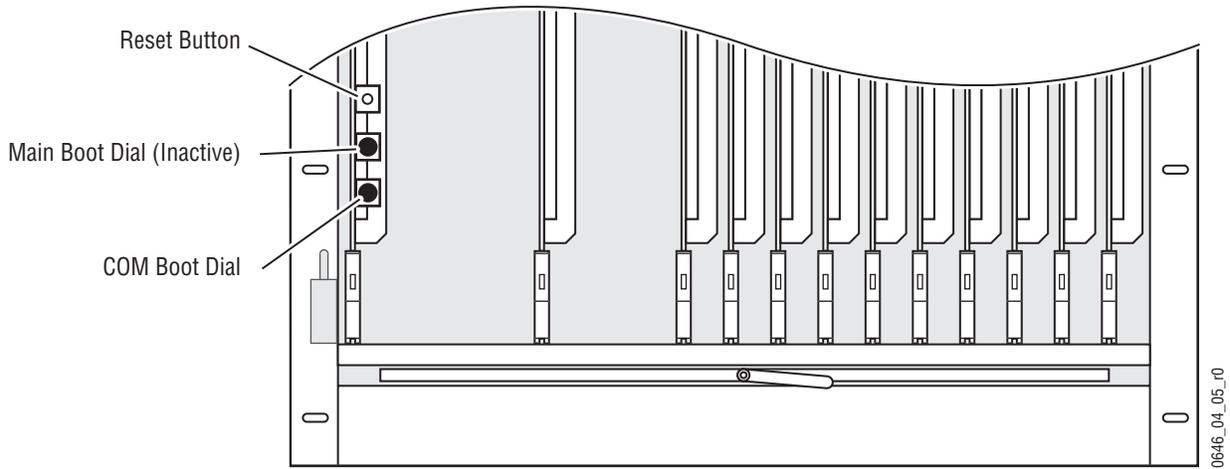
Hardware Reset Procedures

Devices need to be reset after software has been installed. Resetting devices may also be necessary for service or troubleshooting purposes.

Video Processor Frame Reset

The reset button for the Video Processor frame is located inside the front door, on the lower part of the Control module in Slot 1 ([Figure 184](#)).

Figure 184. Control Module Reset Button

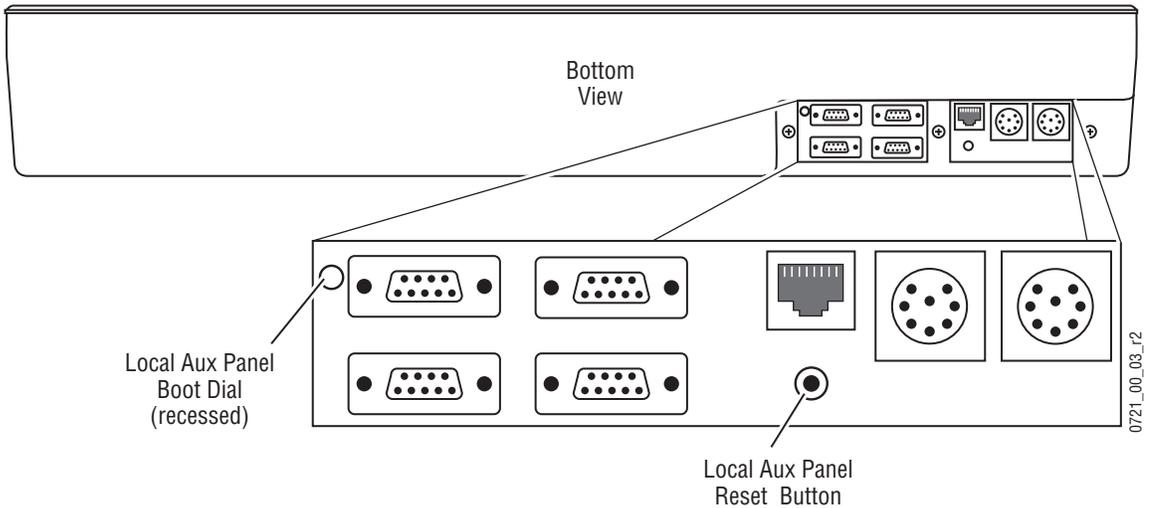


Below the Control module Reset button are two dial switches. The upper one, labeled Main Boot dial, is inactive. The lower one, labeled COM Boot, must be set to 0 (zero) for normal software updates. This is the default setting. Setting this dial switch to 1 (one) allows for loading boot software, including IP address setting. In this setting, in the event the application crashes during initialization, the processor boots with only the operating system and an FTP server, and does not launch the Kalypso application.

Local Aux Panel Reset

The Reset button for the Local Aux panel supplied with a 4-M/E Kalypso system is located on the bottom connector plate (Figure 185). The Reset button for the built-in Local Aux subpanel of the 2-M/E Kalypso system is located inside the Main panel tub (see Figure 187 and Figure 190).

Figure 185. Local Aux Panel Reset Button



Late Model Main Panel Reset

The reset button for a late model Main panel is located inside the Main panel tub (Figure 186 and Figure 187), and are accessed by opening the top lid.

The Boot dial switch next to the Main panel Reset button has a 0 (zero) default setting, which is used for normal software updates and system operation. Setting the Boot dial switch to position 1 (one) allows for loading boot software in the event the application crashes during installation. It boots the processor with only the operating system and an FTP server, and does not launch the Kalypso application.

Figure 186. Late Model 4-M/E Kalypso Main Panel Reset Switches

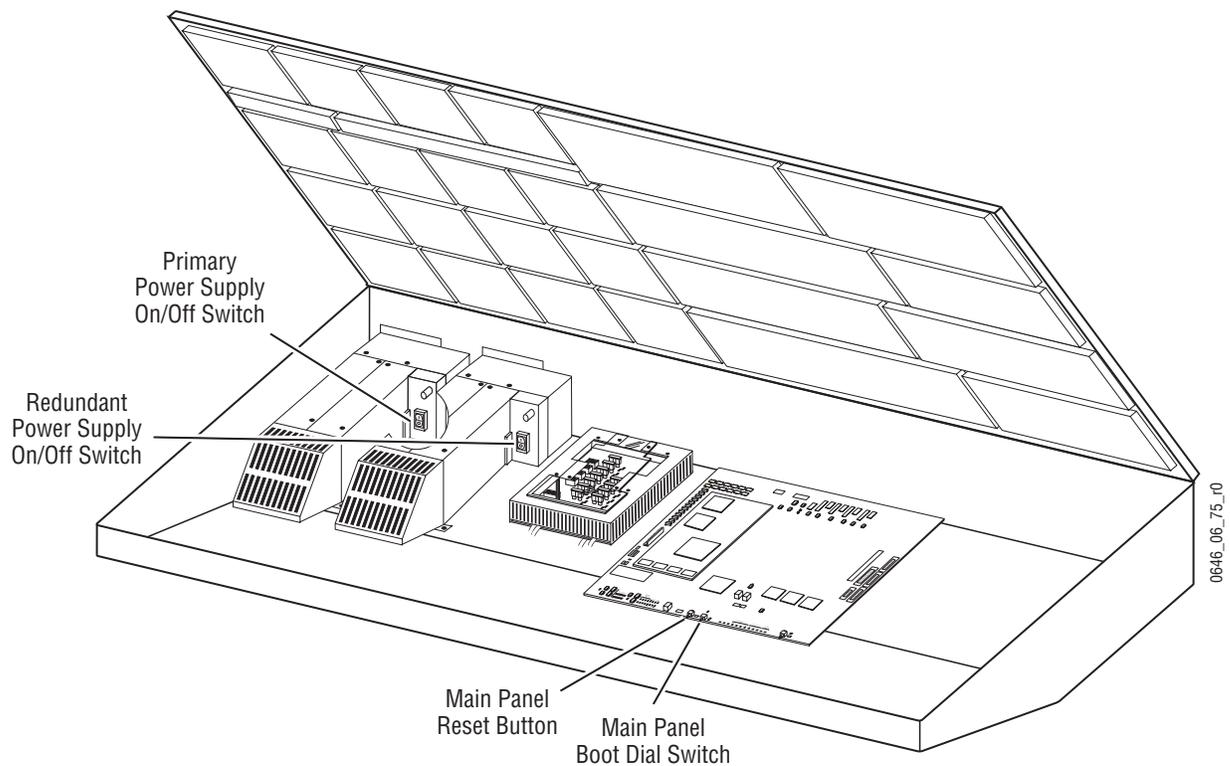
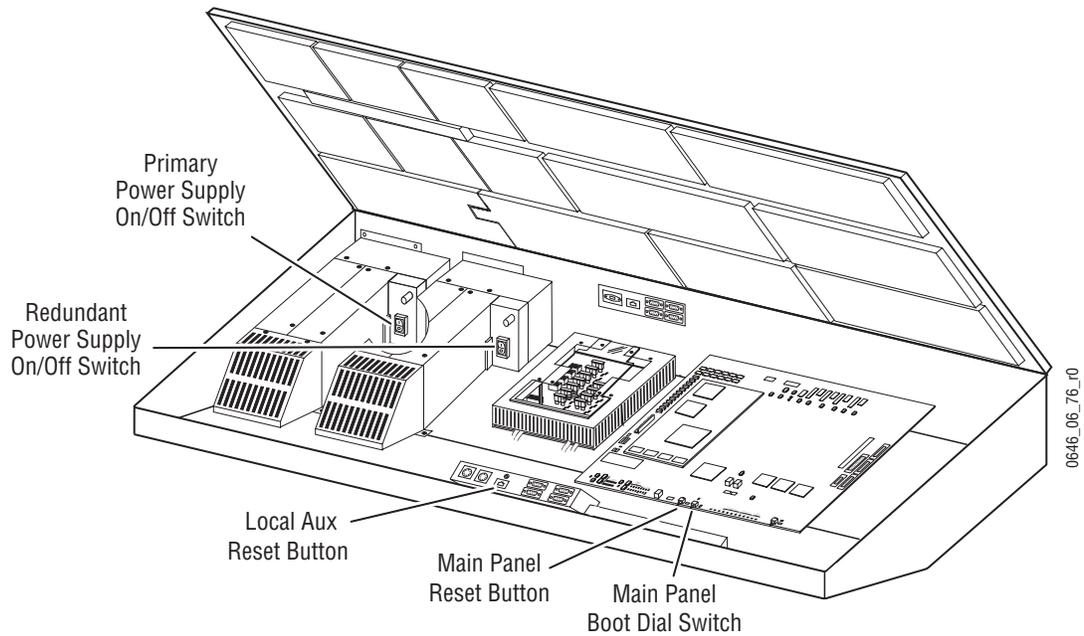


Figure 187. Late Model 2-M/E Kalypso Main Panel Reset Switches

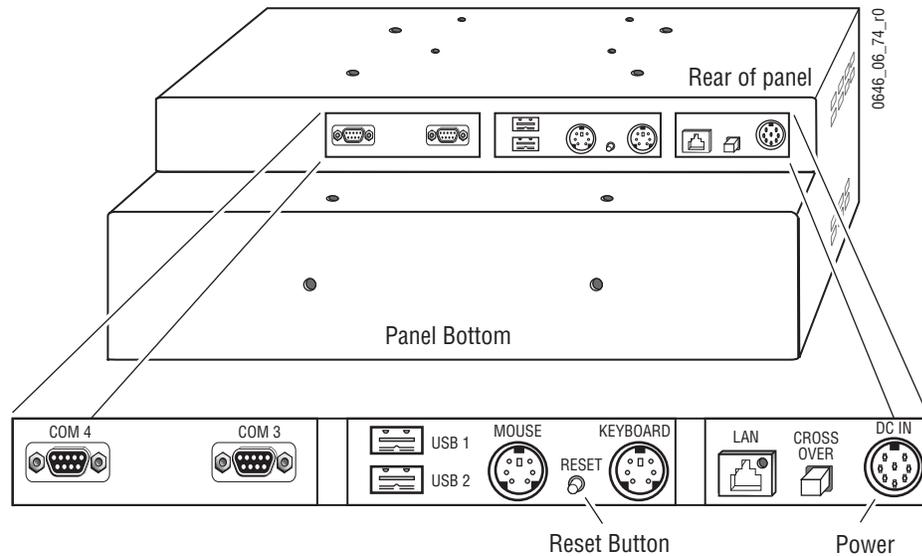


Enhanced Menu Panel Reset

CAUTION The recommended method to use to reset the Menu panel is to go to the Home menu, touch the **Shutdown OS** button, and choose either the Shut down or Restart the Computer options. This ensures the operating system does an orderly shutdown before the hardware is reset. Data corruption is possible if the operating system is interrupted when performing some operations.

The Enhanced Menu panel has a hardware reset button located on the bottom of the panel (Figure 188).

Figure 188. Enhanced Menu Panel Reset Button Location



This button can be used if there is a problem with the Menu panel preventing use of the method described above. Interrupting and restoring power to the Menu panel will also cause a reset.

Early Model Main Panel and Original Menu Panel Reset

The reset buttons for the Main panel and Menu panel are located inside the Main panel tub (Figure 189 and Figure 190 on page 274), and are accessed by opening the top lid. The Main panel Reset switch is located on the left and the Menu panel Reset button is located on the right.

CAUTION The recommended method to use to reset the Menu panel is to go to the Home menu, touch the **Shutdown OS** button, and choose either the **Shut down** or **Restart** options. This ensures the operating system does an orderly shutdown before the hardware is reset. Data corruption is possible if the operating system is interrupted when performing some operations.

The Boot dial switch next to the Main panel Reset button has a 0 (zero) default setting, which is used for normal software updates and system operation. Setting the Boot dial switch to position 1 (one) allows for loading boot software in the event the application crashes during installation. It boots the processor with only the operating system and an FTP server, and does not launch the Kalypso application.

Figure 189. Early Model 4-M/E Kalypso Main Panel Reset Switches

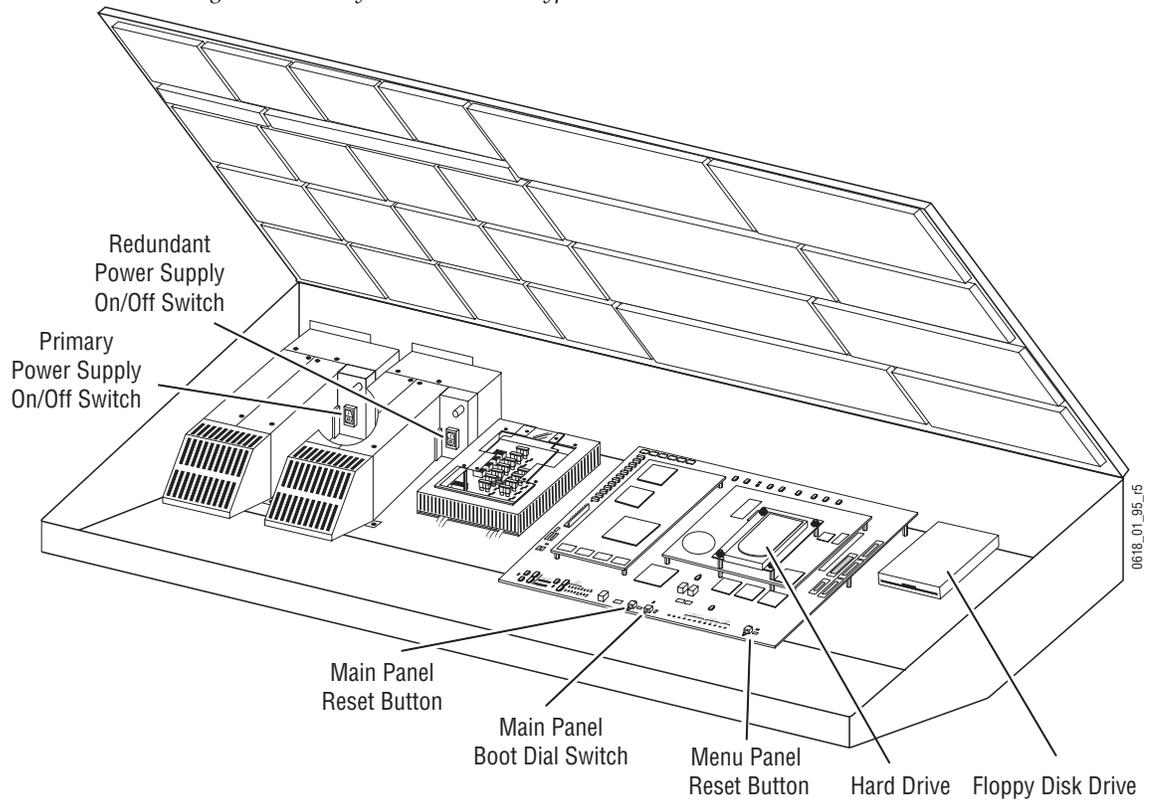
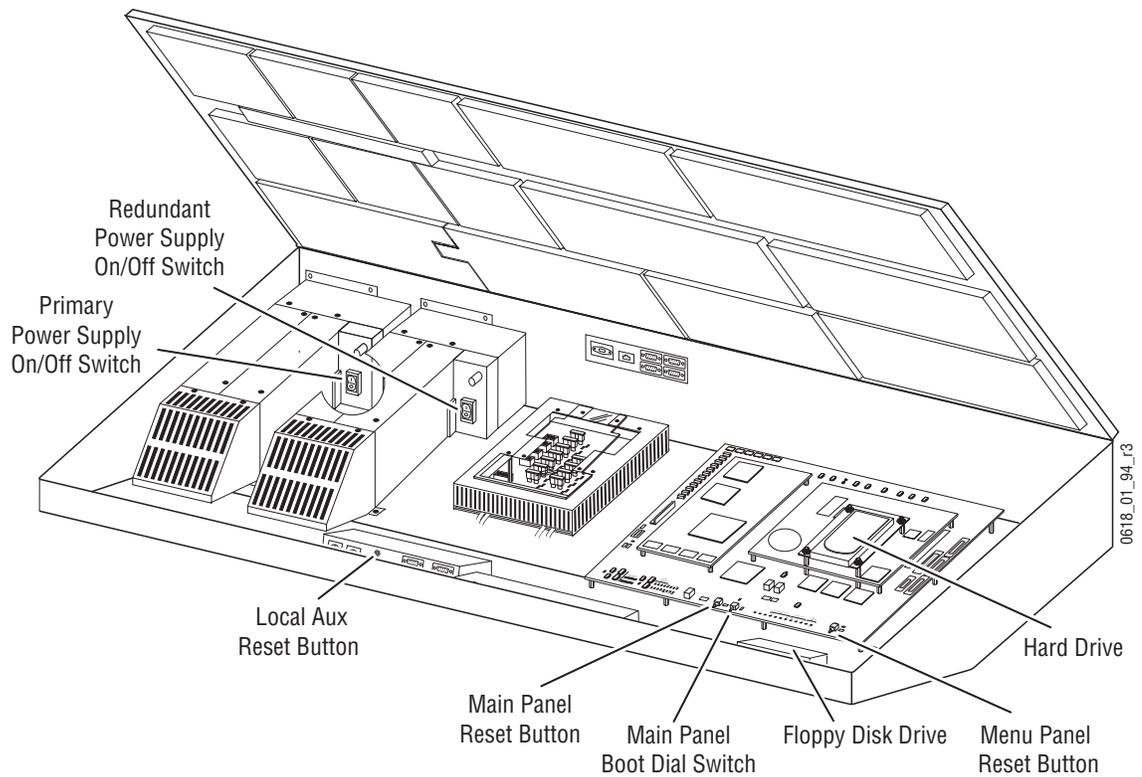


Figure 190. Early Model 2-M/E Main Panel Reset Switches



Troubleshooting and Diagnostics

Introduction

The Kalypso Video Production Center is designed for ease of service and includes a number of status indicators and diagnostic functions to allow fast and effective troubleshooting of the system. This section is written for troubleshooting a Kalypso system that was installed and working properly prior to experiencing any failures. Use this section in conjunction with *Section 3-Configuration*, and *Section 6-Functional Description*. Refer to *Section 4-Maintenance* for information on routine maintenance and parts replacement procedures.

Note If a module or assembly needs to be replaced in the field, check *Appendix B-Field Replaceable Units* for replacement notes for that assembly. Some assemblies have special field installation instructions.

Grass Valley Customer Service FAQ Database

Many answers to common questions can be found by searching the Grass Valley Customer Support Frequently Asked Questions (FAQ) database. Instructions for accessing the FAQ database can be found on the copyright page at the front of this manual.

Grass Valley Web Site

The URL for the Grass Valley website can be found on the copyright page at the front of this manual. Visit the web site for documentation, software, online support (including FAQs), spare parts information, and a link to the File Transfer Protocol (FTP) site.

Precautions

Before performing any type of maintenance or troubleshooting of the Kalypso Video Production Center, be sure you have read the complete *Safety Summary* at the front of this manual. The Safety Summary describes all of the pertinent safety issues and recommended precautions when working with the Kalypso Video Production Center.

Web Browser Access to Kalypso Components

Web browser access is available for the Kalypso system. Using any web browser able to access the Kalypso network, type the Video Processor frame IP address in the browser's Address field to view the following:

- Software Versions now installed on the Kalypso system (Figure 191),
- Frame Status of all Video Processor frame components,
- Frame Message Log (intended for troubleshooting),
- Frame Network Addresses, including Still Store, which can be viewed and set,
- Frame Date and Time, which can be viewed and set,
- Still Store Message Log, Date and Time
- RT Panel Message Log, Network Addresses, and Date and Time, and
- Aux Panel Message Log, Network Addresses, and Date and Time.

Figure 191. Kalypso Software Versions

The screenshot shows the 'Kalypso Web Access' interface. On the left is a navigation menu with links: [Software Versions](#), [Frame Status](#), [Frame Message Log](#), [Frame Network Addresses](#), [Frame Date and Time](#), and [Stillstore](#). The main content area is titled 'Current Software Versions' and contains a table with the following data:

Processor	Version	Date
Frame	V7.5.0	Dec 1 2002 04:49:13
RT Panel	V7.5.0	Dec 1 2002 04:22:10
Menu Panel	V7.5.0	Dec 2 2002 12:37:42
Aux Panel	V7.5.0	Dec 1 2002 03:25:13
Still Store	V7.5.0	Dec 1 2002 04:42:39

Frame Software Diagnostics Tools

Diagnostics Data File Transfer

A **Grab SW Diag Data** button has been added to the Status and Diagnostics menu. This button provides a convenient method to save the current configuration files (Eng Setup, User Prefs, Suite Prefs), E-MEM, Macro, and also any frame software diagnostics data files that may exist (see Diagnostic Data Collection below). If you need to contact Grass Valley for assistance about any software problems, the engineering team will need these files for efficient troubleshooting.

Figure 192. Status - Versions Menu



Pressing the **Grab SW Diag Data** button opens a file browser window. After selecting the destination for the files, pressing the **Save SW Diag Data** button on this browser menu initiates the file copy process. The time required to transfer the files varies depending on the amount of data being saved, and may take a couple minutes. The Kalypso Main and Aux panels can be operated during the file transfer process. However, it is recommended not to exit from the browser menu while the files are being copied. A SW Diag Data directory will be created for the files. If a directory of that name already exists at that destination, it will be overwritten. After the files have

been copied, the entire contents of the directory should be compressed into a .zip archive. Grass Valley Customer Service can provide instructions on how to send this information to the Kalypso engineering team for analysis.

Diagnostics Data Collection

Kalypso systems incorporate internal code that gathers information should software problems occur. If the Video Processor frame crashes, extensive data detailing the current state of the frame software is automatically logged onto the frame hard drive. This data can help the Kalypso engineering team quickly address the problem. The information is retained indefinitely, but is overwritten should another frame crash occur.

Kalypso systems running version 9.1.5 or later software have an additional internal diagnostic tool available that can force the logging of the state of the frame software at any time. To accomplish this, the frame software must be halted and a frame reset will be required to resume system operation.

CAUTION The Diagnostics Data Collection tool should only be used under the guidance of Grass Valley Customer Service or the Kalypso engineering team.

The tool is activated by turning the Kalypso Video Processor frame COM Boot Dial switch to **6** (six) and leaving it there for more than one second. Do not reset the processor at this time. The processor will halt and the status LEDs on the module will count in binary as the diagnostic information is written to the frame hard drive. When all of the data is recorded (about 30 seconds), the counting stops and all the frame's CPU status LEDs will illuminate. The COM boot dial switch should then be set back to **0** (zero) and the frame reset. The Kalypso system will then return to normal operation.

Commonly Reported Problems

The table below lists the problems most commonly reported to Grass Valley Customer Support, and provides direction to additional information and/or procedures for each problem.

Table 33. Commonly Reported Problems

Problem	Page Number
Air Filter Binding in Frame	page 279
CPL Connection Unstable	page 279
Interface Profile and Kalypso	See the <i>Machine Control Interfaces Installation Instruction Manual</i>
Lever Arm and/or Joystick Needs Calibration	page 219
No Communication Between Main Panel and Frame	page 280
No DC Power to Kalypso System	page 283

Table 33. Commonly Reported Problems - (continued)

Problem	Page Number
Peripheral Bus II Triggers Intermittent	page 288
Still Store Will Not Ping	page 288
System Locks Up	page 293
Tally Interface/Mapping	page 336
Unable to Select Sources on Aux Bus	page 294

Air Filter Binding in Frame

On some frames shipped prior to September 1, 2000, the air filter catches on the frame while being removed or binds when replaced after cleaning.

- If the filter is damaged, contact Grass Valley Customer Support for a free replacement. Upon receiving a new filter, squeeze the four inside metal edges of the filter between your fingers in several locations prior to inserting the filter in the frame. This will make the filter easier to remove and replace.
- If the filter is not damaged upon removal, squeeze the four inside metal edges of the filter between your fingers in several locations prior to replacing the filter. This will make the filter easier to remove and replace.

CPL Connection Unstable

CPL connections were sometimes unstable in Kalypso software versions earlier than 5.1.5. Unstable CPL connection problems reported to Customer Support include:

- Failure to reconnect when the Main panel is rebooted, and
- Dropped connections without notification.

Dropped connections without notification resulted in the following intermittent symptoms:

- Loss of Main panel lamp updates,
- Failure to reconnect automatically,
- Loss of Main panel button presses while changing video, or
- Reconnection occurs only after a button is pressed.

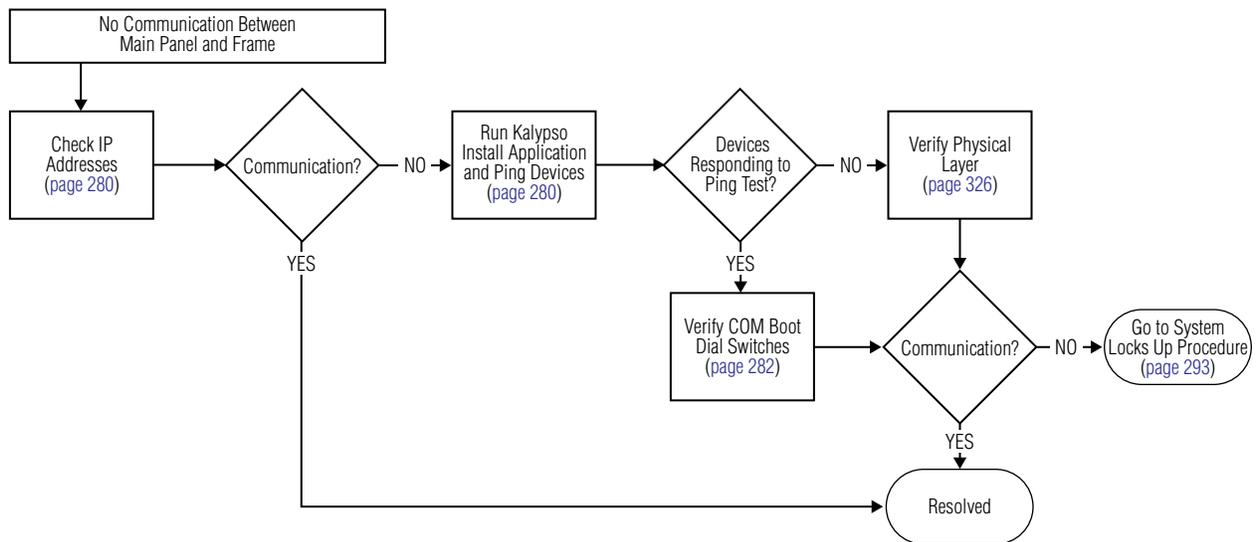
The way connections and reconnections are made and maintained have been made more robust. To prevent unstable CPL connections, verify that you have Kalypso software version 5.1.5 or later installed. If necessary, download and install updated software from the Grass Valley website. See

the Kalypso *Release Notes* for software installation instructions. The URL for the Grass Valley website is found on the copyright page at the front of this manual.

No Communication Between Main Panel and Frame

Anytime communication is lost between the Main panel and the Video Processor frame, a message indicating this appears in the Main panel M/E Status Display.

Figure 193. Troubleshooting No Communication Between Main Panel and Frame



Check IP Addresses

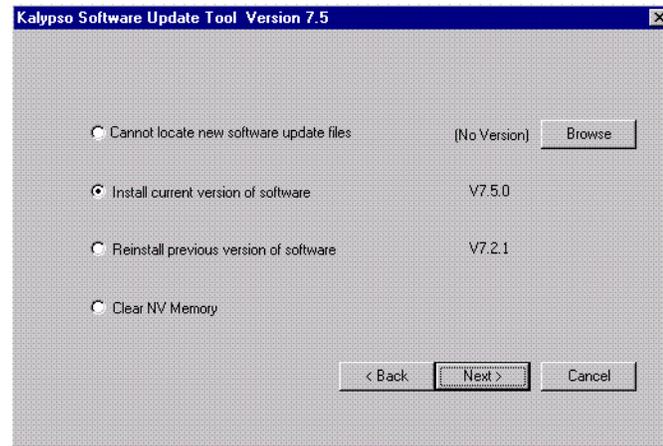
See *IP Addresses* on page 148 for information regarding Kalypso IP addresses. *Table 21* on page 149 lists the Kalypso default IP addresses. Your facility may use IP addresses other than the Kalypso defaults. Contact the Facility Engineer to make sure you know what the IP addresses are for your facility. To make sure the IP address are set correctly for your system, perform the instructions in *Changing 4-M/E and 2-M/E Main Panel IP Address* on page 155 through *Changing Local Aux Panel IP Address* on page 159 to verify and change (if necessary) the IP addresses. If, after performing these procedures, communication between the Main panel and the frame is not restored, continue to the following section, *Run Kalypso Install Application and Ping Devices*.

Run Kalypso Install Application and Ping Devices

1. If the Kalypso application is currently running, go to the Home menu and minimize the application by touching the **Minimize Menu** button.

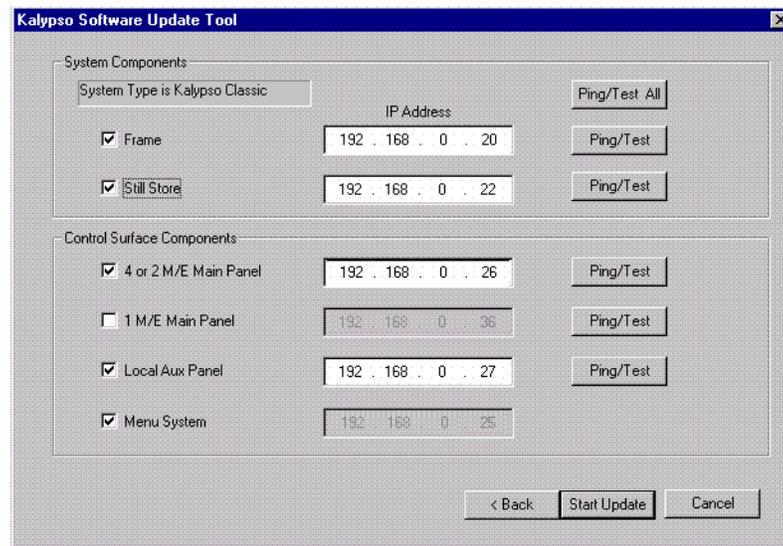
- When the Windows desktop appears, double-click the Kalypso Install icon. The Kalypso installation program loads and the Kalypso Software Update Tool screen appears (Figure 194).

Figure 194. Kalypso Install Screen



- Select the **Install current version of software** option and touch the **Next>** button. The following screen appears (Figure 195).

Figure 195. Kalypso Install Screen



- Touch the **Ping** button for the Main panel, then touch the **Ping** button for the Frame. A message informs you whether each device is responding.

5. Touch the **Cancel** button to exit the Kalypso Installation application.
 - If the devices responded to the ping test, skip [Step 6](#) and continue to the following section, [Verify COM Boot Dial Switches](#).
 - If the devices did not respond to the ping test, perform the instructions in [Verify Physical Layer](#) on page 326 then proceed to [Step 6](#).
6. If communication between the Main panel and the frame is not restored, perform the instructions in [System Locks Up](#) on page 293.

Verify COM Boot Dial Switches

1. Ensure that the Control module COM Boot dial switch ([Figure 196](#)) and the Main panel Boot dial switch on the Real Time Processor Interface board ([Figure 197](#)) are set to 0 (zero) and then reset the frame by pressing the Control module Reset button on the front of the frame.

Figure 196. Control Module Reset Button and COM Boot Dial Switch

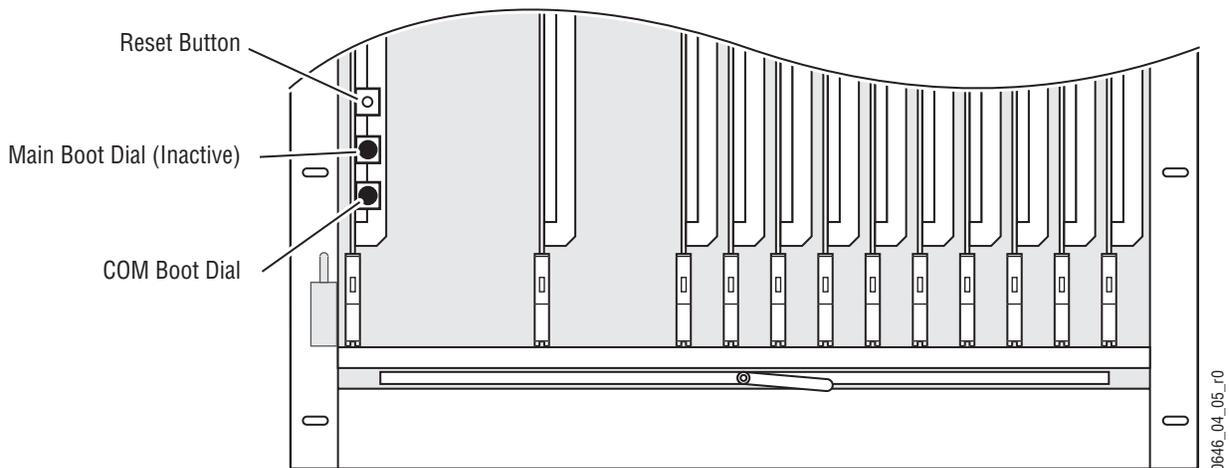
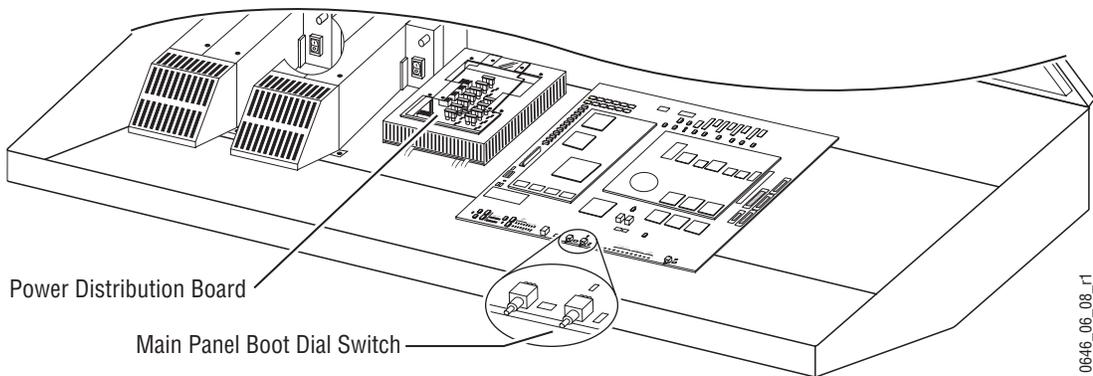


Figure 197. Main Panel Boot Dial Switch



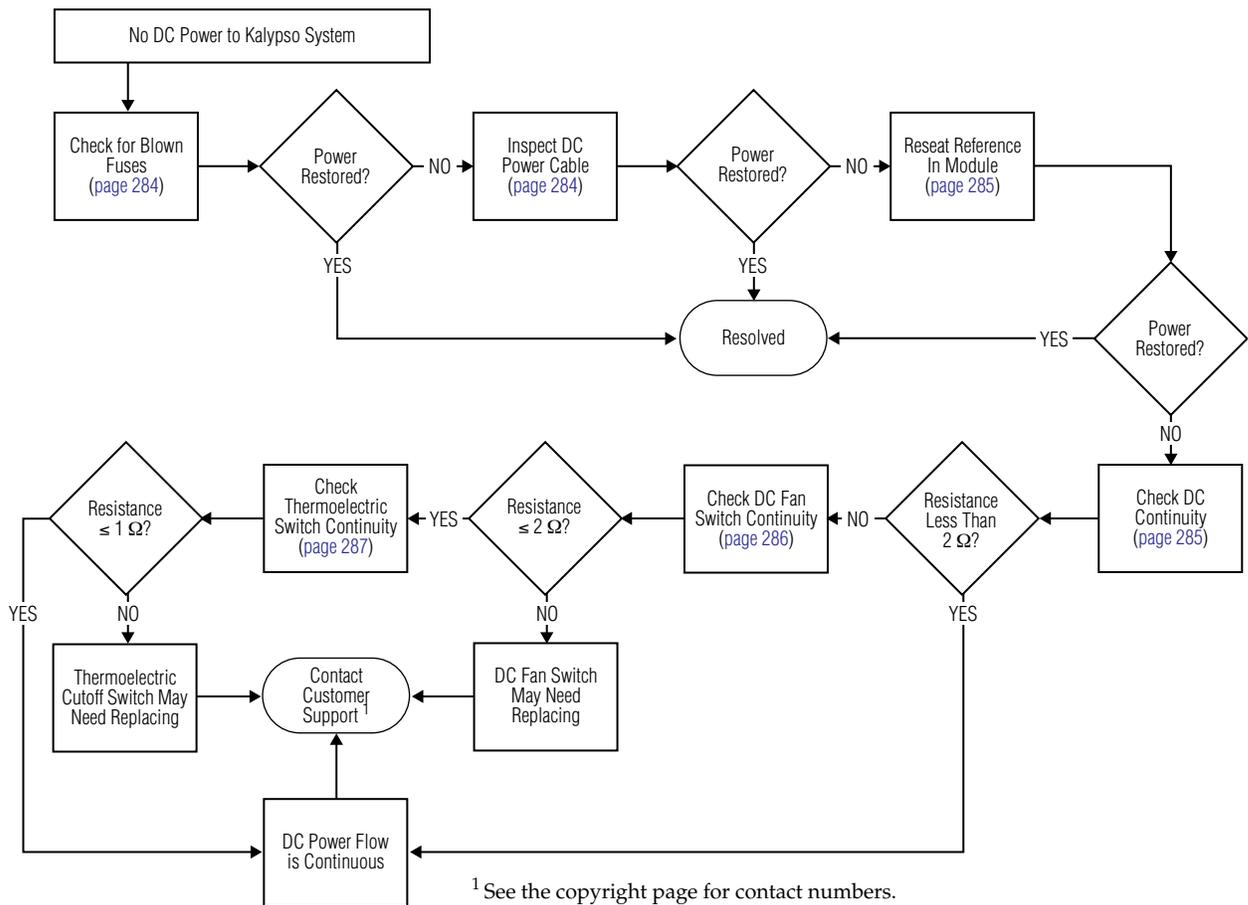
2. If communication between the Main panel and the frame is not restored, contact Grass Valley Customer Support.

No DC Power to Kalypso System

DC power can be interrupted or terminated by:

- Blown fuses,
- A loose DC power cable connection or broken connector pins,
- An improperly installed Reference In module,
- A bad DC power switch in the Fan Assembly, or
- A bad Thermoelectric Cutoff switch.

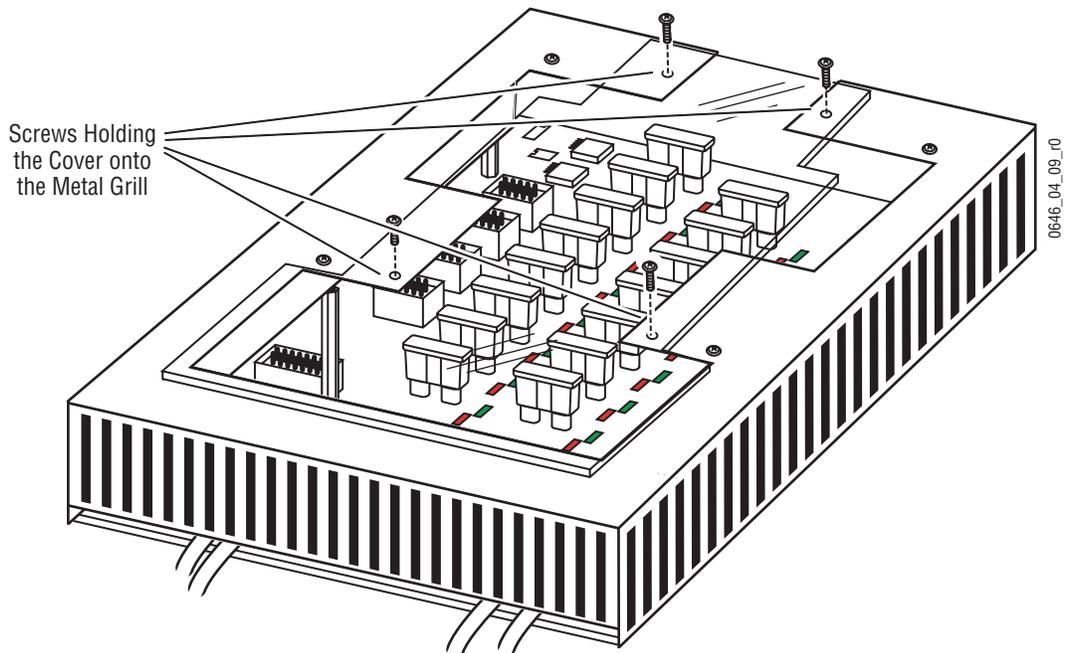
Figure 198. Troubleshooting No Power to Kalypso System



Check for Blown Fuses

1. Inspect the fuses located on the Power Distribution board inside the Main panel (Figure 197). A red LED indicates that a fuse needs to be replaced (see Figure 214 and Table 40 for detailed LED status information). If there is no indication that any fuses need replacement, skip Step 2 and continue to the following section, *Inspect DC Power Cable* on page 284.
2. To replace a fuse, use a #15 Torx screwdriver to remove the cover on top of the Power Distribution board by removing the four screws holding it in place (Figure 199). Replace the fuse and cover. If DC power is not restored, continue to the following section, *Inspect DC Power Cable*.

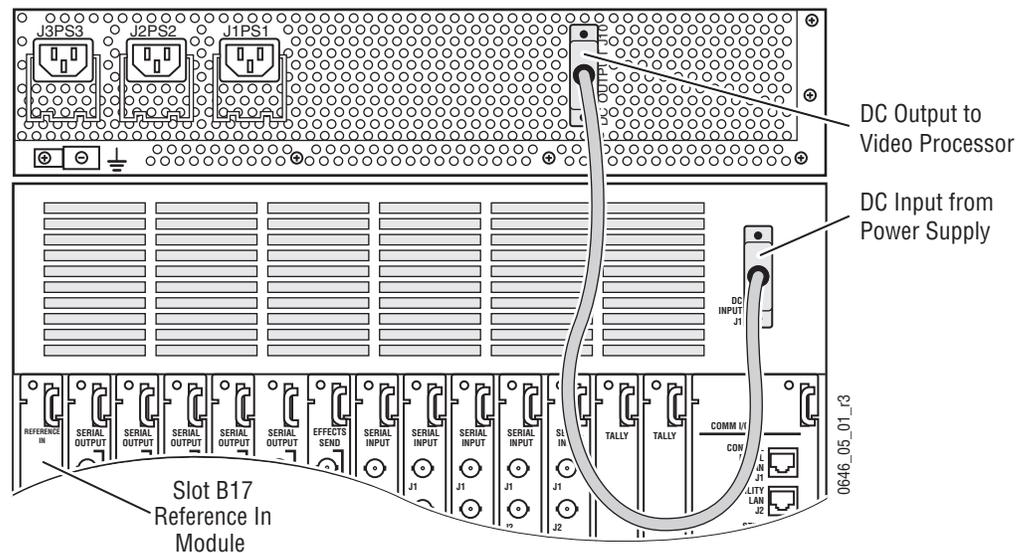
Figure 199. Power Distribution Board



Inspect DC Power Cable

1. The DC power cable is connected from the Power Supply DC Output connector to the frame DC Input connector (see Figure 200). Inspect both ends of the DC power cable for pushed, bent, or broken pins or a loose connection.
 - If the cable, connectors and pins appear to be okay, continue to the following section, *Reseat Reference In Module*.
 - If any pin, connector or cable problem is noted, replace the cable. If DC power is not restored, continue to the following section, *Reseat Reference In Module*.

Figure 200. DC Input Connector, Frame Rear



Reseat Reference In Module

If the Reference In module is not installed properly, it will prevent DC power from coming up in the main supplies. The Reference In module is located in the rear of the Video Processor frame (Figure 200).

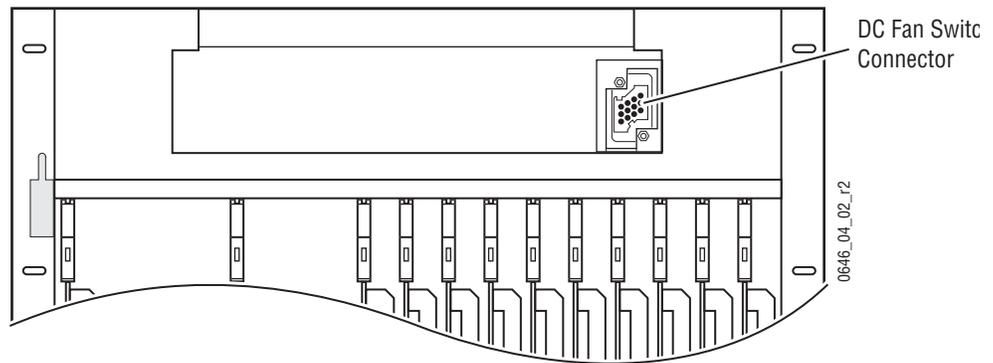
1. Using anti-static precautions, remove the module from the frame by disengaging the module from its connection to the midplane by simultaneously pulling up on the upper ejector tab and down on the lower ejector tab. When the module has been unseated, pull it out of the frame slowly while avoiding contact with adjacent modules.
2. Replace the module by reversing the process in Step 1. If DC power is not restored, continue to the following section, [Check DC Continuity](#).

Check DC Continuity

In order for the DC power flow to be uninterrupted, it must flow continuously from the Power Supply chassis, through the Reference In module, the DC power switch and connector in the Fan Tray assembly, the Thermoelectric Cutoff switch and connector on the frame motherboard, and back to the Power Supply chassis. Measurements can be made to ensure the flow is not interrupted.

1. Set the Fan Assembly DC power switch, located on the front of the frame, to the On position (Figure 201).

Figure 204. DC Power Switch Connector Inside Fan Tray, Frame Front



- If the measurement is less than or equal to 2 Ω , the DC Fan switch is not the problem. Continue to the following section, [Check Thermoelectric Switch Continuity](#).
- If the measurement is greater than 2 Ω , the DC Fan switch may need replacing. Contact Grass Valley Customer Support. When the DC Fan switch is replaced or Customer Support instructs you to do so, replace the Control I/O and Tally modules by reversing the process in [Step 1](#).

Check Thermoelectric Switch Continuity

With an Ohm meter, measure the resistance between wires one (brown) and two (orange) on the connector labeled FAN, located inside the rear of the frame, at the top right of the motherboard ([Figure 203](#)). The two wires connect to the Thermoelectric Cutoff switch connector, located inside the frame.

- If the measurement is less than or equal to 1 Ω , the Thermoelectric Cutoff switch is not the problem. Contact Grass Valley Customer Support.
- If the measurement is greater than 1 Ω , the Thermoelectric Cutoff switch may need replacing. Contact Grass Valley Customer Support. When the switch is replaced or Customer Support instructs you to do so, replace the Control I/O and Tally modules by reversing the process in [Step 1](#) of section [Check DC Fan Switch Continuity](#) on page 286.

Peripheral Bus II Triggers Intermittent

Effects can be triggered from the Kalypso, but effects triggered from the DVeous do not run as expected or the effect learned is not recalled.

Kalypso version 5.1.5 and Accom DVeous version 6.2 and later software correct this problem.

Kalypso software is available for download from the Grass Valley website or contact Grass Valley Customer Support for a CD-ROM. The Grass Valley URL and Customer Support contact numbers can be found on the copyright page at the front of this manual.

Accom DVeous version software is available for download at the following URL:

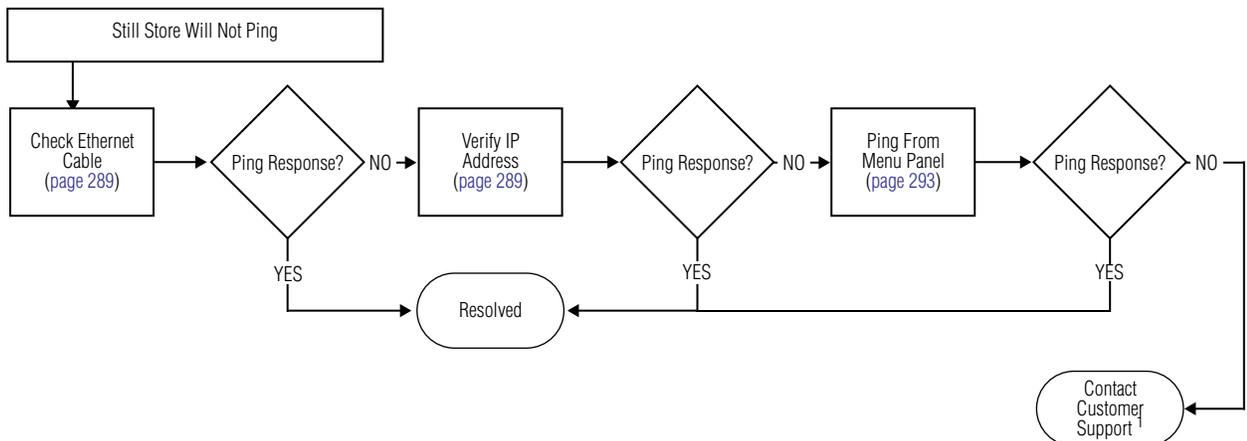
<ftp://ftp.accom.com/abekas/software/dveous>

Still Store Will Not Ping

When the Still Store module doesn't respond to a ping test, the problem may be:

- An unconnected or loose Ethernet cable on the rear of the Video Processor frame (Still Store LAN connector J3), or
- A difference between the Still Store IP address used for the ping test and the actual Still Store IP address stored in the Reference In module (refer to *Setting Still Store Option IP Address* on page 160).

Figure 205. Troubleshooting Still Store Will Not Ping

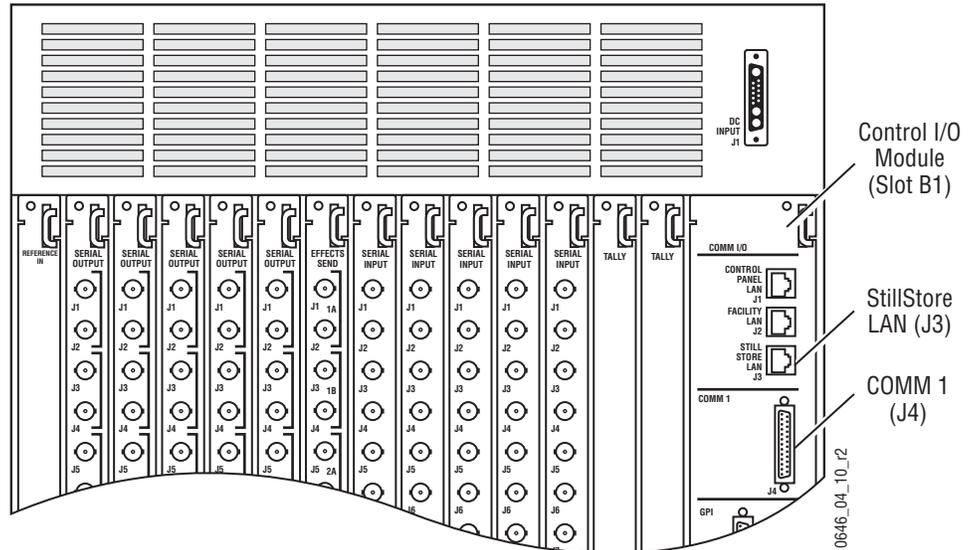


¹ Report the version number silk-screened on the Still Store module. See the copyright page for contact numbers.

Check Ethernet Cable

Ensure that a Category 5 cable is securely connected between the Still Store LAN Ethernet connector (J3), located on the Control I/O module (Figure 206), and the Ethernet switch for your facility by disconnecting and reseating the cable.

Figure 206. 4-M/E Frame, Rear View



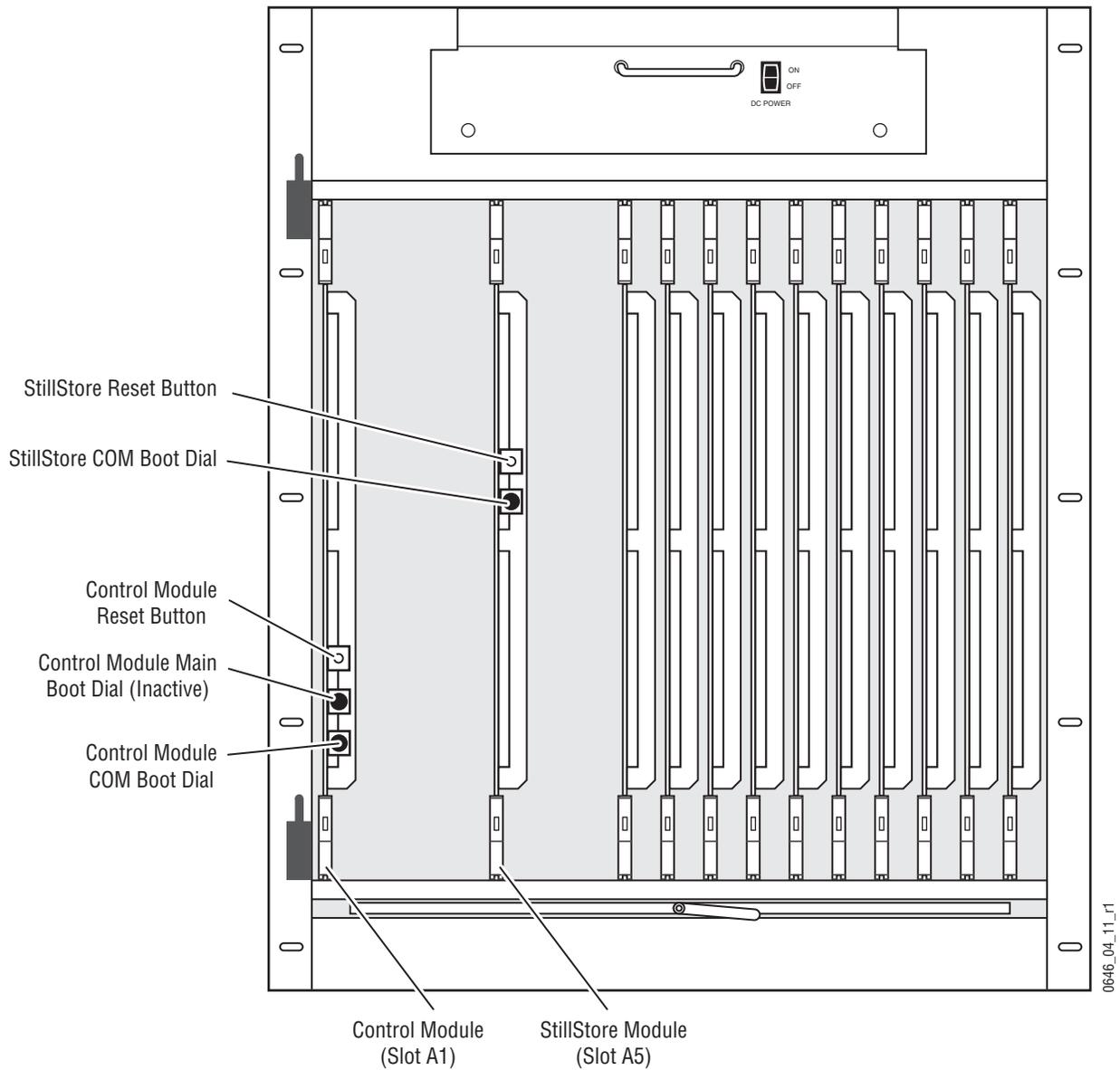
- Ping the Still Store module. If it does not respond, perform the instructions in the following section, [Verify IP Address](#).

Verify IP Address

The default IP address (192.168.0.22) of the Still Store module can be viewed or changed using a serial connection (a null modem cable) to a terminal or Windows PC running a terminal emulator program such as Hyperterminal.

1. Set the Still Store module COM Boot dial switch (Figure 207), to 0 (zero). A slot on the dial indicates the current number setting.

Figure 207. 4-M/E Frame, Front View



2. Connect a terminal or a Windows PC running an emulator such as HyperTerminal to the COMM 1 connector (J4) on the Control I/O module (Figure 206).

3. Set the terminal to the values in [Table 34](#).

Table 34. Serial Control Settings

Baud Rate	38.4 kbps
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

The COMM 1 connector on the Control I/O module is a male DB-25, wired as a standard RS-232 connector. [Table 35](#) lists the pinouts of a typical cable. Not Used in the Function column means the pins are not physically being used and don't need to be connected.

Table 35. Null Modem Cable (typical)

DB-25	DB-9	Signal Name	Function
8	1	DCD	Not Used
3	2	TXD	Transmit
2	3	RXD	Receive
20	4	DTR	Not Used
7	5	GND	Ground
6	6	DSR	Not Used
4	7	RTS	Not Used
5	8	CTS	Not Used

4. Set the Control module COM Boot dial switch to 1 (one).

Two dials are located on the Control module ([Figure 207](#)). The upper dial (Main Boot dial switch) is inactive. The lower dial (COM Boot dial switch) must be set to 1 (one) for boot operations, like setting IP addresses. The default 0 (zero) setting is used for normal software updates and system operation. An edge mark and slot on the dial indicates the current number setting.

5. Press the Control module Reset button ([Figure 207](#)). If communicating properly, the terminal displays a menu of selectable options ([Table 36](#)).

Table 36. Diagnostics Options

Letter	Action
a	View current IP Settings
f	Set Facility LAN IP address
p	Set Panel LAN IP address
s	Set Still Store LAN IP address

6. Enter **a** to view the current address and **s** to type in a different Still Store LAN IP address, if desired. If an error is made, do not backspace to correct. Instead, press **Enter** and retype the correct address.

CAUTION Once you have set an address you must finish the process, otherwise default addresses will be used.

7. Set the Control module COM Boot dial switch back to 0 (zero).
8. Press the Control module Reset button to reset the Video Processor frame.

After initialization, blinking green LEDs on the M/E modules indicate normal operation. If the LED statuses are not correct, the Control module COM Boot dial switch may not have been set to 0 (zero). If the switch was not set to 0 (zero), correct the setting and repeat [Step 7](#) through [Step 8](#).

9. Reset the Still Store CPU by pressing the white Reset button on the front of the Still Store module ([Figure 207](#)).

It takes approximately five minutes for the Still Store to load memory from disk. You cannot ping the Still Store until it is finished booting and loading memory. Check to see if the Still Store module is ready by verifying its status on the Menu panel. Bring up the Version screen on the Menu panel as described in the steps below:

- a. Select the **Status/Diags** button on the Menu panel.
 - b. Touch the **Versions** data pad to bring up the software version screen. The Version screen reports the software version running on each device in the Kalypso system (Main panel, Frame, Menu panel and Aux panel). When the Still Store module finishes booting and loading memory, the software version is displayed on the screen.
10. Ping the Still Store module. If it does not respond to the ping test, perform the instructions in the following section, [Ping From Menu Panel](#).

Ping From Menu Panel

1. Set the Still Store module COM Boot dial switch (Figure 207) to 1 (one). A slot on the dial indicates the current number setting.
2. If the Kalypso application is currently running on the Menu panel, exit the application by touching the upper right message area of the Kalypso menu.
3. When the NT desktop appears, select **Start/Run**, then type:


```
ping 192.168.0.22 -t
```

 and press the **Enter** key.

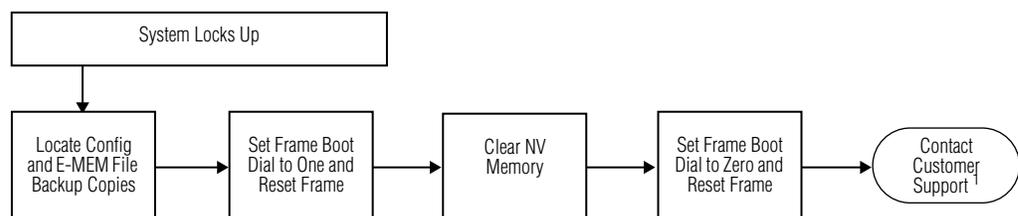
Note 192.168.0.22 is the default IP address for the Still Store module.

4. If the Still Store module doesn't respond, simultaneously press the **ESC** and **C** keys to exit the ping test. Record the version number silk-screened on the bottom right-hand corner of the Still Store module and contact Grass Valley Customer Support.

System Locks Up

The reasons the Kalypso Video Production Center may lock up are sometimes difficult to troubleshoot. System lockups should be reported to Grass Valley Customer Support as soon as possible. If it is vital to get the system back to production immediately, follow the instructions below to cold start the system.

Figure 208. Performing a Cold Start



¹ Report the circumstances surrounding the lockup. See the copyright page for contact numbers.

1. Locate the Zip disk backup copies of your configuration and E-MEM files so they can be restored after the cold start.
2. Follow the Clear NV Memory procedure (see page 262), being sure to first reset the Video Processor frame with the **COMM Boot** dial switch set to position 1.

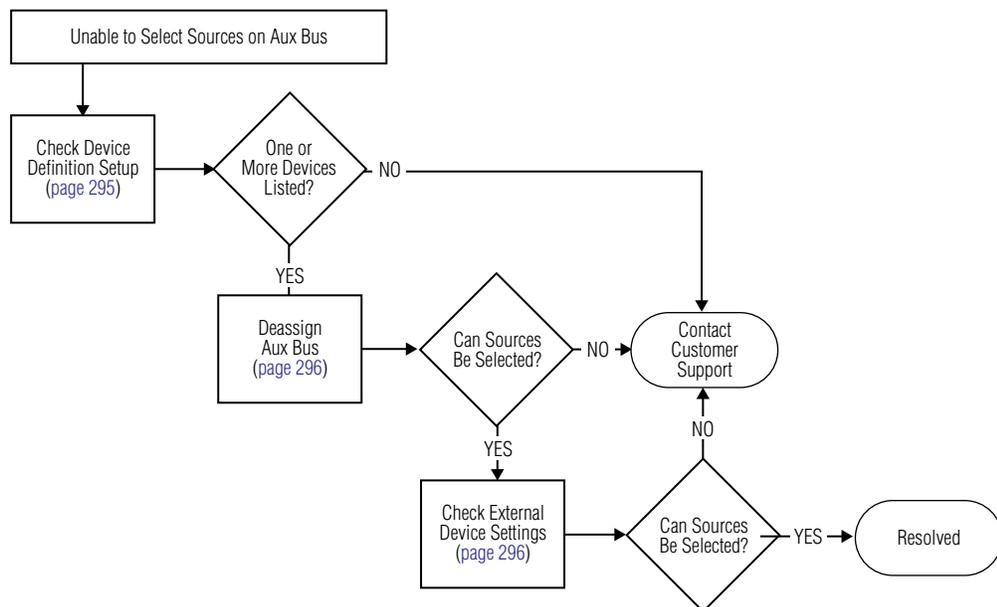
3. After clearing NV Memory and resetting the frame with **COMM Boot** dial switch set to position **0**, load the system configuration files and E-MEM registers from Zip disk.
 - If the system is still locked up, contact Grass Valley Customer Support.
 - Even if the system appears to be functioning normally, report the circumstances surrounding the lockup to Grass Valley Customer Support as soon as possible.

Unable to Select Sources on Aux Bus

When sources cannot be selected from the Aux Bus, the problem may be:

- The Aux Bus itself, or
- No communication with the external device configured to control the Aux Bus.

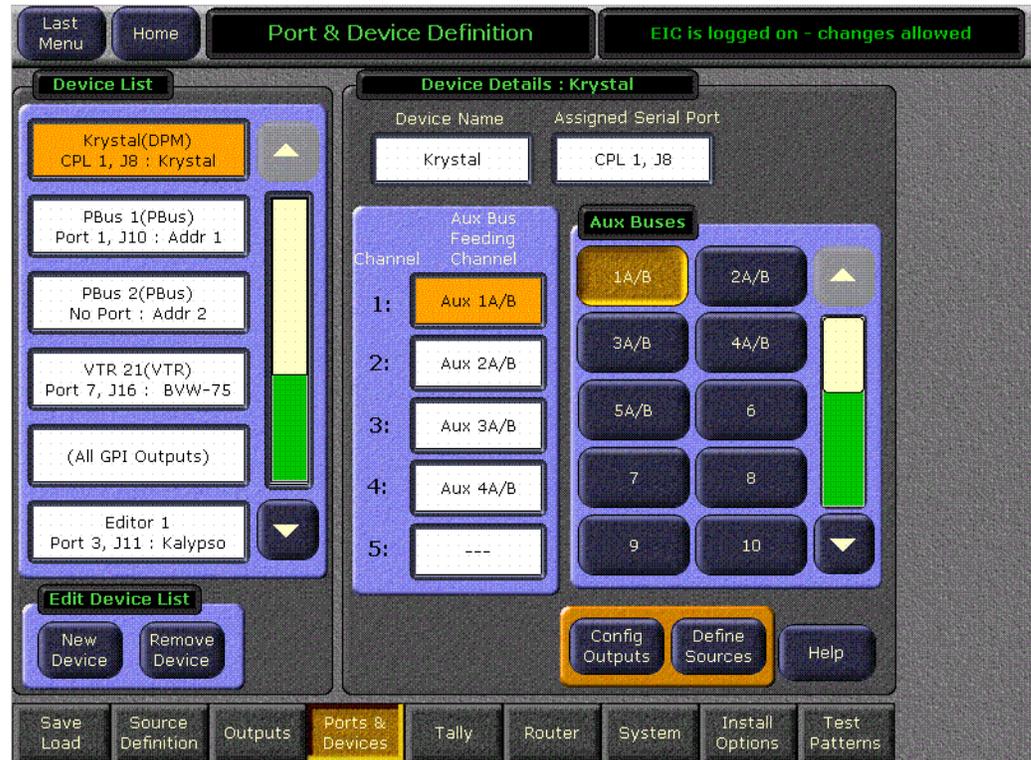
Figure 209. Troubleshooting Aux Bus Locking Up



Check Device Definition Setup

1. Check to see if the Aux Bus is assigned to a DPM. Touch **Eng Setup**, **Ports & Devices** to access the Port & Device Definition menu (Figure 210).

Figure 210. Eng Setup - Port & Device Definition Menu



2. Scroll the list on the left to see if any DPM devices have been defined, (they have **(DPM)** after the name in the Device List).
 - If no DPM devices are listed in the Defined Devices panel, there may be a problem with the Aux Bus panel. Contact Grass Valley Customer Support.
 - If one or more devices are listed in the Defined Devices panel, continue to the following section, *Deassign Aux Bus*.

Deassign Aux Bus

1. Select the DPM device and problem Aux Bus (Figure 210).
 - If there is only one DPM device listed or you know which Aux Buses are assigned to each device, touch the name of the device in the Device List and then touch the problem Aux Bus in the middle pane to select it.
 - If there is more than one device listed and you do not know which Aux Buses are assigned to each device, touch the name of each DPM device in turn until you locate the problem Aux Bus. Then touch that Aux Bus in the middle pane to select it.
2. Scroll down to the bottom of the list of Aux buses on the right and select **None** to deassign that Aux bus from DPM control.
3. See if that Aux Bus panel now has local control by attempting to change Aux Bus sources.
 - If sources still cannot be changed, there may be a problem with the Aux Bus panel. Contact Grass Valley Customer Support.
 - If sources can be changed, the problem is not with the Aux Bus panel. Continue to the following section, *Check External Device Connection*.

Check External Device Connection

When properly configured for DPM operation, Aux Bus sources can be switched by either the external device or manually on an Aux Bus panel. Manual control is accomplished using the connection to the external device, however, since it has been assigned that Aux bus. If communications to the external device fails, manual control of its assigned Aux Buses will be lost.

1. Check the cable connections between the external device and the Kalypso system.
2. Check the external device for correct configuration settings. Refer to the appropriate product documentation.
3. See if that Aux Bus panel now has local control by attempting to change Aux Bus sources.
 - If sources still cannot be changed, there may be a problem with the Aux Bus panel. Contact Grass Valley Customer Support.

Control Surface Troubleshooting

If you are experiencing functional difficulty with the control surface or panel, refer to the procedures below.

Main Panel

The Main panel pushbuttons and displays illuminate when the system is operating properly (there is no lamp saver or sleep mode). If you are experiencing problems with the Main panel, refer to the troubleshooting sections below.

Basic Functionality Checks

Perform the steps below in the order presented to check basic functionality of the Main panel.

1. Reset all Control panel processors by cycling power.
 - a. Cycling Main panel power to perform an overall reset of the control surface system by turning off the primary and redundant (if present) power supplies inside the Main panel, and
 - b. Turning power back on to both supplies.
2. Check status indicators inside Main panel.
 - a. Inside the Main panel, locate the Real Time (RT) Interface and the Power Distribution boards (Figure 212, 4-M/E panel and Figure 213, 2-M/E panel).
 - b. Check the status indicators on the Power Distribution board.

The Power Distribution board distributes the +12V and +5V from the panel power supplies to the various control surfaces including the RT Interface board in the Main panel, the Menu panel, and the Local Aux panel.

Refer to Table 40 and Figure 214 for an overview of the status indicators and their meaning. The status indicators in Table 40 are listed as they appear on the board from top to bottom from the left side of the board to the right.

- c. Check the status indicators on the RT Interface board.

The RT Processor Interface board mounted on the bottom of the Main panel tub houses the Real Time Processor for controlling the Main panel circuitry and the NT Processor for controlling the Menu panel. In addition, it provides communication links throughout the entire control surface, including the Satellite panels.

Refer to Table 37 and Figure 211 for an overview of the status indicators and their meaning.

Verify the Main panel is communicating over the panel LAN by checking the RTP Control Panel LAN Activity XMT and RCV LEDs at the front of the RT Processor Interface board inside the Main panel (Table 37 and Figure 212).

Figure 211. Real Time Processor Interface Board Status Indicators

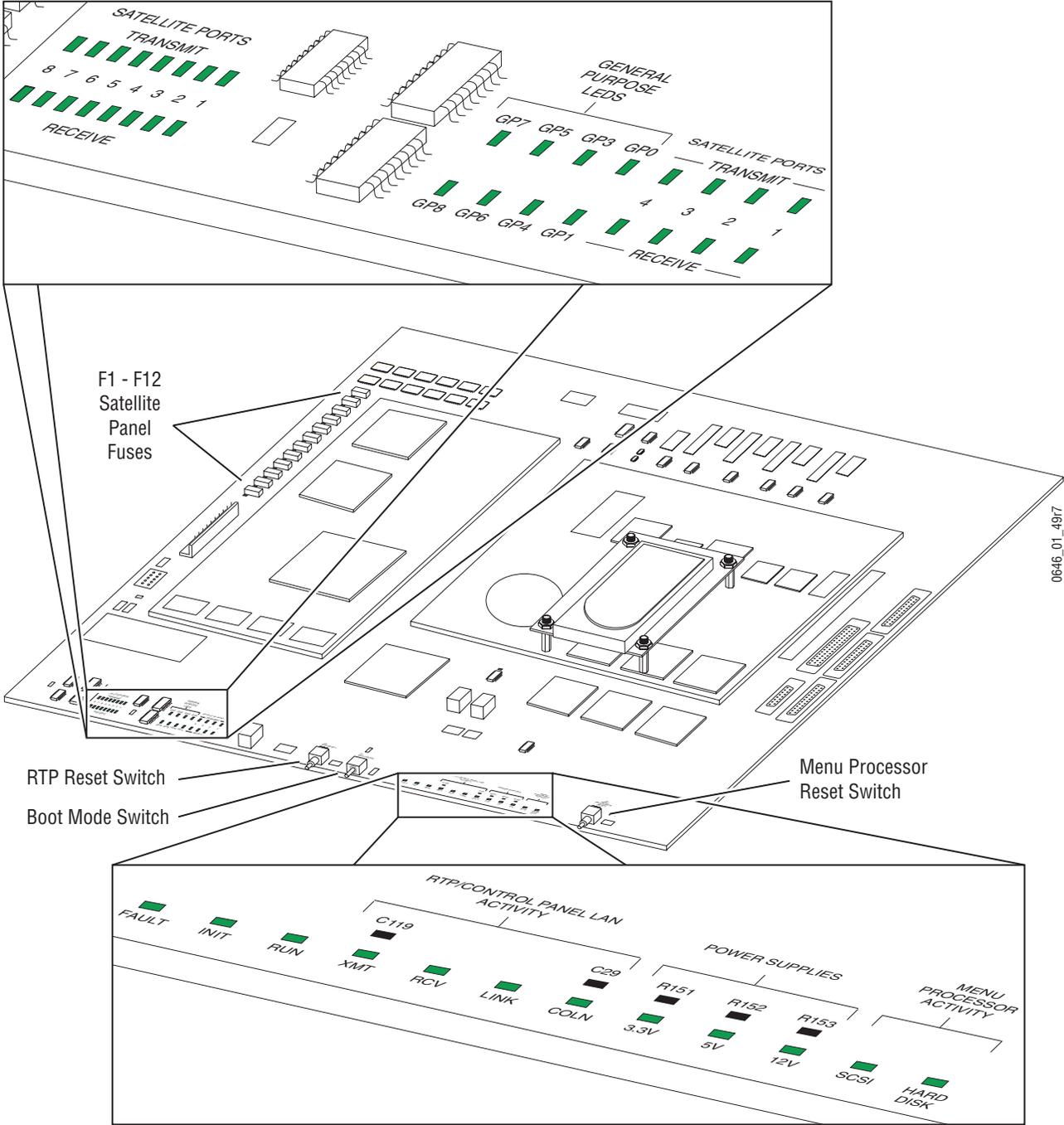


Table 37. Main Panel Real Time Processor Interface Board Status Indicators

Board Name	Indicator		LED State	Status Meaning/Action
	Group	Name		
Real Time Processor Interface	Satellite Panel Fuses	F1 - F12	Green LED on	Power present to Satellite panels (12 panels possible).
	Satellite Ports (1-12)	Transmit	Green LED on	Real Time Processor is writing data to the corresponding satellite port.
		Receive	Green LED on	Real Time Processor is reading data from the corresponding satellite port.
	General Purpose LEDs	GP0	Green LED on	Indicates PIC activity during field rate task.
		GP1	Green LED on	Bit 1 of Fault Status (Refer to Table 38).
		GP3	Green LED on	PIC information from joystick or lever arm will toggle LED state.
		GP4	Green LED on	Bit 2 of Fault Status (Refer to Table 38).
		GP5	Green LED on	PIC information from knob will toggle LED state.
		GP6	Green LED on	Bit 3 of Fault Status (Refer to Table 38).
		GP7	Green LED on	PIC information from button will toggle LED state.
		GP8	Green LED on	Bit 4 of Fault Status (Refer to Table 38).
		FAULT	Red LED on	Indicates fault in panel (Refer to Table 38).
		INIT	Red LED on	RT board has been reset and is loading FPGAs; off after FPGA code is loaded.
	RTP Control Panel LAN Activity	RUN	Green LED on	Indicates that the Real Time Processor is executing code.
		XMT	Green LED on	Indicates data is being sent to the Control panel LAN from the RT Processor.
		RCV	Green LED on	Indicates data is being received from the Control panel LAN.
		LINK	Green LED on	RT Processor Ethernet controller recognizes connection to Control Panel LAN.
	POWER SUPPLIES	COLN	Green LED on	Indicates two or more clients have sent packets that overlap and must be resent.
		+3.3V, +5V, +12V	Green LED on	Designated power present.
	MENU PROCESSOR ACTIVITY	SCSI	Green LED on	Indicates activity on the SCSI bus of the Menu (NT) processor.
HARD DRIVE		Green LED on	Indicates that the hard drive for the Menu processor (NT) is being accessed.	
RT Processor (left)	N/A	D6	Red LED on	Indicates RT Processor is in Run mode.
NT Processor (right)	N/A	D6	Red LED on	Indicates NT Processor is in Run mode.

When the red FAULT LED on the Real Time Processor Interface board is on, General Purpose LEDs GP1, GP4, GP6 and GP8, can be read in binary code to determine the type of fault occurring (Table 38). Push the RTP Reset button (S3) first, then note the type of fault if it reoccurs.

Table 38. General Purpose LED Fault Description

Binary Code	Fault LED State	Fault Description
0000	All LEDs off	No fault
0001	GP1 on	Ethernet controller failed to initialize.
0010	GP4 on	One of the PIC microprocessors failed to synchronize.
0011	GP1, GP4 on	Invalid PIC board ID
0100	GP6 on	Invalid PIC processor number
0101	GP1, GP6 on	Invalid PIC board revision
0111	GP1, GP4, GP6 on	PIC board version information not received.

Figure 212. 4-M/E Main Panel Interior Circuit Boards

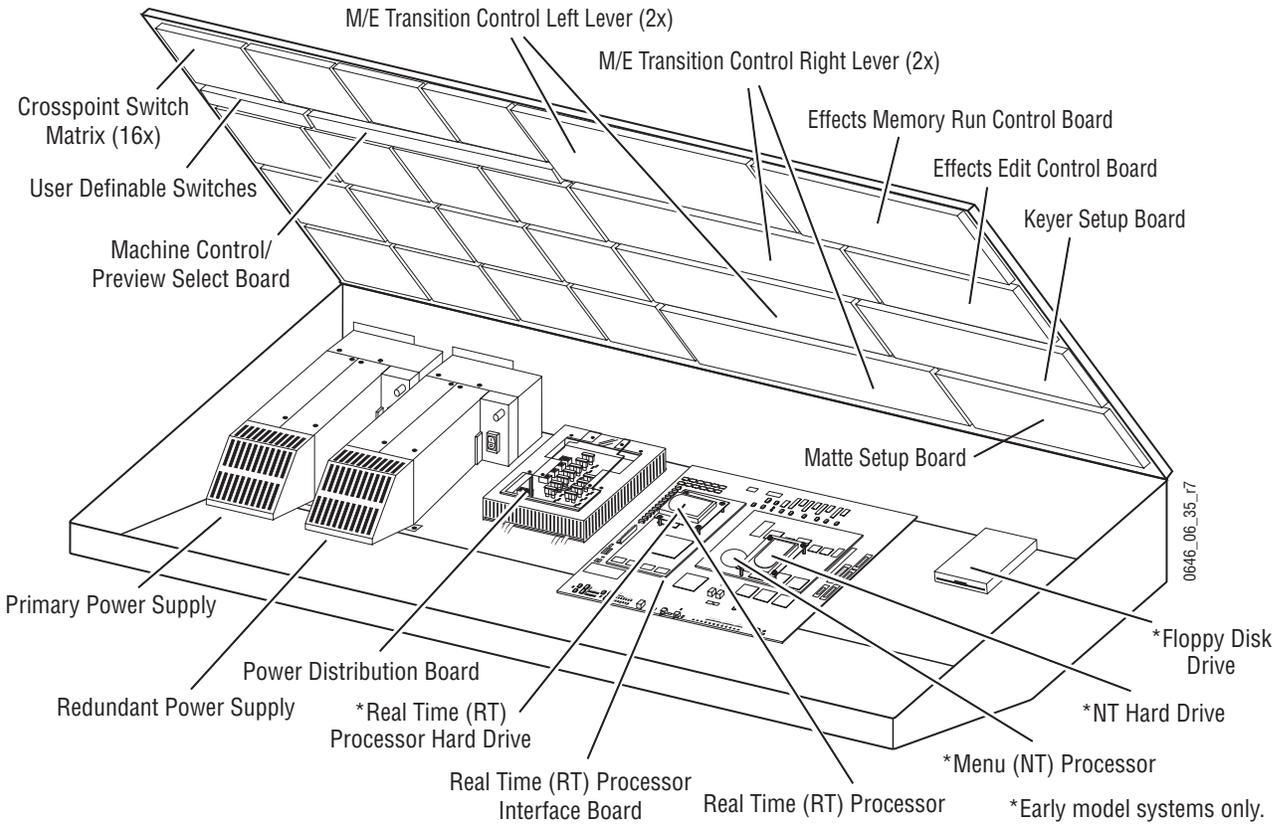


Figure 213. 2-M/E Main Panel Interior Circuit Boards

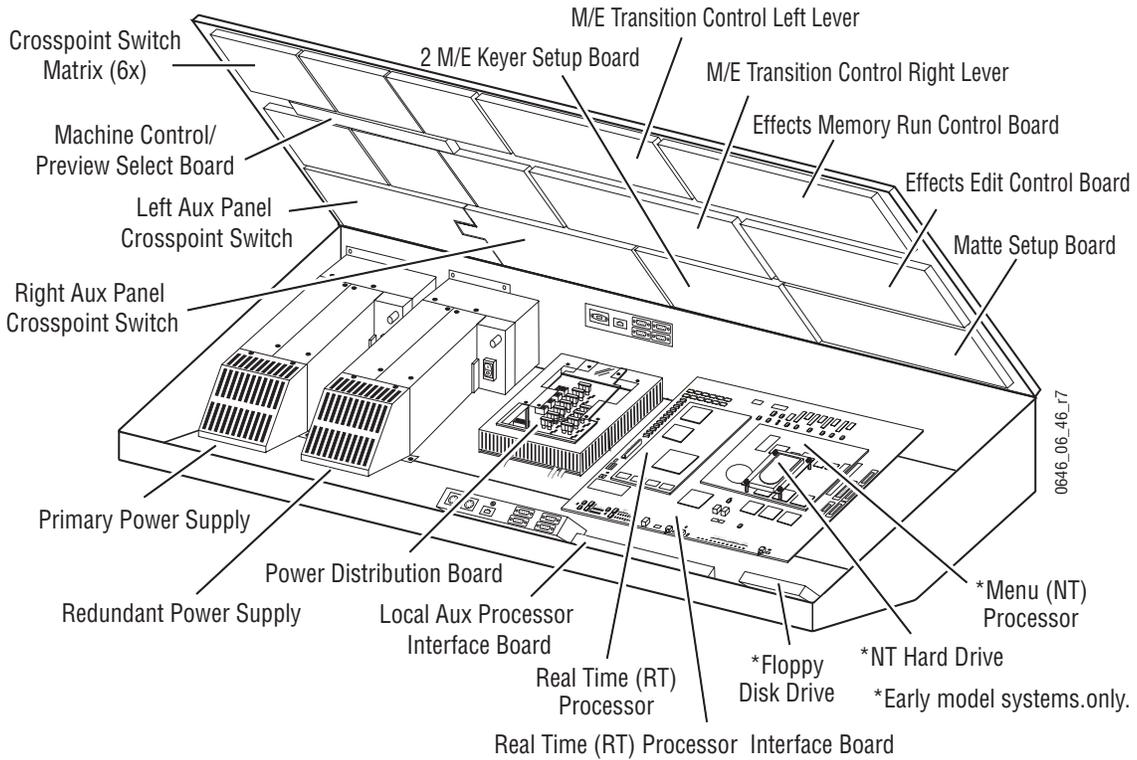


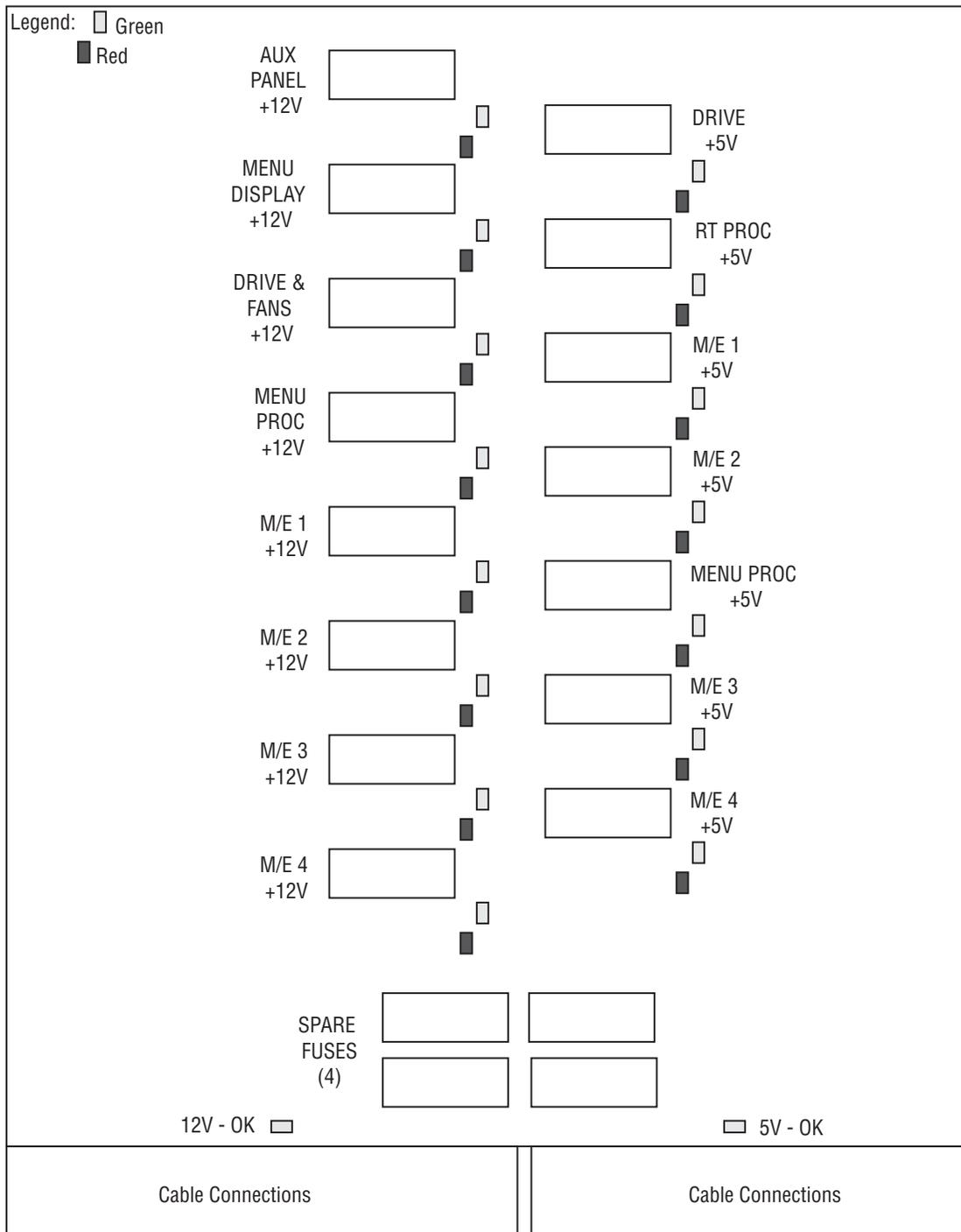
Table 39. Main Panel Circuit Board Status Indicators

Board Name	Indicator Name	LED State	Status Meaning/Action
Crosspoint Switch Matrix Board	+5V	Green LED on	+5V present from Power Distribution board.
	+12V	Green LED on	+12V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Activity	Green LED on	Onboard PIC microcontroller is executing code.
	Fault	Red LED on	Fault found on board by RT Processor.
M/E Transition Control Right Lever Board	+5V	Green LED on	+5V present from Power Distribution board.
	+12V	Green LED on	+12V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Activity (3)	Green LEDs on	Onboard PIC microcontrollers are executing code.
	Fault	Red LED on	Fault found on board by RT Processor.
M/E Transition Control Left Lever Board	+5V	Green LED on	+5V present from Power Distribution board.
	+12V	Green LED on	+12V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Activity (2)	Green LEDs on	Onboard PIC micro controllers are executing code.
	Fault	Red LED on	Fault found on board by RT Processor.
Matte Setup Board	+5V	Green LED on	+5V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Activity	Green LEDs on	Onboard PIC microcontroller is executing code.
	Fault	Red LED on	Fault found on board by RT Processor.
Keyer Setup Board 4-M/E	+5V	Green LED on	+5V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Activity (2)	Green LEDs on	Onboard PIC microcontrollers are executing code.
	Fault	Red LED on	Fault found on board by RT Processor.
Keyer Setup Board 2-M/E	+5V	Green LED on	+5V present from Power Distribution board.
	+12V	Green LED on	+12V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Activity (2)	Green LEDs on	Onboard PIC microcontrollers are executing code.
	Fault	Red LED on	Fault found on board by RT Processor.
Effect Edit Transform Control Board	+5V	Green LED on	+5V present from Power Distribution board.
	+12V	Green LED on	+12V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Activity (2)	Green LEDs on	Onboard PIC microcontrollers are executing code.
	Fault	Red LED on	Fault found on board by RT Processor.
Effect Memory Run Control Board	+5V	Green LED on	+5V present from Power Distribution board.
	+12V	Green LED on	+12V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Activity (2)	Green LEDs on	Onboard PIC microcontrollers are executing code.
	Fault	Red LED on	Fault found on board by RT Processor.

Table 39. Main Panel Circuit Board Status Indicators - (continued)

Board Name	Indicator Name	LED State	Status Meaning/Action
Machine Control/Preview Select Switch Board	+5V	Green LED on	+5V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Activity	Green LEDs on	Onboard PIC microcontroller is executing code.
	Fault	Red LED on	Fault found on board by RT Processor.
Local Aux Processor Interface Board (2-M/E panel)	+3.3V, +5V, +12V	Green LED on	Indicates that designated power is present
	VBL	Green LED on	Voltage for Source Name Display Backlights present.
	Run	Green LED on	PIC microcontroller is executing code.
	Init	Red LED on	Board has been reset and is loading FPGAs; off after FPGA code is loaded.
	Fault	Red LED on	Indicates fault in panel.
Machine Control/Preview Select Board	+5V	Green LED on	+5V present from Power Distribution board.
	+12V	Green LED on	+12V present from Power Distribution board.
	Host	Green LED on	Indicates RT Processor is communicating with board.
	Act(ivity)	Green LEDs on	Onboard PIC microcontroller is executing code.
	Fault	Red LED on	Fault found on board by RT Processor.
Power Distribution Board	Refer to Table 40 on page 305		

Figure 214. Main Panel Power Distribution Board Fuse and Status Indicators



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Table 40. Main Panel Power Distribution Board Fuse Table

Power Designations	Board 671494900 Fuse # and Fuse Value		Board 671494901 Fuse # and Fuse Value		Indicator	Status Meaning
	Fuse #	Fuse Value	Fuse #	Fuse Value		
AUX PANEL +12V	F21	10A 32V Fast	F1	7.5A 32V Fast	D34 Green LED on	+12V to Aux panel present.
					DS21 Red LED on	+12V to Aux panel absent.
MENU DISPLAY +12V	F22	3A 32V Fast	F3	7.5A 32V Fast	D36 Green LED on	+12V to Menu Display present.
					DS22 Red LED on	+12V to Menu Display absent.
DRIVE & FANS +12V	F23	7.5A 32V Fast	F5	7.5A 32V Fast	D38 Green LED on	+12V to Main panel power supply fans and floppy disk present.
					DS23 Red LED on	+12V to Main panel power supply fans and floppy disk absent.
MENU PROC +12V	F24	3A 32V Fast	F7	3A 32V Fast	D40 Green LED on	+12V to 5811 Menu panel Processor on RT Processor Interface Board present.
					DS24 Red LED on	+12V to 5811 Menu panel Processor on RT Processor Interface Board absent.
M/E 1 +12V	F25	7.5A 32V Fast	F9	7.5A 32V Fast	D42 Green LED on	+12V to M/E 1 control panel boards present.
					DS25 Red LED on	+12V to M/E 1 control panel boards absent.
M/E 2 +12V	F26	7.5A 32V Fast	F11	7.5A 32V Fast	D44 Green LED on	+12V to M/E 2 control panel boards present.
					DS26 Red LED on	+12V to M/E 2 control panel boards absent.
M/E 3 +12V	F27	7.5A 32V Fast	F13	7.5A 32V Fast	D46 Green LED on	+12V to M/E 3 control panel boards present.
					DS27 Red LED on	+12V to M/E 3 control panel boards absent.
M/E 4 +12V	F28	7.5A 32V Fast	F15	7.5A 32V Fast	D48 Green LED on	+12V to M/E 4 control panel boards present.
					DS28 Red LED on	+12V to M/E 4 control panel boards absent.
DRIVE +5V	F11	3A 32V Fast	F2	3A 32V Fast	D35 Green LED on	+5V to Main panel floppy disk drive present.
					DS11 Red LED on	+5V to Main panel floppy disk drive absent.
RT PROC +5V	F12	25A 32V Fast	F4	25A 32V Fast	D37 Green LED on	+5V to 2111 Real Time Processor on RT Processor Interface present.
					DS12 Red LED on	+5V to 2111 Real Time Processor on RT Processor Interface absent.
M/E 1	F14	7.5A 32V Fast	F6	7.5A 32V Fast	D41 Green LED on	+5V to M/E 1 control panel boards present.
					DS14 Red LED on	+5V to M/E 1 control panel boards absent.
M/E 2 +5V	F15	7.5A 32V Fast	F8	7.5A 32V Fast	D43 Green LED on	+5V to M/E 2 control panel boards present.
					DS15 Red LED on	+5V to M/E 2 control panel boards absent.
MENU PROC +5V	F13	7.5A 32V Fast	F10	7.5A 32V Fast	D39 Green LED on	+5V to 5811 Menu processor on RT Processor Interface present.
					DS13 Red LED on	+5V to 5811 Menu processor on RT Processor Interface absent.
M/E 3 +5V	F16	7.5A 32V Fast	F12	7.5A 32V Fast	D45 Green LED on	+5V to M/E 3 control panel boards present.
					DS16 Red LED on	+5V to M/E 3 control panel boards absent.
M/E 4 +5V	F17	7.5A 32V Fast	F14	7.5A 32V Fast	D47 Green LED on	+5V to M/E 4 control panel boards present.
					DS17 Red LED on	+5V to M/E 4 control panel boards absent.

Table 40. Main Panel Power Distribution Board Fuse Table - (continued)

Power Designations	Board 671494900 Fuse # and Fuse Value		Board 671494901 Fuse # and Fuse Value		Indicator	Status Meaning
	Fuse #	Fuse Value	Fuse #	Fuse Value		
SPARE FUSES	F32	10A 32V Fast	F16	7.5A 32V Fast	N/A	N/A
	F31	3A 32V Fast	F18	3A 32V Fast	N/A	N/A
	F33	7.5A 32V Fast	F17	7.5A 32V Fast	N/A	N/A
	F34	25A 32V Fast	F19	25A 32V Fast	N/A	N/A
12V - OK	Primary or Redundant	Main AC 3AG10A Spare Supplied	Primary or Redundant	Main AC 3AG10A Spare Supplied	DS2 Green LED on	+12V from main power supplies present.
5V - OK	Primary or Redundant	Main AC 3AG10A Spare Supplied	Primary or Redundant	Main AC 3AG10A Spare Supplied	DS1 Green LED on	+5V from main power supplies present.

Main Panel Diagnostics

The Main panel diagnostic routine tests the Main panel knobs, lamps (function and tally states), switches, displays, and lever arm and joystick functionality and calibration. The diagnostic routine is accessed using a serial connection from a PC or dumb terminal to the Panel Diagnostic port on the rear of the Main panel. The diagnostic routine is then run with a terminal emulation program (HyperTerminal).

Refer to [Table 41](#) for an overview of each diagnostic test available, the function of each test and how the test is run. Diagnostic tests are provided for testing by row — First Row (M/E 1), Second Row (M/E 2), Third Row (M/E 3), Fourth Row (M/E 4) and Machine Control and Preview Board — or by individual pushbutton.

Each diagnostic routine gives step-by-step instructions and results as the tests are run. Follow the prompts on the screen to guide you through each test.

Table 41. Main Panel Diagnostics Overview

Test Name	Test Function	Test Procedure
Button Diagnostic	Tests groups of pushbuttons for functionality by circuit board in selected M/E.	Lights and latches a group of pushbuttons to test associated switch. Select each pushbutton to turn it off.
Calibration	Provides individual calibration routines for joystick and individual lever arms.	Move joystick to each axis (X, Y and Z) and press button on top of joystick to calibrate. Move each lever arm to one limit and press Auto Trans pushbutton. Repeat for other limit.
Intermittent Button Test	Checks low/high/off tally status of any individual pushbutton.	Push any pushbutton anywhere on panel to light in low tally, push again to test high tally and again to turn off.
Joystick Test	Tests joystick functionality in M/E Effects Edit/Transform Control circuitry.	Move joystick in all three directions (X, Y and Z axis). Test will report levels and pass/fail status.
Knob Test	Tests functionality of knobs in selected M/E.	Move each knob slowly through complete rotation. Test will report pass/fail status.
Lamp Test	Test groups of pushbuttons for high and low tally functionality in selected M/E.	Lights and latches a group of pushbuttons in high tally. Push space bar to change all to low tally. Push space bar to turn all off.
LED Test	Tests each LED readout in selected M/E.	Observe scrolling numerals on display.
Lever Arm Test	Tests lever arm functionality in selected M/E.	Move lever arm to both limits, test will report levels and pass/fail status.
Pushbutton Test	Test lamp status of any individual pushbutton.	Push any pushbutton to test light function (will not latch).
Source Name Display Test	Tests all functions on each Source Display installed in selected M/E.	Runs routine to test Source Display. Observe display and after each test segment, press space bar/enter to move to next segment.

Connecting to the Main Panel Diagnostics Port

To connect to the Main panel Diagnostic port:

1. Connect a serial port from a PC or dumb terminal to the Panel Diagnostic port (Male DB-9 connector) with a null modem cable (pins 2 and 3 crossed). The pinouts of a typical null modem cable are listed in [Table 42](#). Not Used in the Function column means the pins are not physically being used and don't need to be connected.

Table 42. Typical 9-Pin Null Modem Cable Pinout

DB-9	Signal Name	Function
1	DCD	Not Used
2	TXD	Transmit
3	RXD	Receive
4	DTR	Not Used
5	GND	Ground
6	DSR	Not Used
7	RTS	Not Used
8	CTS	Not Used

2. On the PC, in the **Start** menu, select **Programs/Accessories/HyperTerminal**. In HyperTerminal, select **Properties** under the **File** pull-down. Set the PC communication port you wish to use under **Connect using**, then select **Configure** to bring up the communication settings screen. Set the communication values to those listed in [Table 43](#).

Table 43. Panel Diagnostic Port Settings

Baud Rate	38.4 kbps
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

3. Select the ASCII Setup box in **Settings**, and under **ASCII Setup**, check the box for Echo typed characters locally (**Local Echo - ON**). This enables the letters you type to display on the screen.
4. Select **VT100 Emulation** from the pull-down menu under **Settings**.
5. Open the Main panel lid and verify that the **BOOT** (S1) switch ([Figure 211](#)) on the Real Time (RT) Processor Interface board is set to position 0 (zero) for a 4-M/E or position 8 for a 2-M/E and press the RTP Reset button (S3) ([Figure 211](#)) to initialize the diagnostics routine.

Running Main Panel Diagnostics

1. The Diagnostics User Interface menu will appear on the HyperTerminal screen after the RT Processor Interface board is reset in the panel with the following selections:

B Begin Diagnostics

M Menu Display Control

Q Quit Diagnostics

2. Press **B** and **Enter** on your keyboard to begin the diagnostics. Select the letter or number of the test to run and press **Enter**.

Within the routines, press the Space Bar and press **Enter** to continue. Press the **esc** key and then press **Enter** to exit a diagnostic. Use the **X** key to move up in the menu structure in any of the routines.

[Table 44](#) gives the top level diagnostic menu structure for the Main panel tests.

3. When finished with the diagnostic tests, press **Q** to quit.
4. If the **BOOT** switch (S1) ([Figure 211](#)) on the Real Time (RT) Processor Interface board was set to 8 for a 2-M/E, set it back to position 0 (zero).

5. Remove the null modem cable from the diagnostic port and press the Main panel Reset button (S3) on the RT Processor Interface board to resume operation.

Table 44. Main Panel Diagnostics Menus

Select Control Panel Row for Testing	Select Boards/Device to Test	Select Device Menu
F First Row (M/E 1)	C All Crosspoint boards on ME Row 1	T Button Diagnostic L Lamp Test S Source Name Display Test X Up one menu level
	T Transition Control board on ME Row 1	T Button Diagnostic L Lamp Test E LED Test R Lever Arm Test X Up One Menu Level
	E Matte Setup Sub Panel Board	T Button Diagnostic L Lamp Test K Knob Test X Up One Menu Level
S Second Row (M/E 2)	C All Crosspoint boards on ME Row 2	T Button Diagnostic L Lamp Test S Source Name Display Test X Up one menu level
	T Transition Control Bd on ME Row 2	T Button Diagnostic L Lamp Test E LED Test R Lever Arm Test X Up One Menu Level
	E Keyer Setup Sub Panel Board	T Button Diagnostic L Lamp Test K Knob Test X Up One Menu Level
T Third Row (M/E 3)	C All Crosspoint boards on ME Row 3	T Button Diagnostic L Lamp Test S Source Name Display Test X Up one menu level
	T Transition Control Board on ME Row 3	T Button Diagnostic L Lamp Test E LED Test R Lever Arm Test X Up One Menu Level
	E Effects Edit/Transform Control Board	T Button Diagnostic L Lamp Test J Joystick Test X Up One Menu Level

Table 44. Main Panel Diagnostics Menus - (continued)

Select Control Panel Row for Testing	Select Boards/Device to Test	Select Device Menu
O Fourth Row (M/E 4)	C All Crosspoint boards on ME Row 4	T Button Diagnostic L Lamp Test S Source Name Display Test X Up one menu level
	T Transition Control Board on ME Row 4	T Button Diagnostic L Lamp Test E LED Test R Lever Arm Test X Up One Menu Level
	E Effects Memory/Run Control Board	T Button Diagnostic L Lamp Test E LED Test R Lever Arm Test X Up One Menu Level
M Machine Control & Preview Board		T Button Diagnostic L Lamp Test E LED Test X Up One Menu Level
I Intermittent Button Test	Test any individual pushbutton.	Press Q to quit.
P Pushbutton Test	Test any individual pushbutton.	Press Q to quit.
C Communications Port Tests	RT Panel Com port tests	C Com 1 D Com 2
L Calibration	L Lever Arm Calibration	1 ME 1 Transition Control lever arm 2 ME 2 Transition Control lever arm 3 ME 3 Transition control lever arm 4 ME 4 Transition control lever arm 5 Effects Run lever arm
	J Joystick Calibration	Move joystick to all extremes, then press joystick button. Test reports joystick calibration values.
	D Display Calibration Data	Displays all calibration values.
	X Up one menu level	Press x to move up one menu level.
U Usage of calibration levels for Lever arm/Joystick tests.	Allows calibration levels for lever arm and joystick to be used for test.	Reports whether currently using calibration/default levels for lever arm/joystick tests. Do you want to use calibration levels? (Y/N).
X Up One Menu Level		Press x to move up one menu level.

24-Crosspoint Remote Aux Panel

Diagnostic Tests

A series of built in diagnostic tests are built into the Remote Aux panel. There are two ways to enter a diagnostic test:

- Setting the rear panel TEST MODE switches to something other than 0 (zero) (see [Table 45](#), column 2).
- Pressing a combination of front panel switches (see [Table 45](#)).

CAUTION Attempting to access test modes not listed in [Table 45](#) may cause the system to malfunction.

Using the Test Mode Switches

The four TEST MODE switches can be set to any of 16 different settings. Not all of these switch settings address user-accessible tests, and some of the settings may cause system malfunction. For normal operation or to activate a test using the front panel buttons, the TEST MODE switches must all be in the OFF position (zero).

[Table 45](#) lists the test numbers and switch positions for the built-in diagnostic tests. The test number is the sum of the numbers of the TEST MODE switches that are ON.

Tests Using the Front Panel Switches

Note For the front panel push-button tests to function, the rear panel TEST MODE switches must all be set to OFF (zero).

Activating a test from the front panel requires simultaneously pressing the M/E 1, M/E 2, M/E 3, PGM, and another push-button, as defined in Column 3 (Fifth Panel Button) of [Table 45](#). The test will be activated for as long as all the buttons are held down.

Table 45. Test Modes

Test Number	Test Mode 1 2 4 8	5th Panel Button	Test
0	0 0 0 0	--	Normal Operation
1	1 0 0 0	SHIFT	Button Lamp — Press button to light lamp
2	0 1 0 0	24	Lamp Walk — Each lamp lights in sequence; Both high and low tally are displayed
3	1 1 0 0	23	Display Controlled/Enabled Buses — Single bus panels: Displays on source buttons (1A on left, then 1B etc.); 3 RU panel: Lights the delegate button for each bus that is enabled
4	0 0 1 0	22	Display Panel Address on Source Button Lamps — Number is binary; LSB on left
5	1 0 1 0	21	Display Panel Type on Source Button Lamps — 1 = 2 RU panel, 2 = 3 RU panel, 3 = 1 RU panel; Number is binary; LSB on left
6	0 1 1 0	20	Display Panel Software Version on Source Button Lamps — Number is binary; LSB on left
7	1 1 1 0	18	Display Joystick Override Input Port on Source Button Lights; Pin 1 on source button 1 ... pin 8 on source button 8
12	0 0 1 1	N/A	Not used with Kalypso system
13	1 0 1 1	N/A	Panel selects only Near side
14	0 1 1 1	N/A	Panel selects only Far side

Menu Panel

The Menu panel has no local status indicators. Proper operation can be noted by the presence of the Windows OS screen or any of the Kalypso menu screens appearing on the Menu panel touch screen display. Check the following steps if experiencing problems.

Basic Functionality Checks

1. Reset all Control panel surfaces by cycling power.
 - a. Cycle Main panel power to perform an overall reset of the control surface system by turning off the primary and redundant (if present) power supplies inside the Main panel.
 - b. Turn power back on to both supplies.
- Note** The Windows OS Processor controlling the Menu panel takes a minute or two to fully boot up.
2. Check the status of DC power to the Menu panel on the Power Distribution board inside the Main panel at the fuse location identified in [Table 40](#).
 3. Check the version of Kalypso software running on the Menu panel by bringing up the Version screen on the Menu panel as described in the steps below. (This also provides a quick check of system communication status with other devices.)

- a. Go to the Home menu and select **Status & Diags**. The Version screen reports the software version running on each device in the Kalypso system (Frame, RT panel, Menu panel, Aux panel, Still Store). This also verifies that the Menu panel is communicating with all Kalypso devices.
 - b. Check that all reported software versions are identical. If one of the software versions is different, reload the correct software version to that device using the Software Installation Procedure in the current version of Kalypso system *Release Notes*.
4. If the Menu panel does not appear to be communicating with other Kalypso devices, check communication as follows:
 - a. Verify the Menu panel IP address on the Facility LAN by exiting the menu display and entering the NT screen.
 - b. Go to **Settings/Control panel/Network** and select the Protocols tab.
 - c. Select **TCP/IP** and then **Properties**.
 - d. Verify the IP address assigned is correct for a device on the Facility LAN and verify the Subnet mask IP address. Exit this function.
 - e. Run the Kalypso Control panel application on the Menu panel.
 - f. Touch the **Eng Setup** pad and select **Misc**.
 - g. Under the Frame selection, make sure the frame Facility LAN IP address is entered correctly.
 5. Verify the LED at the ethernet switch connection to the Facility LAN is active and blinking. Refer to [Local Area Network Troubleshooting on page 326](#) for more detailed information on network troubleshooting.
 6. Make sure no unnecessary software applications have been loaded on the Menu panel NT Processor. Running other applications slows the system down and may interfere with operation.

Original Menu Panel Diagnostics

Note No diagnostics are currently available for the Enhanced Menu panel.

Self-diagnostics are available to test the knobs and pushbuttons on the Original Menu panel. A procedure is also provided to calibrate the touch screen response.

A self-diagnostic for the pushbutton lamps and knobs on the Menu panel can be run on the NT software platform.

To access this diagnostic:

1. On the Menu panel touchscreen, touch the right hand bar at the top of the screen to close the Kalypso program and bring up the NT window.

2. From the NT window, select **My Computer/C:/Program Files/diagnostics**.
3. Open the **diagnostics** folder and find the Diagnostics.exe file.
4. Execute the Diagnostic.exe file to launch the test.
5. Press the **BUTTON TEST** selection to run the pushbutton test on the Menu panel. Press and turn off each illuminated pushbutton until the pop-up menu confirms that all tests have passed.
6. Press **OK** to move to the next test.
7. Press the **KNOB TEST** selection and follow the instructions given on-screen to rotate each knob on the Menu panel. When all of the knobs have been tested and the test is verified as passed, press **EXIT** to close the test dialog window.

If a failure occurs, refer to Field Replaceable Units list in [Appendix B-Field Replaceable Units](#) for replacement parts available for this assembly.

Menu Panel Touch Screen Calibration

The Menu panel touch screen calibration procedure is described in detail on [Menu Panel Display Calibration](#) on page 221.

Local Aux Panel

The Local Aux panel pushbuttons and displays always illuminate when operating properly (no lamp saver or sleep mode). There are no local status indicators. Check the following steps if experiencing problems.

Basic Functionality Checks

1. Reset all Control panel surfaces by cycling power.
 - a. Cycle Main panel power to perform an overall reset of the control surface system by turning off the primary and redundant (if present) power supplies inside the Main panel.
 - b. Turn power back on to both supplies.
2. Check DC power status to the Local Aux panel on the Power Distribution board inside the Main panel at the fuse location identified in [Table 40](#). (A separate UPS DC power input to the Local Aux panel may be utilized in Emergency Bypass mode.)

If the Local Aux panel has suspected hardware source display or lamp failure, run the Local Aux panel diagnostics routine provided in the [Local Aux Panel Diagnostics](#) section (page 315).

3. Check the version of Kalypso software running on the Local Aux panel by bringing up the Version screen on the Menu panel as described in the steps below. (This also provides a quick check of system communication status with other devices.)
 - a. Select the **Status/Diags** pushbutton on the Menu panel.
 - b. Touch the **Versions** data pad to bring up the software version screen. The Version screen should report the software version running on each device in the Kalypso system (Frame, RT panel, Menu panel and Aux panel).
 - c. Check that the Local Aux panel software is present and the version matches the other Kalypso devices. If not, reload the correct software version to the Local Aux panel using the Software Installation Procedure in the current Kalypso system *Release Notes*.
4. If the Local Aux panel is not switching crosspoints or video or does not appear to be communicating with other Kalypso devices, check the communications configuration at the Local Aux panel. The Local Aux panel must have the following IP addresses set locally for proper communication:
 - Local Aux panel IP address (default: 192.168.0.27) on the Facility LAN.
 - Frame IP address (default: 192.168.0.20) on the Facility LAN.
 - Menu panel IP address (default: 192.168.0.25) on the Facility LAN.

Refer to [Changing 4-M/E and 2-M/E Main Panel IP Address on page 155](#) for instructions on setting or checking these IP addresses.
5. Verify the LED at the ethernet switch connection to the Facility LAN is active and blinking. Refer to the Local Area Network (LAN) Troubleshooting section on [page 326](#) for more detailed information on network troubleshooting.

Local Aux Panel Diagnostics

The Local Aux panel diagnostic routine tests the lamps (function and tally states), switches, and source name displays on the panel. The diagnostic routine is accessed using a serial connection from a PC or dumb terminal to the Local Aux panel Diagnostic port on the rear of the panel. The diagnostic routine is then run with a terminal emulation program (e.g, HyperTerminal).

Refer to [Table 46](#) for an overview of each diagnostic test available, the function of each test and how the test is run. Diagnostic tests are provided for testing by circuit board or by individual pushbutton.

Each diagnostic routine gives step-by-step instructions and results as the tests are run. Follow the prompts on screen to guide you through each test.

Table 46. Local Aux Panel Diagnostics Overview

Diagnostic Test Name	Test Function	Test Procedure
Button Diagnostic	Tests groups of pushbuttons for functionality by circuit board (Aux panel Crosspoint Switch Board Right and Left).	Lights and latches a group of pushbuttons to test associated switch. Select each pushbutton to turn it off.
Intermittent Button Test	Checks low/high/off tally status of any individual pushbutton.	Push any pushbutton anywhere on panel to light in low tally, push again to test high tally and again to turn off.
Lamp Test	Test groups of pushbuttons for high and low tally functionality by circuit board.	Lights and latches a group of pushbuttons in high tally. Push space bar to change all to low tally. Push space bar to turn all off.
Source Name Display Test	Tests all functions on each Source Display installed by circuit board.	Runs routine to test Source Display. Observe display and after each test segment, press space bar/enter to move to next segment.

Connecting to the Local Aux Panel Diagnostic Port

To connect to the Local Aux panel Diagnostic port:

1. Connect a serial port from the PC or dumb terminal to the Diagnostic port (Female DB-9 connector) with a null modem cable (pins 2 and 3 crossed). The pinouts of a typical null modem cable are listed in [Table 42](#).
2. On the PC, in the **Start** menu, select **Programs/Accessories/HyperTerminal**. In HyperTerminal, select **Properties** under the **File** pull-down. Set the PC communication port you wish to use under **Connect using**, then select **Configure** to bring up the communication settings screen. Set the communication values to those listed in [Table 43](#).
3. Select the ASCII Setup box in **Settings**, and under **ASCII Setup**, check the box for Echo typed characters locally (**Local Echo - ON**).
4. Select **VT100 Emulation** from the pull-down menu under **Settings**.
5. On the rear of the Local Aux panel, near the Diagnostic connector, locate and press the Reset button to start the diagnostic routine.

Running Local Aux Panel Diagnostics

1. The Diagnostics User Interface menu will appear on the HyperTerminal screen after the Local Aux panel processor is reset with the following selections:

B Begin Diagnostics

M Menu Display Control

Q Quit Diagnostics

2. Press **B** and **Enter** on your keyboard to begin diagnostics. Select the letter or number of the test you want to run and press **Enter**.

Within the routines, press the **esc** key then **Enter** to exit a diagnostic. Use the **X** key to move up in the menu structure in any of the routines.

Table 47 provides the top level diagnostic menu structure for the Local Aux panel tests.

3. When finished with the diagnostic tests, press **Q** to quit.
4. Remove the null modem cable from the diagnostic port and press the Local Aux panel Reset button near the Diagnostic connector to resume operation.

Table 47. Local Aux Panel Diagnostic Menu

Select Control Panel Row for Testing	Select Boards/Device to Test
I Intermittent Button Test	Test any individual pushbutton.
P PCI Test Menu	N/A
D Display Test Menu	N/A
R Right Aux panel Crosspoint Switch Board	T Button Diagnostic L Lamp Test S Source Name Display Test X Up one menu level
B Left Aux panel Crosspoint Switch Board	T Button Diagnostic L Lamp Test S Source Name Display Test X Up one menu level
C Communication port tests	R Router emergency by pass port test D Com 2 Test E Ethernet Test F Control Frame emergency by pass test x Up one menu level

Video Processor Frame Troubleshooting

This section focuses primarily on problems with distorted or missing video signals.

User-Installed Alarms

To alert the user to certain status conditions, the Kalypso Video Production Center provides a number of specific status reporting functions via the Video Processor frame for use with a customer supplied alarm system. Refer to [Section 6-Functional Description](#) for details on alarm operation and installation. Some of the status conditions may also be read from the LED indicators on the front of the Sync Generator module, as shown in [Table 48](#).

The alarm reporting functions include:

- Fan Underspeed — Tachometer readings from the Fan Drawer in the frame are reported and activate an alarm when the fan speed is below 900 RPM.
- Frame Power Supplies — Outputs from the frame power supplies report power present or fail conditions.
- Over Temperature — A frame-mounted thermostatically controlled switch will automatically shut down the frame power supplies when the frame temperature exceeds approximately 75° C.
- Fan DC Power switch on/off — When the DC Power switch on the Fan Drawer is sensed as off, the frame power supplies will shut down.

Basic Functionality Checks

Begin troubleshooting by performing the basic functionality checks below.

1. Open the front door of the Video Processor frame (see [Figure 55 on page 76](#)) and verify that none of the Sync Generator module red alarm indicator LEDs (FAN FAULT, PWR SPLY FAULT and ALARM) are illuminated. If any of the alarm LEDs are illuminated, refer to [Table 48](#) for information on the indicator meaning and action to take.
2. Check all frame modules for any illuminated red fault LEDs. If a red fault LED is illuminated, reset the Sync Generator module and note if the fault light returns. If any of the fault LEDs remain illuminated, refer to [Table 48](#) for information on the indicator meaning and action to take.
3. Verify that the frame is communicating with the Facility LAN by checking for blinking green TX and RX Facility LAN (FAC) LEDs on the Control module.

4. Make sure the Reference In module (see [Figure 56 on page 77](#)) is present and seated securely. The Reference In module must be installed and functioning for the Video Processor frame to work properly.

Note The Reference In module also contains ICs (U8 and U10) which store the personality and IP addressing information for the entire Kalypso system. If this module has been replaced, make sure the ICs have been moved to the replacement module as explained in the instructions silk-screened on the circuit board.

5. Verify that there are two power supplies functioning in the Video Processor Power Supply frame at all times, each with the following indicators:
 - ACG LED on (AC line voltage is present).
 - DCG LED on (DC output to Video Processor frame is present).
 - 20-100% indicators should be reading 20 or 40% if both or all power supply modules are operating and load sharing properly.
6. Check that the Sync Generator module green Analog Reference LED indicators (REF PRES and REF LOCK) above the alarm LEDs are both illuminated, indicating a present and locked analog reference. The analog reference must be connected to the Reference In module and must be terminated properly.
7. Check the frame module status indicators listed in [Table 48](#) to make sure each module in the frame has correct power and communication status. Modules are listed as they reside in the frame from left to right (refer to [Figure 55 on page 76](#)); indicators are listed as they appear on the front of each module from top to bottom.

Table 48. Video Processor Frame Module Status Indicators

Slot	Module	Indicator		LED Status	Status Meaning/Action
		Group	Name		
A1	Control Proces- sor module	MAIN ACTIVITY	FAULT D0 - D15	Not used	N/A
		FAC (Facility LAN)	Tx	Green LED on	High bit of data is being transferred from the CPU to Facility LAN port.
			Rx	Green LED on	High bit of data is being received by the CPU from the Facility LAN port.
			LINK	Green LED on	Ethernet controller recognizes Facility LAN connection.
			10	Green LED on	Indicates ethernet transfer from Facility LAN is in10BaseT mode.
			100	Green LED on	Indicates ethernet transfer from Facility LAN is in100BaseT mode.
			COLDT	Red LED on	Collision detect on Facility LAN port.
			+5V, +3.3V	Green LED on	Designated power present.
		PANEL	Tx	Green LED on	High bit of data isbeing transferred from the CPU to the Panel LAN port.
			Rx	Green LED on	High bit of data is being received by the CPU from the Panel LAN port.
			LINK	Green LED on	Ethernet controller recognizes Panel LAN connection.
			10	Green LED on	Indicates ethernet transfer from Panel LAN is in 10BaseT mode.
			100	Green LED on	Indicates ethernet transfer from Panel LAN is in 100BaseT mode.
			COLDT	Red LED on	Collision detect on Panel LAN port.
		COM ACTIVITY	Fault	Red LED on	System is initializing and loading FPGAs. LED off when complete.
			D0-D13	Not used	N/A
			D14	Green LED on	Should blink about once a second during normal operation.
			D15	Green LED on	Should blink at a field rate during normal operation.
		SERIAL PORT	Tx1-Tx8 Rx1-Rx8	Green LED on	Indicates either transmit or receive activity from the RS-232 serial port.
		HDLC	Tx1/Rx1 Tx2/Rx2	Green LED on	Indicates either transmit or receive activity from the HDLC port.
		COM 1	Tx	Not used	N/A
			Rx		
			DTR		
			RTS		
		RESET	MAIN	Green LED on	
			COM	Green LED on	Comm CPU is being reset.
			COMIO	Green LED on	Comm CPU is resetting Control I/O module.
			VIDA, VIDB, VIDC	Green LED on	Comm CPU is resetting other modules in the system.
			LOBAT	Red LED on	TBD

Table 48. Video Processor Frame Module Status Indicators - (continued)

Slot	Module	Indicator		LED Status	Status Meaning/Action
		Group	Name		
A5	Still Store module	General Purpose	Reset	Red LED on	Board resetting or held in rest by frame CPU.
			Error	Red LED on	Error on the Still Store board.
			LED0	Green LED on	When task that runs at VI is entered.
				Green LED off	When task that runs at VI is exited.
			LED1	Green LED on	When task that runs outside VI is entered.
				Green LED off	When task that runs outside VI is exited.
			LED2		When files are being loaded, toggles for each file.
				Green LED on	When images are being saved to disk.
				Green LED off	When images are no longer being saved to disk.
			LED3, 4, 5, 6		Currently being used for debugging.
		LED7		Toggles every 60 times the VI task is entered.	
		Still Store LAN Status	COLDET	Red LED on	LAN collision detected.
			Tx	Green LED on	LAN transmit data.
			Rx	Green LED on	LAN receive data.
			Link	Green LED on	LAN link.
			100BT	Green LED on	LAN at 100 Mb/s.
			10BT	Green LED on	LAN at 10 Mb/s.
			Spare1	Green LED on	Not used.
			Spare2	Green LED on	Not used.
		Power	+5v	Green LED on	+5 volt supply good.
+3.3V	Green LED on		+3.3 volt supply good.		
+2.5v1	Green LED on		+2.5 volt supply #1 good.		
+2.5v2	Green LED on		+2.5 volt supply #2 good.		
A8 - A10	Crosspoint module	N/A	+5V, +3.3V	Green LED on	Designated power present.
A11 - A14	M/E modules	N/A	+5V, +3.33V, +2.5V	Green LED on	Designated power present.
			RESET	Red LED on	System reset in process.
			ERR	Red LED on	FPGA download in process.
			D1 - 5	Green LED on	TBD
			D6	Green LED on	Blinks continuously when system operating properly.
			D7	Green LED on	Communicating with Host processor.

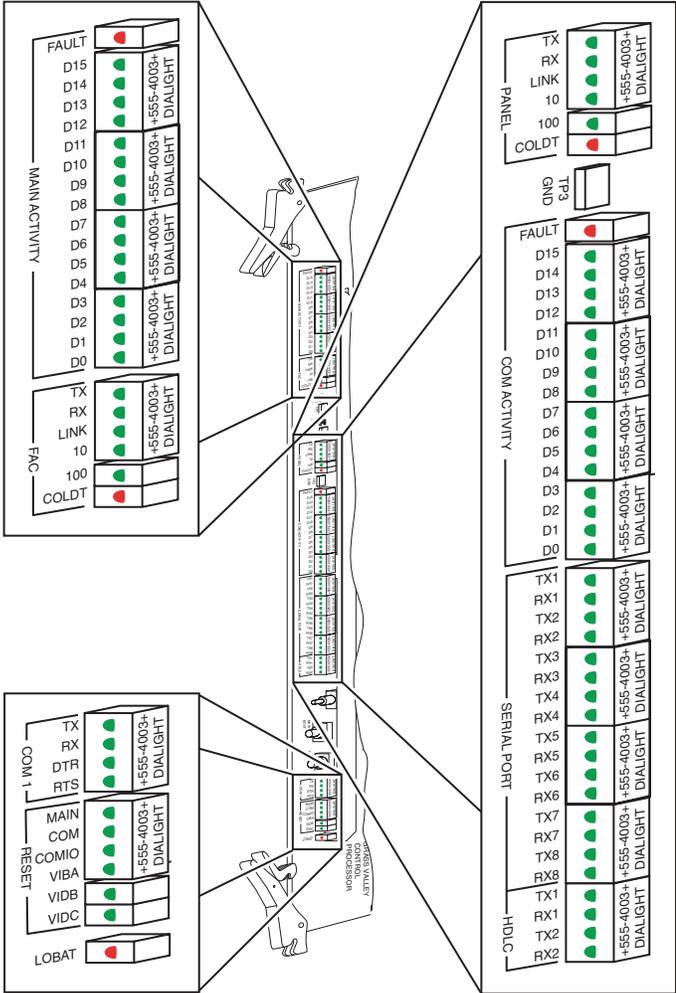
Table 48. Video Processor Frame Module Status Indicators - (continued)

Slot	Module	Indicator		LED Status	Status Meaning/Action
		Group	Name		
A15 - A16	Transform Engine module	N/A	D1 ^a	Green LED on	Top LED of D1 flash indicates Uproc 1 is running.
			D2 ^a	Green LED on	Top LED of D1 flash indicates Uproc 2 is running.
			D3 ^a	Green LED on	Top LED of D1 flash indicates Uproc 3 is running.
			+3.3V, +1.8V	Green LED on	Designated power present. Note that 3.3V must be present before 1.8V indicator is active.
			D6 ^a	Green LED on	Top LED of D6 flash indicates communication from host Processor.
			D7		Not Used
			D8	Red LED on	Reset from host or pushbutton.
			D9		Not Used
			D10	Red LED on	Reset of DSP Uproc 1.
			D11	Red LED on	Reset of DSP Uproc 2.
		D12	Red LED on	Reset of DSP Uproc 3.	
A17	Sync Generator module	N/A	+/-12V, +/-8V, +5V, +3V, +2V	Green LED on	Designated power present. If missing, cycle power by resetting module.
			REF Pres	Green LED on	Analog Reference signal from Reference In module present.
			REF LOCK	Green LED on	Analog Reference is locked.
			FAN FAULT	Red LED on	Frame fan is running below 900 RPM.
			PWR SPLY FAULT	Red LED on	Frame power supply failure. Check power supplies for proper operation.
			ALARM	Red LED on	Frame alarm has been set. Check Reference in DIP switch setting.

^a Transform Engine: D1, D2, D3 and D6 designate a part containing 4 LEDs. Only the top LED is used (as viewed already mounted inside the frame).

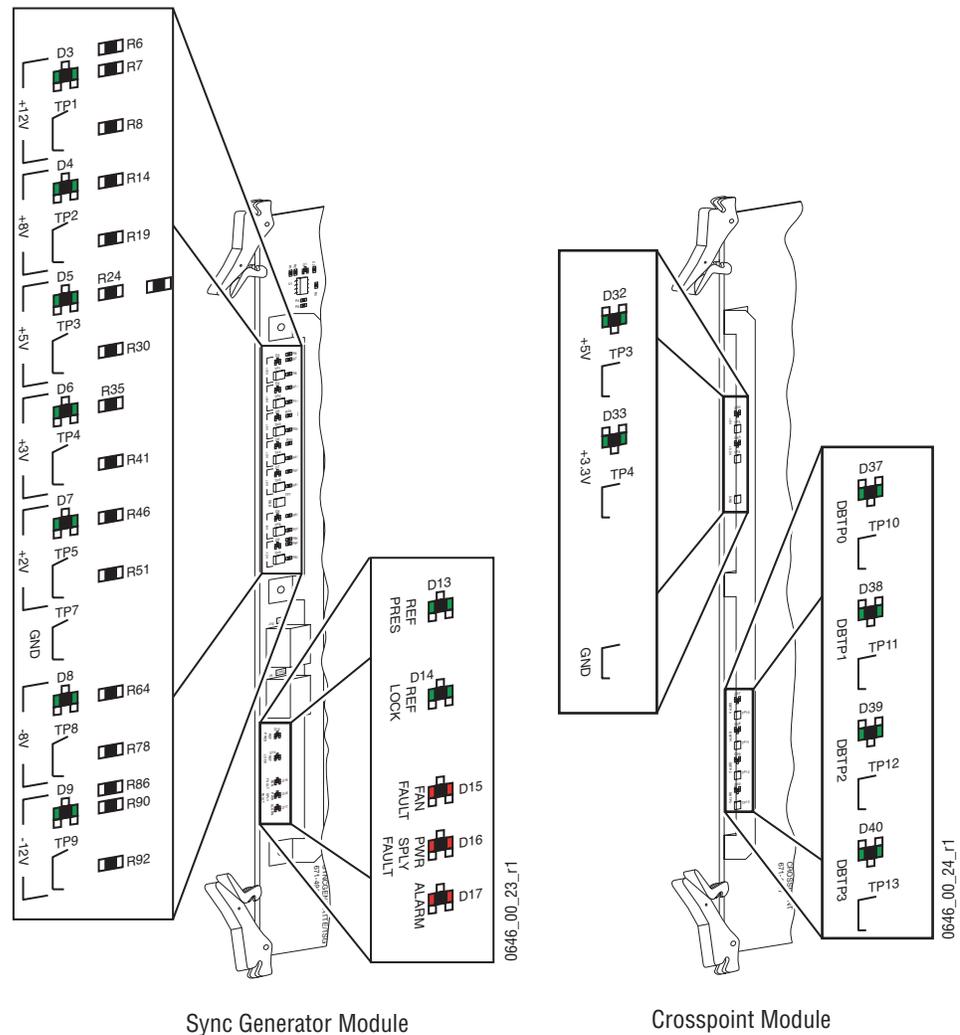
LEDs and Test Points

Figure 215. Control Processor Module LEDs



0646_00_22_r2

Figure 216. Sync Generator and Crosspoint Module LEDs



Video Path Troubleshooting

The video path in the Kalypso Video Processor frame is designed to provide extremely flexible signal routing from input to output. Video paths are configured through software under the Engineering Setup function of the Menu panel during initial installation of the system. Although Engineering Setup is not intended to be changed in the course of operation, verification of signal routing (input to output) is important to troubleshooting loss of, or trouble with, video in the system.

The Kalypso has a set of internally generated test signals to help with video troubleshooting. This test signal is dedicated to Crosspoint 100 on Source Button 1 (shifted). The test signal output is hard-wired to Output 40 when Output module #5 is installed. Use this signal to test input and output mapping and video functionality.

Use the steps below for general guidelines in troubleshooting the video path.

Determine Type of Problem

1. Determine whether the video problem affects one M/E only or is common throughout the entire system. Try the same crosspoint or operation on other M/Es. If confined to one M/E, carefully swap M/E modules to determine if the problem is with the M/E module.
2. Determine whether the video problem is common to one crosspoint. Crosspoint modules may be swapped for troubleshooting purposes.

Verify Input Video

1. If input video is missing, begin troubleshooting by verifying the Source Definition configuration for each Crosspoint (see [Source Definition on page 169](#)).
2. Use the internal test signal (dedicated to Crosspoint 100) on Source Button 1 (shifted) on each M/E to test crosspoint and re-entry functionality throughout the system.
3. Use the hardwired test signal output on Output 40 of Output module #5 and loop the test signal to any input for testing.

Verify Video Output Mapping

1. If video is missing on an output, first verify Output Mapping configuration (see [Output Assignments on page 176](#)).
2. Assign the internal test signal to the missing output in the Config-Outputs menu for test purposes.

Local Area Network Troubleshooting

The Kalypso Video Production Center is designed to utilize networking to communicate with other devices. For a detailed overview of the Control panel and Facility LAN requirements, refer to [LAN Requirements on page 129](#).

The following procedure assumes that the system has been up and running after installation. Follow the basic guidelines below for troubleshooting networking problems.

Verify Physical Layer

Verify the physical layer (basic electrical and mechanical) is functioning properly.

- Trace the network cables to the source if possible and check functionality.
- Check that run lights at all network switch locations are on and blinking.
- Check cabling for loose connections.

Verify that any changes made to the physical LAN since installation — such as re-wiring — have been done properly.

Verify IP Addressing

Refer to [IP Addresses on page 148](#) for a detailed description of the IP addressing requirements of the system. Note that all Kalypso devices requiring an IP address also have requirements for knowing the other device's IP addresses that they communicate with. This is a key factor in troubleshooting a system.

The IP address for a device must be configured at the device. There are several different methods of setting the IP addresses.

Verify IP addressing for other devices that have may been added to the network, and any changes in the network itself (merged with a larger network for example).

IP addresses are stored in an integrated circuit on the Reference In module (see [Figure 56 on page 77](#)). Make sure this module is functioning properly and if it has been replaced, that the ICs containing the IP addressing information (U8 and U10) have been moved as detailed on the Reference In circuit board's silk-screen.

Ping Network Devices

Use the **ping** command to ping the device itself for verification then the other remote network devices. Pinging a remote device checks communication to that device but does not verify that an application is running on the remote device.

To issue the **ping** command:

1. If the Kalypso application is currently running on the Menu panel, exit the application by touching the upper right message area of the Kalypso menu.
2. When the NT desktop appears, select **Start/Run**, then type:

```
ping [IP address]
```

and press the **Enter** key.

If the device doesn't respond, simultaneously press the **ESC** and **C** keys to exit the ping test.

NetCentral Support

The NetCentral system is a suite of software modules, residing on one or more centrally located computers. These modules work together to monitor and report the operational status of devices (broadcast equipment such as a Kalypso system or a modular frame, etc.), using Simple Network Management Protocol (SNMP).

The Kalypso NetCentral option provides support for NetCentral (via a NetCentral agent) but does not include the actual NetCentral product, which is available separately. Once the Kalypso NetCentral agent is installed and configured, the Kalypso system can be monitored by NetCentral, or by any SNMP manager.

NetCentral Capabilities

When the NetCentral option is installed and configured, the Kalypso system automatically sends trap messages to the NetCentral Monitoring Station, reporting Kalypso system status. The NetCentral system can be configured to listen to and respond to these trap messages. Each trap message is assigned a severity status and a response. The responses can range from log the status to sound an alarm, or send E-mail, or call someone on the phone or pager.

Kalypso trap messages are related to the condition of the Video Processing Frame, the Main Control Panel, and the software. The physical condition of the Power Supplies, the Fans, the Modules, and the overall temperature are

reported. Software is monitored for version match/mismatch status, option status, license status, and operating status. A list of all the SNMP trap messages possible from a Kalypso can be generated and printed at the Monitoring Station.

Kalypso NetCentral Option Installation

Install Agent on Kalypso System

SNMP must be installed on the Kalypso Menu panel before the NetCentral Agent software can be installed. The SNMP is available on the official Microsoft Windows OS CD provided with your system. Use the CD to install SNMP.

Note SNMP messages originating from Grass Valley equipment conform to the SNMPv1 protocol (IETF RFC 1157). These messages can also be trapped by other SNMP management stations.

With SNMP installed, insert the Kalypso 7.5 Software CD into the Kalypso CD drive and select the **NetCentral Agent Configuration Tool** option. The Agent software package installed includes a utility used to configure the installed agent.

Net Central Monitoring Station Configuration

Refer to the separate *NetCentral User Guide* for specific instructions on how to install, configure, and use NetCentral with the Kalypso system.

Functional Description

Introduction

This section provides a functional description of the Kalypso Video Processor frame and control panels, including their respective power supply assemblies. The intent is to provide information adequate to allow maintenance technicians to isolate problems to the frame module level and the Main panel circuit board level.

Video Processor Frame Modules

Hot-pluggable modules are installed in the front and rear bays of the Video Processor frame (Figure 55 and Figure 56). The modules plug into the Midplane Board. The Midplane Board routes video and control signals between modules and provides the 48 V power distribution for all modules. Each module has an off-the-shelf DC-to-DC convertor that takes the 48 V input and outputs +5V, +3.3V, and +2.5V. All frame modules have metal guide pins to prevent errors when inserting modules. In some cases, “like” modules (for example, Effects Send and Output modules) have the same guide key position. “Like” modules can be placed in the wrong slot and no damage occurs. However, the module may not operate correctly.

Table 49. Frame Module Locations

Module Name	Slot #	Location		Standard	Optional
		Front Bay	Rear Bay		
Control	A1 – 4	•		1	N/A
Still Store	A5	•		N/A	1
Crosspoint	A8 – 10	•		3	N/A
Mix/Effects	A11 – 14	•		4	N/A
Transform Engine	A15, 16	•		N/A	2
Sync Generator	A17	•		1	N/A
Control I/O	B1 – 3		•	1	N/A

Table 49. Frame Module Locations - (continued)

Module Name	Slot #	Location		Standard	Optional
		Front Bay	Rear Bay		
Tally	B4, 5		•	1	1
Input	B6 – 10		•	1	4
Effects Send	B11		•	1	N/A
Output	B12 – 16		•	N/A	5
Reference In	B17		•	1	N/A

Video Processor Frame Front Bay Modules

Control Module

Description

This module runs the software that controls the entire system. The comm CPU communicates primarily via the PCI address bus. The PCI interface section converts the PCI bus to a VI data bus and VI address bus, by which data is transferred to all the other modules. The control module controls and monitors all the other modules in the system. All FPGAs in the system are programmed by the comm CPU. Data can also be transferred to external devices from the comm CPU or received by the comm CPU from external devices through the HDLC, UART, RS232, and Ethernet ports on the Control I/O module. The control module also has LEDs that monitor the transfer, receipt, and control of data and resets across the system.

Still Store Module

Description

The Kalypso Still Store is used to save video or video and key in memory for instant recall of stills, graphics, keys, etc. A hard disk is provided on-board for non-volatile storage of stills. The Still Store can simultaneously grab a still and output up to eight video-only stills, four video and key stills, or combinations of video and key stills. The captured images are saved to any of fifty available locations on the Still Store's hard disk. Outputs are internal Kalypso system sources, which can be mapped to any desired Source Select buttons.

The Kalypso Still Store hardware consists of a single module. New Kalypso systems shipping with this option already have the module installed.

Features

Supported Still Store module features are:

- Eight outputs that can be used independently or paired for video and key,
- Fifty instant access non-volatile stills,
- Full frame grab of video or video and key,
- Display entire frame, or each field with either field interpolation or replication,
- Grabbed images saved to hard disk (non-volatile image storage) on the Still Store module,
- Preview bus shows Still Store output #8,
- E-MEM control of still output loading, and
- Machine Control subpanel control of still output loading.

I/O

The inputs and outputs are:

- Two differential PECL video inputs from Crosspoint 3 via midplane, and
- 24 differential PECL video outputs (eight to each of three crosspoints).

Control

Control for the Still Store module is:

- 11-bit address bus,
- 16-bit bi-directional data bus, and
- 10BT/100BT ethernet.

Crosspoint Module

Description

A 4-M/E Video Processor frame has three Crosspoint modules; a standard 2-M/E frame has two. Each Crosspoint module receives differential PECL video signals from the Input modules and outputs thirty-two differential PECL video signals to the Mix/Effect modules, the Output modules, and the Still Store module. An 8-bit address bus and an 8-bit bi-directional data bus provide the control functions. Each module consists of two 64-by-32 crosspoint ICs followed by 32 two-to-one multiplexers.

I/O

The inputs and outputs are:

- 116 differential PECL video signals input from Midplane, and
- 32 differential PECL video signal outputs to Mix/Effects modules.

Control

Control for the Crosspoint module is:

- 8-bit address bus, and
- 8-bit bi-directional data bus.

Mix/Effects (M/E) Module

Description

This module receives four Key signals (fill and cut) and four Background signals for a total of 12 270 MHz serial digital video signals. These signals are processed as described below, passed through an Effects Send switch and mixed together to produce four Program outputs and two Preview outputs. The outputs are normally defined as Primary Program, Primary Clean Feed (or Key), Primary Preview, Secondary Program, Secondary Clean Feed (or Key) and Secondary Preview. Each video output is a 270 MHz serial digital video signal.

For board and system diagnostics, a Checksum Accumulator is provided at each input to the board, at each Effects Send input and output and to each output of the board.

Local control is accomplished with a 186 microprocessor. The 186 microprocessor can be bypassed, allowing control from the main processor.

Features

The supported Keyer features are:

- Chroma Key with Primary and Secondary Suppression,
- Posterization and Solarization,
- Color and Hue Modulation,
- Contrast and Brightness,
- Shaping controlled by Key signal and/or Wipe pattern,
- Key Borderline, and
 - A Preset Pattern that can be generated with any of the following:
 - Simple Pattern/Wipe Generator,
 - One of the two Complex Wipe Generators, or
 - One of the two Utility Buses.

The supported Background features are:

- Posterization and Solarization,
- Color and Hue Modulation,
- Contrast and Brightness,
- Background Border,
- Ten patterns:
 - That can be generated including Horizontal, Vertical, Box, Diamond and Circle,
 - For which there are controls for Position, Size, Aspect and Rotation, and
 - Have borders that can be any combination of a wash between two mattes and Utility Bus 1 or 2.

The supported Borderline features are:

- Borderline (Outline), Drop Shadow and Extrude,
- Nine lines and 16 pixels of delay,
- Borders can be any combination of a wash between two Mattes and Utility Bus 1 or 2, and
- Opacity can be set from opaque to transparent.

The supported Effects Send features are:

- Four external and six internal Effects Send signals,
- Sources for Effects Send can be Key 1, 2, 3, 4, Bkgd A, Bkgd B, Utility 1 or Utility 2, and
- Effects Send can be either Video/Key or Video/Video.

The supported Outputs features are:

- Vertical and Horizontal Ancillary data is reinserted in the Program Outputs,
- A cursor with 16 possible shapes is generated for capturing color for Chroma Key Auto setup and Matte Matching,
- Eight selectable Safe Title patterns,
- Preview Dim on Key Signals, and
- Text overlay.

Transform Engine Module

Description

This module provides 3-D planar image translation and transformation from within the Kalypso system. Each Transform Engine module houses three Transform Engines. Up to two Transform Engine modules can be installed in a Kalypso system, permitting manipulation of six video and key pairs at the same time. For operating information, see the Kalypso *Release Notes*.

Supported Transform Engine module features include:

- Source and Target space selection,
- 3-D Locate, Size Locate, Rotate, Spin, Locate Axis,
- Anti-alias filtering controlled through transform parameters,
- Aspect, Skew, Perspective,
- Post Transform,
- Global channel on each M/E and PGM PST, to which the Transform Engine channels in that M/E can be individually assigned,
- Raster cropping,
- E-MEM keyframe control,
- Near/Far & Front/Back, with horizontal and vertical reverse selection, and
- Tally (performs on screen/off screen and front/back calculations to tally only on air images).

See the Kalypso *Release Notes* for background information about 3-D image controls and for using Effects Send with the Transform Engines.

I/O

The module contains three independent twin channels of digital effects processing (transforming). The each twin channel receives video and Key (or Video) from the Mix Effect Internal Effects Send Bus. The Effects Send Bus allows the signals to come from any M/E module. The transformed Video and Key (or Video and Video) is then returned to the same M/E and the same Key or Video destinations.

Control

Local processing is accomplished with a DSP type microprocessor in each of the three channels.

Sync Generator Module

Description

The Sync Generator module takes a black reference signal from the Reference In module and generates all the timing signals used throughout the Kalypso system.

CAUTION Removing the Sync Generator module causes the Kalypso system to fail.

Features

Supported Sync Generator module features are:

- Automatically detects 525/625 lines of video from the reference input and makes this information available on the data bus,
- Adjustable horizontal and vertical offset between timing reference and system output timing,
- 27 MHz pixel clock and associated timing signals are phase locked to the external reference. If no external reference is supplied, the clock and timing free run,
- Two matte generators with wash and texture that are usable as a primary input to Kalypso,
- Black output that may be used as a primary input to Kalypso and as a dedicated output,
- FLASH-based Test Signal Generator (FLASH memory contains eight useful test patterns), and
- Time Code Reader: Vertical Interval Time Code (VITC) from an external Reference input; Linear Time Code (LTC) from an external source connected via the Reference In module.

I/O

The inputs and outputs are:

- Reference Analog Input from Reference In module,
- Data, address, and control to/from Control module,
- 27 MHz clock output to all frame modules,
- Horizontal blanking, vertical blanking, Field ID, and Frame Sync output to all frame modules.,
- Background Mattes, Test Signal output (refer to [Test Signal Types on page 336](#)), Black output to Crosspoint modules, and
- Black and Test Signal Generator output available direct to Output module without passing through the crosspoint matrix.

Test Signal Types

You can select from eight types of test signals:

- SMPTE color bars,
- 100% color bars,
- Pulse and bar,
- Timing pulse,
- Multiburst,
- Rainbow (Chroma Key Test),
- Ramp, or
- Pathological.

Video Processor Frame Rear Bay Modules

Control I/O Module

Description

This module allows the system to communicate with external devices through its ports. It allows the comm CPU on the Control module to communicate with external devices through two Ethernet ports (the Facility LAN and the Panel LAN), two HDLC serial RS-485 ports for high speed data transfer, eight UART serial RS-485 ports, and a GPI input and GPI output port. It also has a third Ethernet port (the Still Store LAN) that allows the CPU on the Still Store module to communicate with external devices.

Tally Module

Description

The Tally module has 64 relays that interface Kalypso tally status to an external tally system. Tally is an important attribute of a source. Individual relays are automatically assigned to a source when source definitions are defined in the Eng Setup - Sources menu during initial Kalypso system configuration (see [Source Definition on page 169](#)). Relays are not programmable. To ensure the best utilization of the relays, avoid automatic tally assignments for sources named Black or Test.

Up to two Tally modules (one optional) may be installed in the Video Processor Frame. If two modules are installed, two tally commons (pin 36) must be tied together externally. The nominal relay rating specification is 2 A, 30 V. Each tally common is fused at 5 A to prevent damage to the relays.

Input Modules

Description

Kalypso inputs conform to the SMPTE RP-259M standard. Each Input module accepts sixteen (16) non-looping 270 MHz serial digital video signals via 16 BNC connectors on the module. Each input is equalized and buffered. Up to five (5) Input modules may be installed in rear frame slots 6 through 10. One Input module is standard, the other four are optional.

I/O

The inputs and outputs are:

- 16 inputs non-looping and terminated, and
- Three PECL outputs per input.

Effects Send Module

Description

One Effects Send module is supplied with each Video Processor Frame. The module provides eight video output signals from the sixteen BNC connectors mounted on the module. The outputs are identified as 1A, 1B, through 4A, 4B. The Effects Send module may be used as an Output module (Normal Output Mode), or operated in Effects Send Mode.

In normal mode, the module receives eight 270 MHz serial digital video signals from the Crosspoint module. Each signal is deserialized, auto-timed to an output reference, and then serialized. Each 270 MHz serial output signal is available on two BNC connectors.

In Effects Send mode, four pairs of video/video or video/key signals from the M/E modules are received and then sent to the outputs to be sent to an external DVE. The video can be unshaped or go directly to the output.

Four pairs of 270 MHz serial digital video signals from the Crosspoint module can be sent to the M/E module. These signals are the video/key returning from the external DVE. The signals can be shaped, or passed directly to the M/E module.

For operating information and using Effects Send with the Transform Engines, see the *Kalypso Release Notes*.

Features

Supported Effects Send module features are:

- Automatically detects 525/625 line video,
- Autotimer window is a full line length from the output position,
- Autotimer will flywheel if TRS (Timing Reference Signal) is missed,
- Normal mode – each output can be timed individually. Effects Send mode – each pair can be timed individually,
- Input timing for each input can be read,
- Video present is detected for each input,
- TRS is inserted, or input TRS is passed through,
- Checksum is accumulated for Y, C, or both for each output,
- Video unshaper for Effects Send video or video from the crosspoint in normal mode,
- Video shaper for effects return video,
- Key scaling for both send and return video,
- Mask scaling for both send and return video, and
- Supports video plus key/mask or video plus video.

Output Module

Description

Kalypso outputs conform to the SMPTE RP-259M standard. Up to five optional Output modules may be installed in the Video Processor Frame. Each module provides eight video output signals from the sixteen BNC connectors mounted on the module. The module receives eight 270 MHz serial digital video signals from the Midplane. Each signal is deserialized, auto-timed to an output reference, and then serialized. Each 270 MHz serial output signal is available on two BNC connectors.

Features

Supported Output module features are:

- Automatically detects 525/625 line video,
- Autotimer will flywheel if TRS (Timing Reference Signal) is missed,
- Each output can be timed individually,
- Input timing for each input can be read,

- Video present is detected for each input,
- TRS is inserted, and
- Checksum is accumulated for Y, C, or both for each output.

Reference In Module

Description

This module stores the system Ethernet addresses in ROM, the Reference input, and contains the system alarm circuitry. IP addresses for the Facility LAN, the Control panel LAN, and the Still Store LAN are also stored in ROM on this module.

Like the other frame modules, the Reference In module has its own DC-to-DC convertor to supply the necessary voltages. Unlike the other modules, however, the ± 8 V supplied to the analog reference circuitry on the Reference In module comes from the Sync Generator module.

Features

Supported Reference In module features are:

- Analog Reference in (no burst required),
- Linear Timecode Input, and
- System alarm circuits.

CAUTION Do not remove the Reference In module while the system is in operation. Removing the module disables Kalypso.

This module includes a socketed EPROM and a socketed EEPROM. These devices store the IP addresses for the three Kalypso system LANs (Facility LAN, Control panel LAN, and Still Store LAN). Software enabled features are also coded onto these chips. If you replace an existing module with a new one, be sure to remove the EPROM and EEPROM from the old module and install them in the new replacement module. Otherwise the IP addresses and enabled options will be lost and the network will have to be reconfigured and new authorizations acquired.

Status and Alarms

This module receives status information from the Video Processor Power Supply and the frame cooling fan located in the Fan/Plenum drawer. The status information is used by the Control module, and displayed by LED indicators on the Sync Generator module. The following power supply status information is received:

Table 216-1.

Power Supply 1	Power Supply 2	Power Supply 3
Present	Present	Present
Fail	Fail	Fail

A tachometer signal is received from the fan in the Fan/Plenum drawer. If the fan RPM falls below approximately 900 RPM, a Fan Fail signal is generated and sent to the alarm system.

The Reference In module receives signals from a frame-mounted thermostat, and the DC on/off switch on the Fan/Plenum drawer. If the thermostat opens due to high temperature (approximately 75°C), or the DC on/off switch is set to off, the Video Processor Frame Power Supply shuts down.

Alarm Enables

The alarm relay outputs may be connected to an external alarm system installed at the customer site. Select which alarms you want enabled via DIP switch settings on the Reference In module. Refer to [Table 50](#).

Table 50. Alarm Enables DIP Switch Settings

Alarm Function	Alarm Activated	DIP Switch Number	DIP Switch Setting
Fan speed	When fan speed is less than 900 RPM	1	On
MPU Alarm	When the MPU (Control module) signals a fault	2	On
High temperature	When high temperature (75°C) detected by MPU	3	On
Power supply fail	When power supply fails	4	On
One power supply present	When only one of the two required slide-in power supply modules is installed	5	On
Spares	N/A	6 – 8	N/A

I/O

The inputs and outputs are:

- Linear Timecode input,
- Analog Reference input (looping),
- Video Processor Power Supply status input,
- Fan Tachometer input,
- Alarm Relay output, and
- Fan failure output.

Video Processor Frame

The Video Processor frame has a built-in cooling system consisting of a Fan/Plenum mounted in the upper section of the frame, and an air filter in the lower section. The cooling air flows in through the edges of the frame, up through the filter and modules, and exits out the back of the Fan/Plenum unit. The fan runs on +48 V. The fan speed is controlled by a fan speed control signal input from the Reference In module. The fan outputs a tachometer signal to the Reference In module. If the fan output is less than 900 RPM, an alarm triggers if the alarm is enabled (refer to [Reference In Module on page 339](#)). For fire protection, a frame-mounted thermostat opens and removes power from the power supply modules if the frame temperature rises above a set point.

Video Processor Frame Power Distribution

The Midplane board distributes 48 V DC to all frame modules. This is the only power on the Midplane. A fuse is provided to protect each module from damage. Each frame module has its own DC-to-DC voltage convertor that receives the 48 V DC as input, and outputs the following DC voltages for use by the module:

- + 5V,
- + 3.3V, and
- + 2.5V.

Exceptions to the above voltages are indicated where they apply with the individual module descriptions.

Video Processor Power Supply

A separate Processor Power Supply provides power to the Kalypso Video Processor. The Video Processor Power Supply 2 RU frame holds up to three Video Processor Power Supply slide-in modules. Two modules are required for system operation. A third module may be added as an optional redundant supply. Interconnected power switches are available on the front of the Video Processor Power Supply frame. If three modules are configured, one module can fail without bringing down the system. The modules are hot pluggable and current sharing. Each slide-in module has its own AC input and its own cooling fan.

Note The slide-in module fans may not run or run slowly under no-load conditions. This is normal.

A 914 mm (3 ft) control cable (direct, pin-to-pin type) connecting the power supply to the Video Processing frame is provided.

DC On/Off switches (labeled PS1, PS2, and PS3) control the output for each module. A DC Power switch, located on the Fan/Plenum drawer, controls all supplies present in the power supply frame.

Video Processor Frame Power Supply Module Indicators

LEDs on the front of the Frame Power Supply module indicate the following status for each power supply:

- ACG — (AC Good) Indicates the presence of AC line voltage, and
- DCG — (DC Good) Indicates the presence of DC output to the Video Processor frame.

The remaining five LEDs indicate the relative percentage of the entire load share output. The LEDs indicate output power percentages of 20, 40, 60, 80, and 100. A typical two module installation may indicate 20% or 40%.

Kalypso Main Panel

The boards described below are common to both 4-M/E and 2-M/E Kalypso systems, except as noted.

E-MEM/Keyer Setup Board

Description

The board has the keyer setup controls for all Kalypso keyers. It also has the M/E 2 Effects Memory control and display functions.

Features

The board has eight shaft encoders and 62 switches that control the keyers and Effects Memory (E-MEM) for M/E 2 (Mix Effects bank 2).

I/O

The board accepts 8 bits of data and 3 bits of address from the Real Time Processor, along with separate read and write lines and a reset line. It sends back 8 bit data representing the shaft encoder values as well as Main panel button push status.

Control

The host real time processor writes and reads data from each of the PICs parallel slave ports. PIC1 handles the lighting of tally LEDs, scanning switches, and reading the mask shaft encoders located on the right side of the board. PIC2 handles the lighting of tally LEDs, scanning switches, reading key control shaft encoders, and writing to the 16 x 1 E-MEM display.

Matte Setup Board

Description

The Matte Setup Board allows all 58 Matte generators to be adjusted. This includes all backgrounds and matte fills, wipe and key borders, preset pattern edges and borderlines. They can be adjusted for hue, saturation, brightness, and certain effects, such as washes, and allow control over geometry, softness, texture, rotation, size, clip and gain.

Features

The user interface for matte control consists of seven shaft encoders for fine adjustments, and 39 push buttons for selections. This module can instantly be delegated to reveal the appropriate state of each function through delegation.

I/O

The Matte Setup Board operates by responding to the host's chip/board select, separate read and write, three address and eight data lines, and a reset signal. These signals are received by one or both of the PIC microcontrollers and an EPLD, which in turn use the data lines to report back to the host the 8 bit data from the shaft encoders and the 8 bit data reporting each of the buttons, which have been pressed on the Control panel.

Control

The host Real Time Processor controls the module via the input/output interface mentioned above. It writes addresses to be scanned for button presses, button LED enables and disables, and fault and reset LED enables and disables. It reads knob position information in the form of a count which has been kept by the EPLD, which is then reported via the PIC. It also reads requested button press information.

User Defined Switch Board

Description

This board consists of 10 momentary switches whose function can be defined by the panel operator.

Features

Ten buttons, each of which has function that may be defined by the operator.

I/O

20-pin I/O connector — flex cable connection to the machine control switch board with switch scan signals and LED drive signals.

Control

Reading of the switches and lighting of their tally LEDs is controlled by the PIC on the Machine Control/Preview Select Switch Board.

Crosspoint Switch Matrix Board

Description

This board is used to select sources for keys and inputs on the M/E busses and the program/preview bus. Each board consists of four rows and eight columns of switches, and 16 boards are used in the 4-M/E panel to build 16 rows x 32 columns of switches. It also interfaces electrically and mechanically to the Source Name LCD Display module, which provides a 32 x 32 display for each of eight switch columns to identify the video input source for that column.

Features

Supported Crosspoint Switch Matrix Board features are:

- 32 buttons, used to select sources for video and keys, and
- One Source Name Display module interface.

I/O

The inputs and outputs are:

- 40-pin input connector — data, address, and control lines from the Transition Control Board or another Crosspoint Switch Matrix Board on the right side of this crosspoint board, and
- 40-pin output connector — data, address, and control passed through this board and buffered for connection to a crosspoint switch matrix board on the left side of this one in the panel.

Control

The host Real Time Processor writes and reads data from the parallel slave port of a PIC microcontroller. The PIC is responsible for reading the switches and lighting their tally LEDs. Two PWM outputs on the PIC also control the contrast and backlight brightness of the Source Name Display if installed. Graphic images and backlight control of the Source Name Display are written to directly by the Real Time Processor.

Real Time Processor Interface Board

Description

This board is used to house both the Real Time Processor single board computer and the menu display processor single board computer. The Real Time Processor single board computer has the tasks of collecting panel switch, knob, lever arm, and joystick movements and reporting these to the frame. It also receives tally and state change information from the frame and updates tally lights and displays based on the information. The ISA and PCI expansion buses of the Real Time Processor single board computer are connected to the interface board for addressing the additional functionality provided on the interface board. The Menu Processor single board computer communicates with all controls, tally LEDs, and the SVGA LCD display in the menu panel and reports user actions to the frame and the Real Time Processor.

Features

Supported Real Time Processor features are:

Real Time Processor Functions

- 10/100BaseT Ethernet LAN Network Interface circuit including a socketed PROM for the MAC address,
- Twelve Serial Ports for control and connection of Satellite panels including a fuse for each panel,
- Interface circuitry for each M/E group of panel switch boards (four total),
- Interface circuitry for the Machine Control switch group,
- An FPGA containing functions for address decoding, board ID and version, ISA bus interrupt control, power supply monitoring, 64 bit free-running counter for elapsed time stamping, 32 bit interrupting timer/counter, fan locked rotor detection, and LAN MAC address serial PROM reader,
- Ten position boot mode selection switch (for diagnostic and setup functions),
- One octal DIP switch for configuration ID,
- A reset switch and debouncing circuit for the single board computer,
- Eight general purpose LEDs,
- Real panel connectorization and EMI filtering of the control panel LAN port, the twelve satellite panel serial ports, and the COM2 serial port of the single board computer for use as a console and diagnostic port, and
- Direct wired connection to COM2 of the menu display processor single board computer.

Menu Display Processor Functions

(The following applies to early model Kalypso systems only.)

- Real panel connectorization, cable simplification, and EMI filtering of the following single board computer I/O interfaces: three of the serial ports (COM1, COM3, and COM4), 10/100BaseT Ethernet LAN Network Interface, SVGA Graphics Display port, keyboard, mouse, parallel I/O port, and SCSI bus port,
- A reset switch and debouncing circuit for the single board computer, and
- Direct wired connection to COM1 of the Real Time Processor single board computer.

Other Functions

- Five volt to 3.3 volt DC-DC convertor provides power for the AMD LAN controller chip.

I/O

The inputs and outputs are:

- 50-pin I/O connectors — One connector for each M/E row (four total) for interfacing with all panel switch boards except the machine control set. Each connector is mapped into the ISA address space and includes eight address bits, eight data bits, and control signals,
- 40-pin I/O connector — Another connector dedicated for connection to the machine control board set in the panel. It is also mapped into ISA address space and includes three address bits, eight data bits, control signals, and power,
- 10-pin I/O connector — Flex cable connection to the power distribution board for monitoring the status of each power supply and locked rotor detection for each of the cooling fans,
- RJ-45 Ethernet — LAN connection for the Control panel LAN,
- RJ-45 Satellite panel Serial (12 total) — RS-422 Interfaces to the Satellite panels using Category 5 Ethernet twisted pair cables,
- Real Time Processor single board computer I/O — COM2 DB-9 asynchronous serial port, PS/2 Micro-DIN keyboard jack, PS/2 Micro-DIN mouse port, and
- (Early model Kalypso systems only) Menu Processor single board computer I/O — COM1, COM3, & COM4 DB-9 asynchronous serial ports, RJ-45 Ethernet LAN connection for the Facility LAN, PS/2 Micro-DIN keyboard jack, PS/2 Micro-DIN mouse port, DB-25 Parallel port, 68-Pin SCSI, DB-15HD SVGA Video port.

Machine Control/Preview Select Switch Board

Description

This board is used to control various machines connected to the system such as VTRs and Video Servers. In addition, the seven switches on the right side of this board are used to select one of seven busses to be routed to the preview output channel. This board also acts as the controller for the user defined switch board on the left side of this board in the 4-M/E panel.

Features

Machine Control/Preview Select Switch Board features are:

- 18 buttons, used for external machine control and preview output selection, and
- One 12-character alphanumeric LED display, used to display the name of the machine or video clip that is currently being manipulated.

I/O

The inputs and outputs are:

- 40-pin input connector — Data, address, control, and power lines from the host real time processor, and
- 20-pin I/O connector — Flex cable connection to the user defined switch board with switch scan signals and LED drive signals.

Control

The host Real Time Processor writes and reads data from the parallel slave port of a PIC microcontroller. The PIC is responsible for reading the switches and lighting their tally LEDs on both this board and the user defined switch board. It also forwards character data from the Real Time Processor to the 12-character LED display. Two PWM outputs on the PIC also control the overall switch LED brightness and brightness of the 12-character LED display.

Power Distribution Board

Description

This board receives +5 volts and +12 volts from primary and redundant power supplies and distributes it to the various boards and panels in the system.

Features

For both +5V and +12V the primary and redundant power supplies are cabled to diodes which prevent one supply from back-driving the other if one supply goes down. Fuses protect every destination from over-current. Each fuse is labeled with its rating and the circuit it protects. Power to the fans cooling the power supplies is regulated down to minimize fan noise.

Control

Power sense lines feed back to the supplies and also to the Real Time Processor Interface board to indicate voltage levels on this board.

Effects Edit/Transform Control Board

Description

This board is used to edit effects, and set up and execute video transforms.

Features

Effects Edit/Transform Control Board features are:

- 55 buttons used for effects editing, transform setup and manipulation, and
- One joystick provides manual control of video transform execution.

I/O

A 40-pin ISA connector provides data, address, and control lines from the Real Time Processor via the M/E Status Transition Control Lever Arm board.

Control

The host Real Time Processor writes and reads data from the parallel slave ports of 2 PIC micro-controllers. Each of the PICs is responsible for reading a portion of the switches and lighting their tally LEDs. PIC1 also reads the joystick.

M/E Status Transition Control Left Lever Arm Board

Description

This board is used to set up and execute transitions, recall E-MEMs, and report M/E status.

Features

M/E Status Transition Control Left Lever Arm Board features are:

- 56 buttons, used to select sources and keys, and perform wipes, cuts, and mixes,
- One lever arm provides manual control of the transition rate, and
- One M/E status display.

I/O

The inputs and outputs are:

- A 50-pin ISA connector provides data, address, and control lines from the Real Time Processor, and
- Two 40-pin connectors provide data, address, and control lines from the Real Time Processor to the boards on the left and right of this one.

Control

The host Real Time Processor writes and reads data from the parallel slave ports of two PIC micro-controllers. Each of the PICs is responsible for reading a portion of the switches and lighting their tally LEDs. PIC1 also controls the contrast and brightness of the M/E status display; PIC2 reads the lever arm. The M/E status display is written to directly by the Real Time Processor.

M/E Status Transition Control Right Lever Arm Board

Description

This board is used to set up and execute transitions, recall E-MEMs, and report M/E status.

Features

M/E Status Transition Control Right Lever Arm Board features are:

- 80 buttons, used to select sources and keys, perform wipes, cuts, and mixes, and recall and execute E-MEMs,
- One lever arm provides manual control of the transition rate,
- One M/E status display, and
- One single-line character display indicates which E-MEM is being recalled.

I/O

The inputs and outputs are:

- A 50-pin ISA connector provides data, address, and control lines from the Real Time Processor, and
- Two 40-pin connectors provide data, address, and control lines from the Real Time Processor to the boards on the left and right of this board.

Control

The host Real Time Processor writes and reads data from the parallel slave ports of three PIC micro-controllers. Each of the PICs is responsible for reading a portion of the switches and lighting their tally LEDs. PIC1 also controls the contrast and brightness of the M/E status display. PIC2 writes to the character display, and PIC3 reads the lever arm. The M/E status display is written to directly by the Real Time Processor.

E-MEM/Run Control Board

Description

This board has the Master E-MEM for the M/Es in the Kalypso system. It also has the E-MEM effects run control.

Features

Effects Memory/Run Control Board features are:

- 66 switches with tally LEDs,
- One lever arm for manual control of running effects,
- A lever arm bar graph display, and
- A 16 x 1 character display.

I/O

This board accepts eight bits of data and three bits of address from the Real Time Processor along with separate read and write lines and a reset line over a 40 pin connector. Data sent to this board is used to illuminate tally LEDs, send characters to the 16 x 1 display, and light the bar graph display. This board sends back 8 bit data representing what buttons are pushed on the control panel and the lever arm position.

Control

The host Real Time Processor writes and reads data from each of the PIC's parallel slave ports. PIC1 handles button scanning and lighting tally LEDs on the left side of the board, and processing lever arm values. PIC2 handles lighting tally LEDs, scanning switches on the right side of the board, writing data to the bar graph display and writing data to the 16 x 1 character display.

Local Aux Panel

The 4-M/E has a separate Local Aux panel, while the 2-M/E has a Local Aux subpanel integrated into the Main panel. The Local Aux panel has three boards; Local Aux Processor Interface, Aux Right Switch Matrix, and Aux Left Switch Matrix.

Local Aux Processor Interface Board

Description

This board includes the single board computer that collects panel switch activity and reports the switch closures to the frame. The board also receives tally and state change information from the frame and updates tally lights and displays based on the information. The ISA and PCI expansion buses of the single board computer processor are connected to the interface board for addressing the additional functionality provided on the interface board.

Features

Local Aux Processor Interface Board features are:

Processor Functions

- 10/100BaseT Ethernet LAN network interface circuit including a socketed PROM for the MAC address,
- DB-9 connectorization and EMI filtering for the single board computer's COM1 and COM2 serial ports. COM1 is used as a RS-232 diagnostic test port, and COM2 has additional circuitry to convert RS-232 to RS-422 and is used to communicate with the router for the Emergency Bypass system,
- An additional UART, connector, RS-422 driver/receiver, and DB-9 connector for implementing the COM3 serial port. COM3 is used to communicate with the frame for the Emergency Bypass system,
- Interface circuitry for the Aux panel switch boards,
- An FPGA containing functions for address decoding, board ID and version, ISA bus interrupt control, power supply monitoring, 64 bit free-running counter for elapsed time stamping, 32 bit interrupting timer/counter, fan locked rotor detection, and LAN MAC address serial PROM reader,
- Ten position boot mode selection switch (for diagnostic and setup functions),
- One octal DIP switch for configuration ID,

- A reset switch connector and debouncing circuit for the single board computer, and
- Eight general purpose LEDs.

Power Functions

- Dual 8-Pin circular DIN power input connectors with “OR” diode isolation for redundant 12 volt power in,
- 12 volt to 5 volt DC-DC Converter for powering the single board computer and all other 5 volt logic,
- Five volt to 3.3 volt linear regulator provides power for the AMD LAN controller chip, and
- Five volt to 12 volt DC-DC converter for powering the 12 volt devices on the single board computer.

I/O

The inputs and outputs are:

- 40-pin I/O connector — For connection to the Aux Right Switch Matrix board in the panel. It is mapped into ISA address space and includes five address bits, eight data bits, control signals, and power,
- RJ-45 Ethernet — LAN connection to the Control panel LAN,
- DB-9 Connector — COM3 Serial Port for Emergency Bypass frame control,
- DB-15HD Connector — Currently unused,
- Real Time Processor single board computer I/O — COM1 and COM2 DB-9 synchronous serial ports, and
- Micro-DIN keyboard jack, PS/2 Micro-DIN mouse port.

Aux Right Switch Matrix Board

Description

This board fits into the right side of the Aux panel and has half of the controls for all Aux busses in the Kalypso system.

Features

This board has 68 switches with individual LEDs and three Source Name Displays for identifying video sources.

I/O

This board accepts eight bits of data and three bits of address from the Aux processor, along with separate read and write lines and a reset line, all through a 40 pin connector. Data going to the board either illuminates lights or illuminates and sends characters to the source name displays. This board sends back eight bit data representing the buttons that are pushed on the right side of the Aux panel. Aux Processor address, data, read, write and reset are sent on to the left Aux board through another 40 pin connector.

Control

The Aux Processor writes and reads data from each parallel slave port. PIC1 handles lighting tally LEDs, scanning switches on the left side of this board. PIC2 handles lighting tally LEDs, scanning switches on the right side of this board. The Aux Processor also writes data directly to the Source Name Displays with minimal logic in a PLD to control bi-directional data buffers between the Aux Processor data bus and the Source Name Display data bus. Individual PWM controls from the PICs are used to adjust the backlight intensity and the contrast of the source name displays.

Aux Left Switch Matrix Board

This board is the same as the Aux Right Switch Matrix board except that it resides on the left of the Aux panel and it has 60 switches.

Menu Panel

Two types of Menu panel are used on Kalypso systems. The Enhanced Menu panel has replaced the original Menu panel on currently shipping systems.

Enhanced Menu Panel

The Enhanced Menu panel is a standalone touch screen that allows fingertip control of the Kalypso Menu application for custom user configuration of special effects and matte settings not requiring real time operation. A standard keyboard and mouse supplied by the customer can also be connected for control. The Menu panel contains a single board computer (SBC) running a Windows operating system. The Kalypso Menu application runs on this platform and interfaces with the Main panel and Video Processor frame via over the Ethernet network.

Main features of, and interfaces to, the Menu panel include the following:

- Pentium class Single Board Computer (SBC) board running Windows operating system on internal hard drive,
- RJ-45 Ethernet connection to Video Processor frame and Main panel over Menu (Facility) LAN,
- Passive crossover switch for swapping Menu panel to Frame Ethernet cable TX and RX polarity,
- Built-in CD-ROM drive for installation of software and other applications,
- Flat panel display with touch screen overlay for access to menus,
- Standard PS/2 keyboard and mouse interface (keyboard and mouse not provided),
- External Zip drive with USB interface (250 MB Zip drive and one Zip disk included with system),
- Receives +12 V DC power from Main panel through external power cable.
- A built-in fan pulls cooling air through vents on the top and left sides and expels it out the right side.

Original Menu Panel

Menu Board

Description

These boards make up the electronics for button scanning, lighting lights and reading shaft encoders for the menu system. There are three boards, a shaft encoder board, a switch board, and a rear connector board that interfaces to the cables connected between the menu assembly and the Main control panel.

Features

The shaft encoder board has five shaft encoders on it. The shaft encoders are used for scrolling through menu functions and setting up parameters in the menu system. The switch board has 30 switch LEDs on it organized in a 10 x 3 matrix. These switches are used to select various “pop-up menus” for fast access.

I/O

The menu rear connector board sends and receives RS-232 data from the on-board PIC microcontroller to the menu processor single board computer located in the Main control panel. It receives shaft encoder data from the menu shaft encoder board. It sends data for lighting lights to the menu switch board and receives data regarding button presses from the menu switch board.

This board accepts DC power through a five or eight pin DIN connector. On the -00 version of this board, both +5 and +12V DC are present on the five pin input connector. On the -01 version of this board, only +12V DC is available on the eight pin input connector.

The menu rear connector board passes RS-232 data from the menu processor single board computer to the touch panel controller board. It passes SVGA video from the menu processor single board computer to the flat panel display controller board. It sends out signals to the flat panel display controller board to control the on-screen display (OSD) menu. The OSD menu is used to control brightness, contrast, vertical, and horizontal position of the display.

Control

The menu processor writes and reads data over the RS-232 interface to the PIC micro-controller. The PIC and PLD combination handles lighting tally LEDs, scanning switches, and reading the shaft encoders.

Specifications

Table 51. Kalypso Classic Mechanical Specifications

Component	Depth	Width	Height	Weight ^a	Rack Units
Standard					
Video Processor Frame - Classic	586 mm / 23.06 in. ^b	483 mm / 19 in.	578 mm / 22.75 in.	75.75 kg / 167 lb	13
4-M/E Main Control Panel	624 mm / 24.58 in. ^{c, d}	1410 mm / 55.5 in. ^d	189 mm / 7.44 in. ^e	86 kg / 189 lb	N/A
2-M/E Main Control Panel	483 mm / 19.0 in. ^{c, d}	1252 mm / 49.31 in. ^d	207 mm / 8.3 in. ^e	63 kg / 138 lb	N/A
1-M/E Main Control Panel	400 mm / 15.73 in. ^f	458 mm / 18.02 in. ^g	101 mm / 3.99 in. ^h	11.34 kg / 25 lb	9
Local Aux Panel	99 mm / 3.9 in.	668 mm / 26.3 in.	183 mm / 7.2 in.	15.88 kg / 35 lb	N/A
Menu Panel	109 mm / 4.30 in.	375 mm / 14.75 in. ⁱ	257 mm / 10.1 in.	7.7 kg / 17 lb	7 ^j
Video Processor Power Supply Frame	406 mm / 16.0 in.	483 mm / 19.0 in.	89 mm / 3.5 in. ^k	15 kg / 33 lb ^l	2 ^k
Options					
KAL-24AUX1 Remote Aux Panel	51 mm / 2.0 in.	483 mm / 19.0 in.	45 mm / 1.75 in.	1.02 kg / 2.25 lb	1
KAL-24AUX2 Remote Aux Panel	64 mm / 2.5 in.	483 mm / 19.0 in.	89 mm / 3.5 in.	2.04 kg / 4.5 lb	2
KAL-24AUX3 Remote Aux Panel	64 mm / 2.5 in.	483 mm / 19.0 in.	133 mm / 5.25 in.	3.06 kg / 6.75 lb	3
KAL-32AUX1 Remote Aux Panel	133 mm / 5.25 in.	483 mm / 19.0 in.	44 mm / 1.75 in.	0.93 kg / 2.06 lb	1
KAL-32AUX2 Remote Aux Panel	108 mm / 4.25 in.	483 mm / 19.0 in.	89 mm / 3.5 in.	1.02 kg / 2.25 lb	2
Emergency Bypass Frame	356 mm / 14 in.	483 mm / 19.0 in.	89 mm / 3.5 in.	5.17 kg / 11.4 lb ^m	2
Shot Box	172 mm / 6.75 in.	216 mm / 8.5 in.	51 mm / 2 in.	1.22 kg / 2.7 lb	N/A

^a All weights approximate.

^b Allow an extra 102 mm (4 in.) for cable.

^c Allow a minimum of 152 mm (6 in.) of clear space at the rear of the Main panel below the mounting surface for proper cable clearance and air flow. Allow an extra 203 mm (8 in.) to 254 mm (10 in.) of mounting surface behind the Main panel for peripheral components (e.g., Local Aux panel).

^d Indicated measurement is for lid. Refer to installation detail for tub measurements.

^e Add 13 mm (0.5 in.) for rubber feet on bottom of tub if required. Indicated measurement is from bottom surface of tub to top surface of lid.

^f Indicated measurement is for top surface of panel. Refer to installation detail for tub measurements.

^g Indicated measurement is for top surface of panel. Add 27 mm (1.06 in.) for mounting brackets.

^h Indicated measurement is from bottom surface of tub to top surface of panel.

ⁱ Allow an extra 147 mm (5.8 in.) clearance for the CD-ROM and fan exhaust.

^j Optional Flush Mount kit.

^k Allow for additional height of 133 mm (5.25 in.), in the event that a 3 RU replacement Video Processor Power Supply frame is required.

^l Includes optional redundant power supply module.

^m Weight with no modules, 1 power supply. 5.71 kg/12.6 lb with no modules, 2 power supplies.

Table 52. *Kalypso Classic General Specifications*

Power		
Video Processor Frame Power Supply	Power Consumption	100-125 VAC or 200-250 VAC autorange, 50-60 Hz power factor corrected
		700 W (no options), 850 W (typical), 1200 W (maximum)
Main Panel Power Supply	Power Consumption	100-125 VAC or 200-250 VAC autorange 50-60 Hz power factor corrected
		4-M/E: 600 W (typical), 800 W (maximum) 2-M/E: 600 W (maximum)
Local Aux Panel Power Supply	Power Consumption	100-125 VAC or 200-250 VAC
		Usually powered through Main Panel, 50 W if powered externally.
Environmental		
Temperature Range	Frame, Local Aux Panel, Menu Panel	Ambient temperature for specifications: 20° to 30° C (68° to 86° F) Ambient temperature for operation: 0° to 40° C (32° to 104° F)
	Main Control Panel	Specification: 20° to 30° C (68° to 86° F) Operational: 0° to 35° C (32° to 95° F)
Relative Humidity		Up to 95% (non-condensing)

Table 53. *Kalypso Classic System Specifications*

Video Standard - Conforms to SMPTE RP-259M	
Serial Digital Video Inputs	
Number	16 standard, 64 optional, 80 total (non-looping)
Type of Connectors	75 ohm BNC, (SMPTE 259M)
Nominal Amplitude	800 mV peak-to-peak terminated
Return Loss	> 15 dB, 5 MHz to 270 MHz
Channel Coding	Conforms to SMPTE RP-259M
Ancillary Data	Blanked or passed from A background to M/E outputs (includes reentries)
Input Impedance	75 ohm
Maximum Cable Length Equalized (Belden 8281 type cable)	225 m (738 ft)
Number of Bits	10
Serial Digital Video Outputs	
Number	8 standard video (2 connectors each), or up to 4 video/key pairs of Effects Send. 4-M/E: An additional 40 standard video (2 connectors each) are optional (32 standard video for 2-M/E)
Type of Connectors	75 ohm BNC, self terminating (SMPTE 259M)
Amplitude	800 mV peak-to-peak across 75 ohm \pm 10% (SMPTE 259M)
Return Loss	> 15 dB, 5 MHz to 270 MHz
Rise and Fall Times (between 20% and 80% amplitude points)	Between 400 picosecond and 1.5 nanosecond across 75 ohm termination
Timing Jitter	0.2 UI (SMPTE RP184-1996 method)
Output Impedance	75 ohm
DC Offset on Output	< 50 mV across 75 ohm termination
Number of Bits	10
Number of Connectors per Output	2 BNC connectors per channel
Ancillary Data	Included on the A program output of each M/E

Table 53. Kalypso Classic System Specifications - (continued)

Analog Reference Input	
Black	525 (60 Hz) or 625 (50 Hz)
Connectors	2 BNC
Return Loss	> 40 dB to 5 MHz
Impedance	75 ohm loop through
System Timing	
Nominal Switcher Delay	53 μ s
Serial Input Autotiming	+/- 10 μ s
Minimum Switcher Delay	43 μ s
Maximum Switcher Delay	63 μ s

Field Replaceable Units

Introduction

This appendix provides lists of the Field Replaceable Units (FRU) and Critical Spares for the Kalypso Video Production Center.

Note The lists given here are for general guidelines only and are subject to change at any time. They do not reflect current pricing or availability information.

Field Replaceable Units

The modules and assemblies in the Kalypso Video Processor frame and Control Panel surfaces that can be replaced in the field and ordered from Customer Service are listed in [Table 54](#). Refer to the Replacement Notes and References column for any special replacement instructions and links or references to other manual sections.

Table 54. FRU List and Replacement Notes and References

Name	Part Number	Replacement Notes and References
Video Processor Frame		
Frame Power Supply module	119-6239-XX	Do not force or slam power module into slot.
Frame Chassis Fan Slide Assembly	660-0026-00	
Frame Motherboard	671-4915-XX	
Sync Generator module	671-4916-XX	
Transform Engine module	671-4922-XX	
Still Store module (standard)	660-0042-20	
Still Store module (upgrade)	660-0042-40	
Crosspoint module	671-4917-XX	
Non-looping Input module	671-4918-XX	
Output module	671-4919-XX	
Mix/Effects module	671-4920-XX	
Effects Send module	671-4921-XX	
Tally module	671-4924-XX	

Table 54. FRU List and Replacement Notes and References - (continued)

Name	Part Number	Replacement Notes and References
Control I/O module	671-4925-XX	
Reference In module	671-4926-XX	Move EEPROMs U8 and U10 to replacement module. Set alarm DIP switch if necessary.
Control module	671-4927-XX	From Menu Panel, install current Kalypso software to Frame only.
Main Panel		
Source Name Display	119-6258-XX	Refer to Source Name Display Installation on page 99 for replacement instructions.
M/E Status Display	119-6257-XX	
Crosspoint Switch Matrix	671-4932-XX	
M/E Transition Control, Right	671-4933-XX	
M/E Transition Control, Left	671-4934-XX	
Matte Setup	671-4936-XX	
Keyer Setup	671-4937-XX	
Effect/Edit Transform	671-4938-XX	
Effects Memory/Run	671-4939-XX	
Machine Control Switch	671-4940-XX	
Real Time Processor Interface	660-0001-00	Includes Main Panel RT and NT Processor boards and drives for early model Main panel. Main panel and Menu panel IP addresses will need to be reset after installation if default addresses are not used.
	660-0001-01	Includes Main Panel RT processor board and Disk-On-Chip for late model Main panel. Main panel IP addresses will need to be reset after installation if default addresses are not used.
Power Distribution	671-4949-01	Refer to FMN 075069000 for upgrade instructions from 671-4949-00.
User Definable Switch Subpanel	671-4995-XX	
Main Panel Power Supply	119-XXXX-XX	Refer to Main Panel Power Supply Replacement on page 246 for replacement instructions.
Menu Panel		
Original Menu Panel Assembly	660-0015-00	For use with early model Main panel. Menu panel IP addresses will need to be reset after installation if default addresses are not used.
Enhanced Menu Panel (Sharp)	660-0032-01	For use with late model or modified Main panel. Menu panel IP addresses will need to be reset after installation if default addresses are not used.
Menu Panel Power Cable	174-4447-10	Same as Local Aux panel cable (8 pin DIN).
Local Aux Panel		
Local Aux Panel Assembly	610-0935-00	Set correct IP addresses for replacement Local Aux panel (see Changing Local Aux Panel IP Address on page 159). From Menu Panel, install current Kalypso software to replacement Local Aux Panel only (see the current Release Notes for installation procedures).
Local Aux Processor I/F Assembly	660-0003-00	Used in 2-M/E Main Panel. IP address information above also applies.
Local Aux Panel Power Cable	174-4447-10	Same as Menu panel cable (8 pin DIN).
Optional Panels		
24-Crosspoint Remote Aux Panel (1RU)	660-0024-01	KAL24AUX1
24-Crosspoint Remote Aux Panel (2RU)	660-0025-01	KAL24AUX2
24-Crosspoint Remote Aux Panel (3RU)	660-0023-01	KAL24AUX3
32-Crosspoint Remote Aux Panel (1RU)	660-0018-01	KAL32AUX1
32-Crosspoint Remote Aux Panel (2RU)	660-0019-01	KAL32AUX2

Table 54. FRU List and Replacement Notes and References - (continued)

Name	Part Number	Replacement Notes and References
Drives		
Zip Drive (SCSI)	119-8006-XX	For use with early model Main panel.
CD Drive (SCSI)	119-8008-XX	For use with early model Main panel.
Zip Drive (USB)	119-8029-XX	For use with Enhanced Menu panel.
CD Drive (USB, external)	119-8073-00	For use with Enhanced Menu panel (optional).
Emergency Bypass 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 (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	
Software		
Software CD	0633303XX	
Manuals		
Documentation CD	0718057XX	
Release Notes	0710721XX	
Release Notes Addendum	0710722XX	
User Manual	0710618XX	
Reference Manual	0718176XX	
Installation & Service Manual	0710646XX	
Installation Planning Guide	0710619XX	
Machine Control I/F Install Instructions	0718056XX	
Emergency Bypass Option Instructions	0718121XX	
Protocols Manual	0718063XX	

Critical Spares Kit List

The optional Critical Spares Kit (KAL-KIT) contains the spare modules and assemblies listed below that are most critical to normal system operation. Refer to the Notes column for any special replacement or installation instructions and for links or references to other manual sections.

Table 55. Critical Spares Kit

Name	Part Number	Notes
Video Processor Frame		
Chassis Fan Slide Assembly	660-0026-00	
Sync Generator module	671-4916-XX	
Crosspoint module	671-4917-XX	
Control I/O module	671-4925-XX	
Reference In module	671-4926-XX	Move EEPROMs U8 and U10 to replacement module. Set alarm DIP switch if necessary.
Control module	671-4927-XX	From Menu Panel, install current Kalypso software to Frame only.
Main Panel		
Real Time Processor Interface	660-0001-01	Includes Main Panel RT and NT Processor boards and drives for late model Main panel.

External Interfaces

Introduction

This Appendix provides specialized information for interfacing specific external devices to the Kalypso system.

General External Device Interfacing

In general, interfacing an external device to the Kalypso system involves the following elements:

- Control cabling and configuration,
- Video cabling,
- Device parameters that have variable settings (particularly those used for communications) must be set identically on both the Kalypso system and the external device being interfaced,
- Device Definition,
- Assigning a Device Definition (for DDR, VTR, and digital effects systems) to a source,
- Mapping that source to a panel button, and
- Effects Send (if used).

Note To make any Eng Setup changes you must login as the EIC. See [EIC Login on page 167](#) for specific instructions.

Device Definition

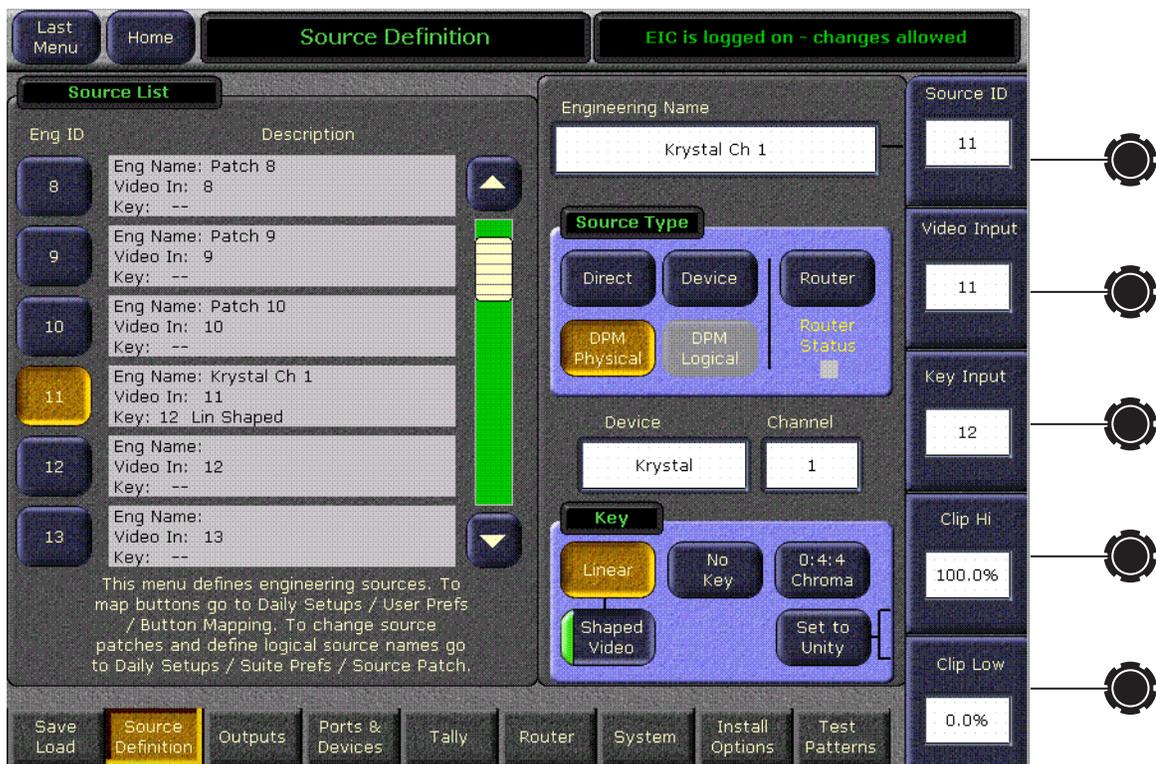
The Kalypso system uses a software Device Definition object to define the capabilities of each device interfaced with the system. The following Device Definition types are available:

- **Direct** (standard video and key inputs, not for external interfaces),
- **Device** (DDR, VTR, GPI, Peripheral Bus II).
- **Router** (external routing system), and
- **DPM Physical** (hard wired external digital effects system, and **Other** (see [Effects Send Configuration on page 377](#)).

External Device Definitions contain the information required for that external device, (e.g., IP Address). Each Device Definition is given a unique name. Once a Device Definition has been created for an external digital effects system, DDR, or VTR, it can be assigned to a Kalypso source. That source then supports the specific capabilities of that external device. GPI and Peripheral Bus II Device Definitions are not associated with a particular source.

The Eng Setup - Source Definition menu shows the available Device Definition types in the Source Type pane. [Figure 217](#) shows **DPM Physical** selected. Device definition objects are assigned to sources with this menu during the source definition process.

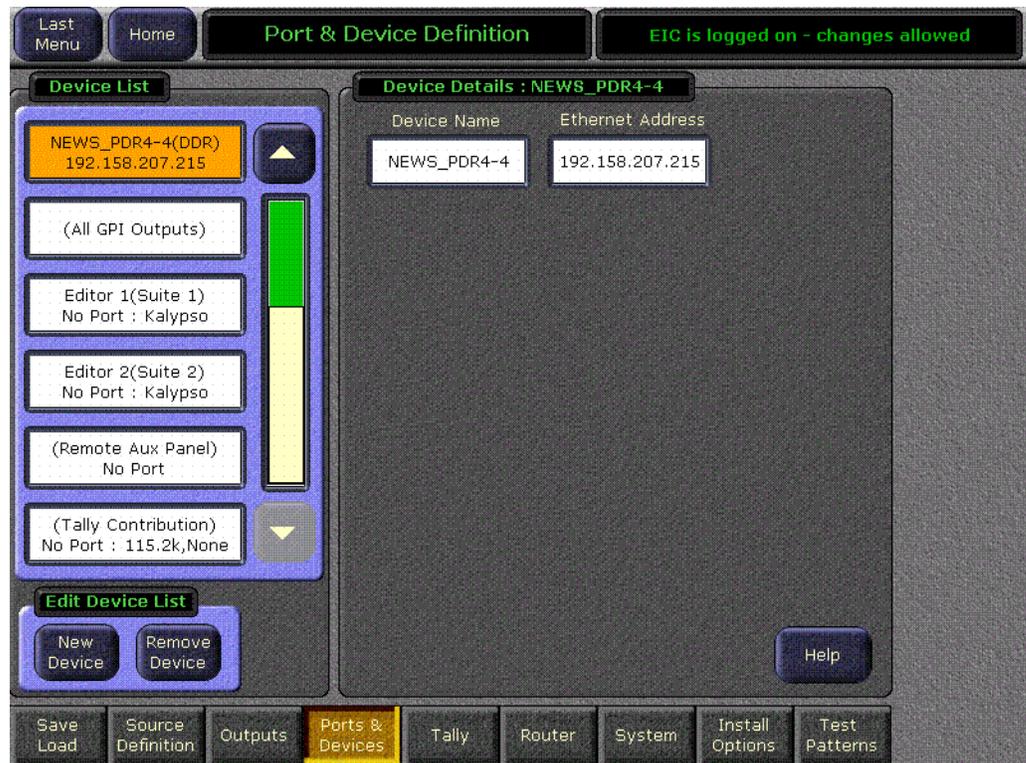
Figure 217. Eng Setup - Devices Menu, Device Definition Types



Port & Device Definition Menus

Device definition objects are created as using the Port & Devices Definition menu, which is accessed by touching **Eng Setup, Ports & Devices** (Figure 218).

Figure 218. Port & Device Definition Menu



The currently configured device definition objects are displayed in a scrolling list on the left. Touching a device on this list delegates the rest of the menu to that object.

Standard Device Definition Objects

The following device definition objects are available on all Kalypso systems.

- (All GPI Outputs)
- Editor 1
- Editor 2, only active for multi-suite operation
- (Remote Aux Panel), used with ports 7 and 8 only
- (Tally Contribution)

Most device definition objects can be named by touching the Device Name data pad, which can bring up a popup keypad. The items listed in parentheses above have fixed names that cannot be changed.

Standard device definition objects cannot be removed (the **Remove Device** button is grayed out when a standard device is selected).

GPI Out Device Configuration Menu

Selecting (All GPI Outputs) displays the following menu (Figure 219).

Figure 219. Ports & Device – (All GPI Outputs) Selected



The buttons in the scrolling list represent the 16 physical GPI output relays available on the Kalypso system (1-16). The functions performed by these relays depend on how they have been connected to the device being controlled.

You can name a function by touching a button, touching the **GPI Name** data pad, and entering the name in the popup keypad. These names appear on the separate PBus & GPI Menu, to help the operator identify each function.

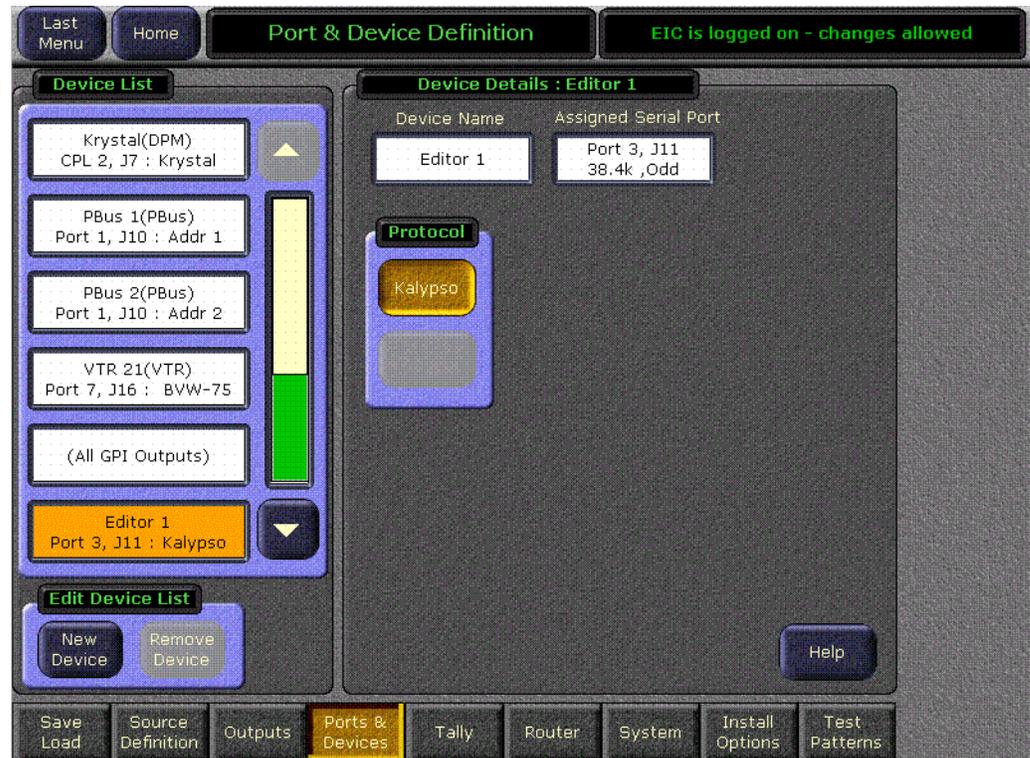
The duration of the contact closure can be changed with the soft knob on the right.

Kalypso version 10.1 adds a one field delay for GPI Out triggers to improve the deterministic behavior of E-MEM effects containing these triggers.

Editor Device Configuration Menu

Selecting an Editor device displays the following menu, which permits naming the device and assigning a Serial Port (Figure 220).

Figure 220. Port & Device – Editor Selected



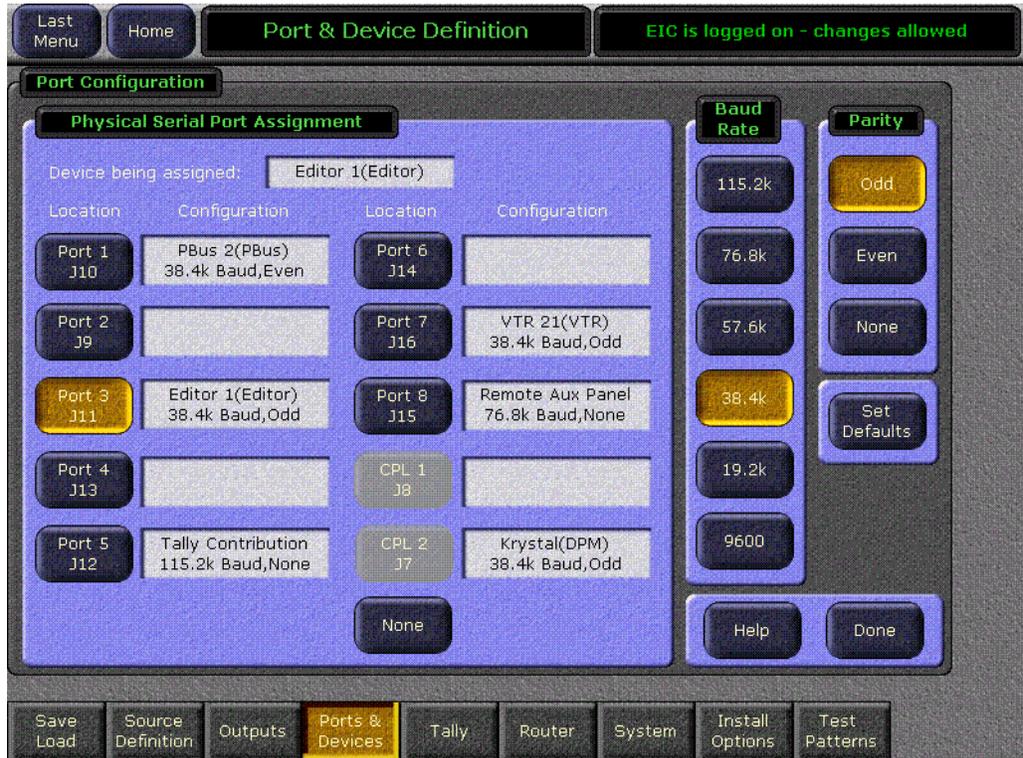
Other Standard Device Configuration Menus

The device configuration menus for Remote Aux Panels and Tally Contribution (not implemented) are similar to the Editor menu, permitting entry of a device name and selection of a serial port.

Port Configuration Menu

Device definition objects using serial communications can be assigned to one of the available Kalypso system serial ports. Touch the Assigned Serial Port data pad to bring up the Port Configuration menu (Figure 221).

Figure 221. Ports & Devices – Port Configuration Menu



On ports 1-8 the Baud Rate and Parity buttons permit communications protocol configuration for devices whose protocol settings are adjustable. Touching the **Set Defaults** buttons returns the Baud and Parity settings to the Kalypso system factory defaults. The HDLC and the Remote Aux Panel port configuration settings are fixed.

On Kalypso Classic systems only serial ports 7 or 8 can be used for 24 button Remote Aux panel control. CPL 1 and CPL 2 are HDLC ports and can only be used for DPM devices.

In earlier software versions the serial port assignments were fixed. For reference, [Table 56](#) lists these assignments. These are the default assignments for Release 7.5 and later software versions.

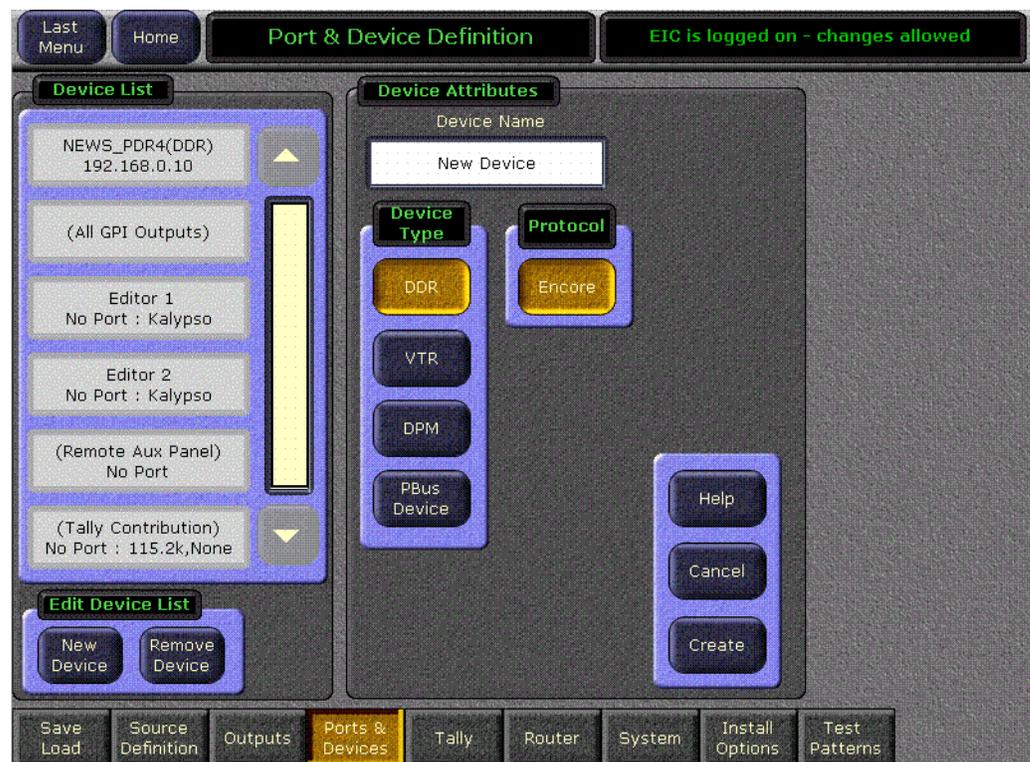
Table 56. *Kalypso 7.2 and Earlier Software Fixed Serial Port Assignments*

Function	J#	Port
DPM Device #2	7	422-CPL
DPM Device #1	8	422-CPL
Unassigned	9	2
Peripheral Bus II	10	1
Editor Interface	11	3
Tally Contribution	12	5
Unassigned	13	4
Unassigned	14	6
Remote Aux Panel	15	8
Unassigned	16	7

New Device Definition Objects

New device definition objects can be created to support external devices available in your facility. Touching the **New Device** button brings up a Device Attributes menu ([Figure 222](#)).

Figure 222. *Port & Device – Device Attributes Menu*



The following types of device definition objects can be created:

- DDR
- VTR
- DPM
- PBus Device

Creating a New Device Definition Object

1. Logon as the EIC.
2. Go to the Port & Device Definition menu by touching **Eng Setup, Ports & Devices**.
3. Touch the **New Device** button.
4. Touch one of the Device Type buttons, enter a Device Name, choose from whatever additional settings may be available for that device, and then touch **Create**.

Once created, different configuration settings are available for the different object types. These controls appear when the created object is selected on the scrolling list.

Removing and Editing a Device Definition Object

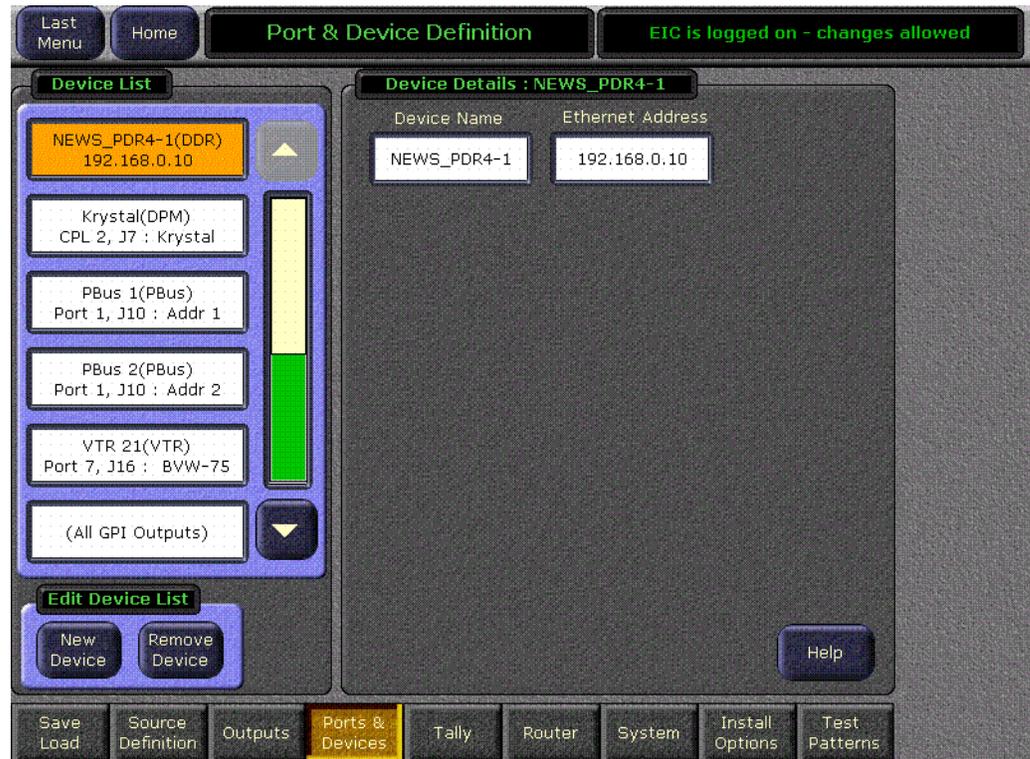
To remove an existing Device Type or Protocol, select the item in the scrolling list and touch **Remove Device**.

To edit an existing Device Type or Protocol you must remove the device and then create a new one.

DDR Device Definition Menu

Selecting a DDR device displays a menu similar to the following (Figure 223), from which you can name the device and enter its Ethernet address. The name and address entered must exactly match those specified in the Encore system configuration of this external device.

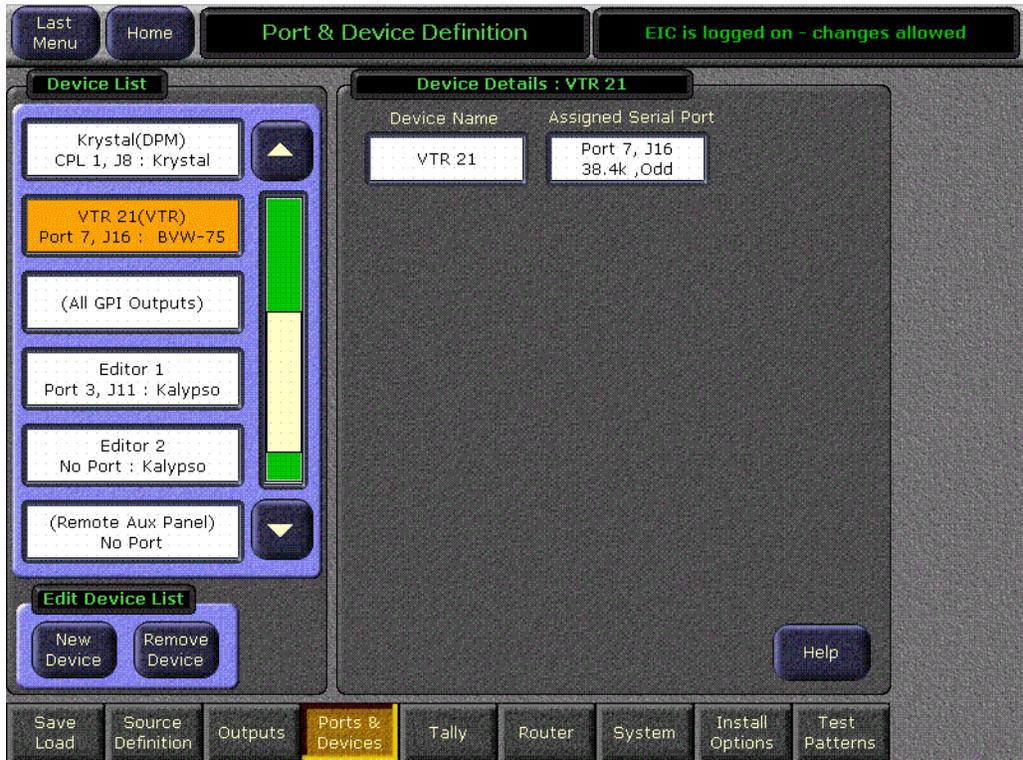
Figure 223. Port & Device – DDR Selected



VTR Device Definition Menu

The VTR Device Definition menu is similar to the DDR menu, except a serial port can be selected instead of an Ethernet address, and any name can be used for the serially controlled VTR (Figure 224). It is possible to configure a DDR using a VTR Device definition, but only the currently loaded clip will be able to be controlled from the Kalypso system.

Figure 224. Port & Device – VTR Selected



DPM Device Definition Menu

Selecting DPM displays a menu similar to [Figure 225](#).

Figure 225. Ports & Devices – DPM Selected



Like the other Device Definition menus, the DPM device can be named and its serial port can be assigned with the data pads at the top.

Kalypso system Aux buses are assigned for use with the external DPM device's channels by touching the data pad of the channel on the left, then touching the Aux Bus number in the scrolling list on the right.

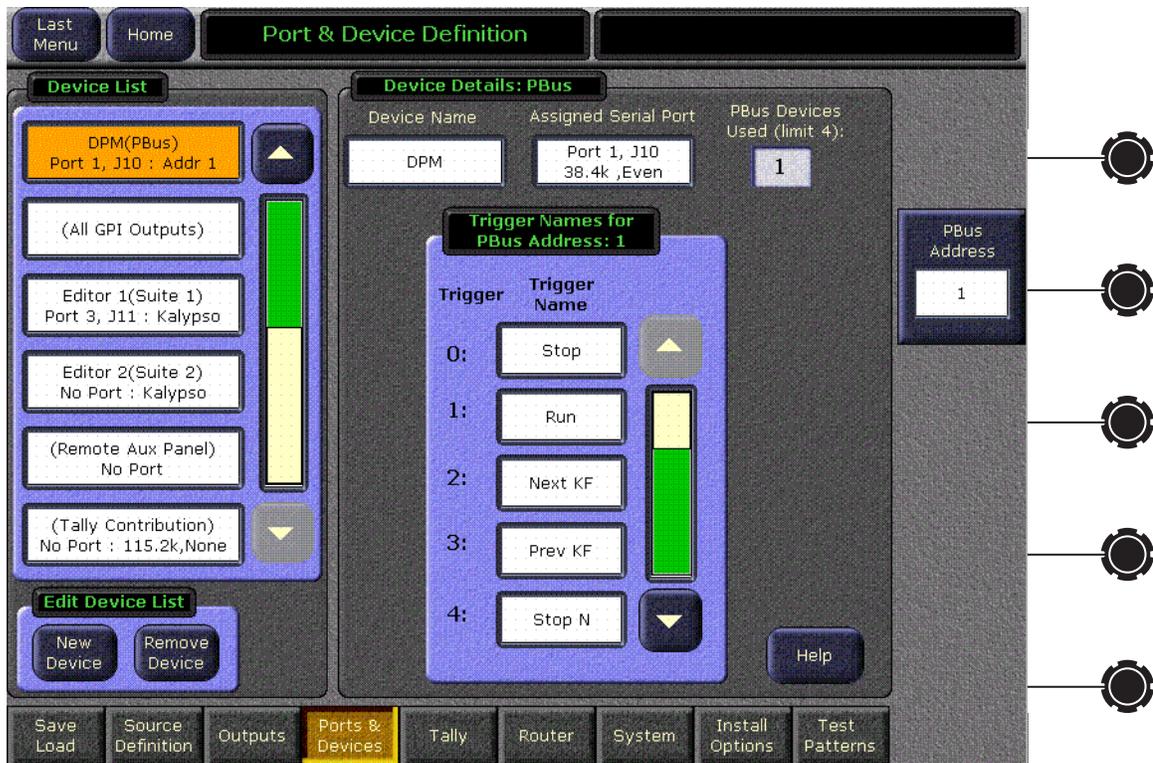
Note Once an Aux bus has been assigned, it can be reassigned but cannot be removed. If an extra Aux bus is assigned by mistake, you will need to touch **Remove Device** and completely redefine the device object.

The **Config Outputs** and **Define Sources** buttons provide access to other menus used to configure external DPM operation.

PBus Device Definition Menu

Selecting PBus Device brings up a menu similar to [Figure 226](#).

Figure 226. Port & Device – PBus Selected



The buttons in the scrolling list correspond to the 16 PBus triggers available (0-15). What each trigger does is defined by the external device. Names can be entered by touching the data pad for a trigger, which brings up a popup keypad.

The PBus device can be named, and the serial port assigned, using the data pads at the top of the menu. The PBus address used to communicate with the device is selected with the soft knob on the right.

Kalypso version 10.1 adds a one field delay for PBus triggers to improve the deterministic behavior of E-MEM effects containing these triggers.

Effects Send Configuration

Internal Effects send capability is built into the Kalypso system and requires no special configuration, other than installing Transform Engine modules.

External Effects Send is installed and configured by:

- Defining a DPM Device with the correct number of channels and selecting the Aux Buses to be used (Eng Setup - Device menu),
- Assigning the outputs of those Aux Buses to outputs 41-48 on the Effects Send module, and selecting Aux Pair mode (Eng Setup Outputs menu),
- Connecting the Effects Send module video and key output cables to the inputs of the DPM,
- Connecting the video and key output cables of the DPM to Kalypso system inputs, and
- Configuring each DPM source to use the previously defined DPM Device, selecting Shaped and Lin Key input, and assigning the correct DPM channel (Eng Setup - Sources menu).

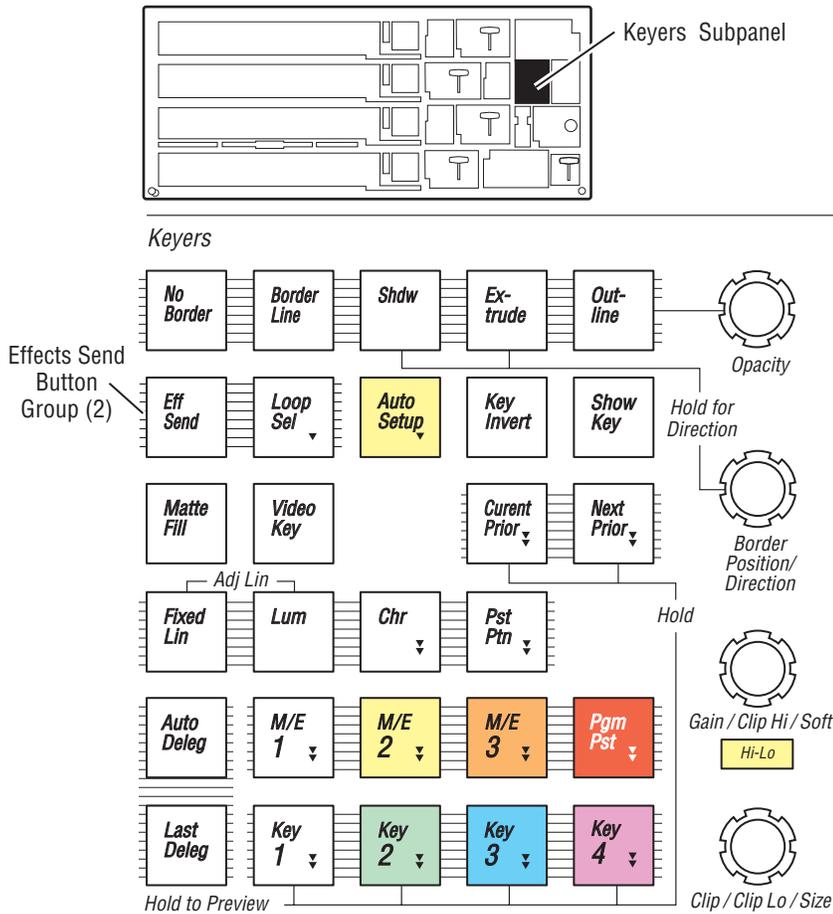
A special device type (**DPM Other**) is available to support Effects Send. Effects Send requires having a DPM device defined, but the existing DPM device types are only for CPL control. Defining a non-CPL device using **DPM Other**, then controlling it with PBus II or GPI provides control of Effects Send by non-CPL devices.

Once configured, you can activate Effects Send on the Main panel and the Effects Send menu.

Effects Send Main Panel Controls

Effects Send controls reside on the Kalypso Main panel Keyers subpanel (Figure 227).

Figure 227. Keyers Subpanel



- The **Eff Send** button toggles Effects Send on or off for the delegated keyer.
- The **Loop Sel** button is an SPOP that delegates the Menu panel to the Effects Send menu (Figure 228, where additional controls are available). The Effects Send menu can also be accessed by touching **M/E**, **Effects Send**.

Figure 228. Effects Send Menu



Effects Send Delegation

The matrix of 16 buttons on the upper left delegates an individual key for Effects Send menu control. The delegated keyer will be yellow. With a keyer delegated, touching one of the Internal Transform Engines buttons (**TE 1 - TE 6**) at the lower part of the screen activates Effects Send for that keyer using that Transform Engine channel. Since all Transform Engines operate identically, it does not matter which one is used each time. Touching one of the External Loops buttons on the lower right will assign an external Effects Send path for the delegated keyer. Buttons grayed out are inactive. In [Figure 228](#) two Transform Engines are installed, and an External DPM is not configured for use with Effects Send.

Touching the **Efx Send Active** button will toggle Effects Send on or off for the delegated keyer. When toggled off, the Transform Engine or DPM Effect Send path channel becomes available for assignment to another keyer.

Touching the **Lock** button locks the assignment of that Transform Engine or DPM to that keyer, and it will not be released when Effects Send is toggled off. Locked keyer touch buttons display a red indicator.

Two status indicators can appear above each delegation button. When Effects Send is on, **Send** appears. **On Air** appears when that keyer is being output by PGM PST. The PGM PST A bus is always considered on air.

Krystal DPM

A Krystal DPM offers the highest performance when configured to a Kalypso system via Combined Program Language (CPL). Peripheral Bus II and GPI interfaces are also available. This section covers CPL control.

Refer to the Grass Valley *Krystal DPM* documentation set for additional information.

CPL Interface

The following CPL interface functions are supported:

- Krystal effect recall via E-MEM,
- CPL effect run control,
- Krystal control of Kalypso Aux buses for source selection (keyframable), and
- Effects Send.

Krystal Combiner Requirements

If the Kalypso system feeds a background video input to an optional Krystal Combiner, a serial digital delay device is needed to time the background video to the video passing through the Krystal DPM.

Control Interface Cabling

An RS422 cable connects a **422/CPL** port (J7 or J8) on the Kalypso Video Processor frame Control I/O module to the Krystal Effect Manager I/O module **Switcher J4** port. On multiple-user systems with multiple switchers, each switcher is generally dedicated to a separate Krystal Effect Manager. Otherwise, arrangements must be made for signal control routing external to the Krystal and switcher control systems.

Video Cabling

Kalypso system outputs 41 through 48 are for Effects Send for an external Digital Effects system (eight pairs available). AUX outputs 41 and 42 are to correspond to Aux 1A and 1B, etc.

Krystal DPM Inputs

Each Krystal Video Processor frame has two pairs of serial digital video inputs (Video A, Key A, Video B, Key/Mask B). How you connect these inputs to the Kalypso system depends on whether you use the External

Source Selection, Internal Switching, or A/B Input Routing features available on the Krystal DPM. These configurations provide different operational capabilities. See the *Krystal 4300 Installation and Service Manual* for more information.

Krystal DPM Outputs

Each Krystal Video Processor frame has three video outputs: Key/Depth, Preview, and Program. How you connect these outputs to the Kalypso system depends on the Krystal options available (Combiners, Graphics, etc.) and your specific facility configuration. See the *Krystal 4300 Installation and Service Manual* for more information.

Effects Send

The Kalypso system can be setup for Effects Send. See [Effects Send Configuration on page 377](#).

Kalypso Required Settings

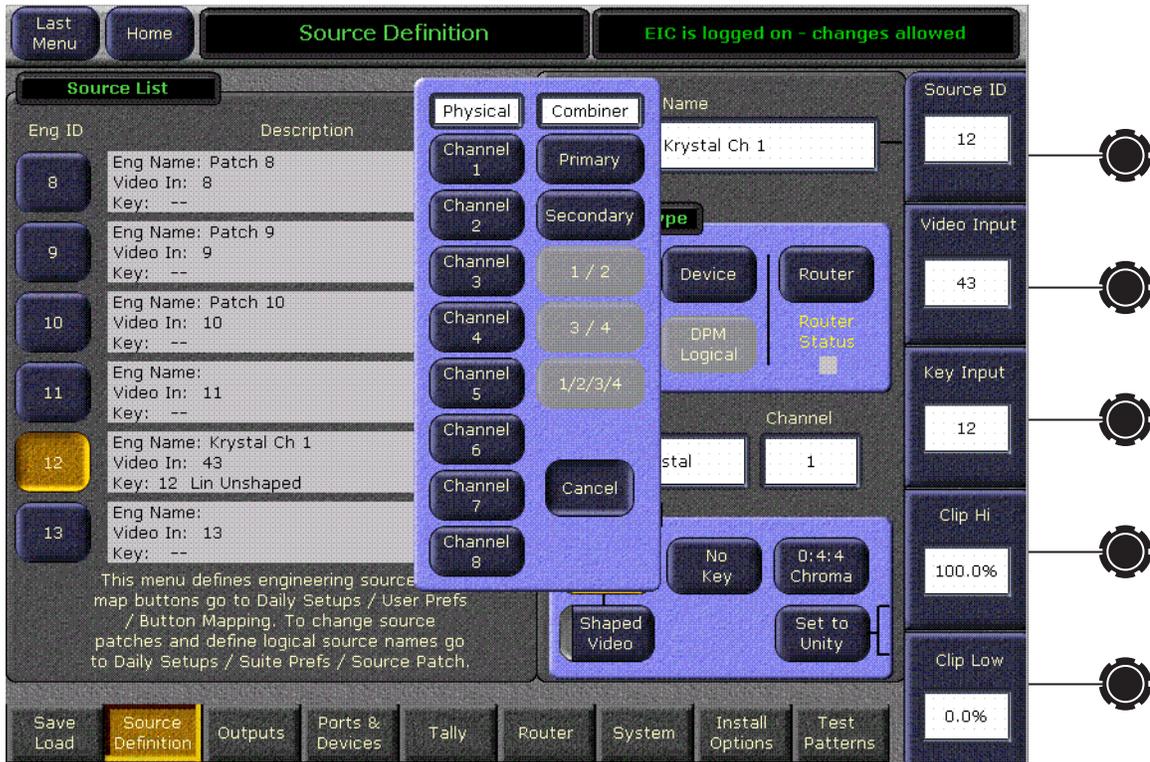
The Kalypso system Inputs, Outputs, and External Interfaces must be properly configured for successful integrated DPM operation. Some of the specific settings involved are listed in [Table C-1](#).

Table 57. Kalypso Configuration Settings for Krystal

Menu	Pane/Category	Setting
Eng Setups - Sources (for each Krystal source)	Name	Enter descriptive name of source
	NickName	Enter short name for source
	Type	DPM Physical
	DPM Physical	Device: (Select defined Krystal device, see below) Channel: (Select Krystal Output)
Eng Setups - Device/Ports (define the device, then use for each source above)	Show	DPM
	Edit Device	Device Name: (Enter descriptive name of Kalypso system)
		Device Type: DPM Krystal
		To DPM: (Identify Aux Buses used by each Krystal channel) Channels: (Specify number of Krystal Channels) See Figure C-4 on page C-7 .
Eng Setups - Outputs (for each Kalypso output going to Krystal)	Mode	Aux Pair
	Aux Bus Pairs	(Select Aux Bus for each output)
Aux Bus (for each Aux Bus used by Krystal)	B Bus	Key

Figure 217 on page 366 shows a Kalypso source with **DPM Physical** selected, and typical names for that source and its Krystal Device Definition. Touch the **Channel** data pad to access a menu for selecting the Krystal system output for that Kalypso source (Figure 229).

Figure 229. Channel Assignment Selection Pane



Other Kalypso settings may also need to be set that are unique for your facility.

E-MEM Level Groups

In Release 11.0, Krystal CPL control is associated with the **DPM E-MEM** level group on the Kalypso Main panel by default. This can be changed in the Suite Prefs - E-MEM Prefs menu. See the *Kalypso User Manual* for details.

Source Number Mapping

The mapping of Kalypso sources to DPM sources for Release 5.0 and later versions are shown in [Table 58](#).

Table 58. Kalypso Source ID to DPM Source Mapping

DPM Source Number	Kalypso Source Name	Kalypso Source ID Number
0	Black	118
1 through 57	1 through 57	1 through 57
58	StillStore 1	121
59	StillStore 2	122
60	M/E 1 pgA	93
61	M/E 2 pgA	99
62	M/E 3 pgA	105
63	PgPst pgA	111

Krystal Required Settings

Table 59. Krystal Configuration Settings for Kalypso

Menu	Setting
External Control Prefs	Switcher Port: Enable
Src Select Device	External Switcher Device Installed
Src Select Config	[V, K] or [V, K, M] inputs assigned, depending on cabling
Port Config	Switcher CPL protocol

Other Settings

- Coordinate video shaping on the Switcher, Krystal Channel, and Combiner as required, and
- Set timing of channel and combiner inputs and outputs as required.

Interface Operation Test

After completing the cabling and configuration, you should be able to:

- Learn a Kalypso system E-MEM specifying a Krystal effect,
- Recall that E-MEM register with the Krystal effect,
- Run the E-MEM and see the Krystal effect track, and
- Jog the Krystal effect forward and backward with **Next KF** and **Prev KF**.

GVeous Digital Effects System

A GVeous system offers the highest performance when configured to a Kalypso system via CPL. This section covers CPL control. Peripheral Bus II and GPI interfaces are also available. See *Peripheral Bus II* on page 394 for information.

Also refer to the GVeous documentation set for additional information.

Interface

The following interface functions are supported:

- GVeous effect recall via E-MEM,
- CPL effect run control,
- GVeous control of Kalypso Aux buses for source selection (keyframable), and
- Effects Send.

Note The GVeous system supports Kalypso sources 1 through 69. Because Kalypso StillStore output sources are numbered 121 through 128, GVeous cannot directly change StillStore sources. Use the Kalypso E-MEM system to change StillStore sources during a GVeous effect.

GVeous Requirements

The GVeous system must be equipped with the CPL Protocol Converter module.

Control Interface Cabling

Connect a **422/CPL** serial port (default is J8) on the Kalypso Video Processor frame Control I/O module (located in slot B1) to the **HDLC** port on the GVeous frame using a standard 9-pin RS-422 machine control cable. Also connect the GVeous CPL module to the GVeous **Aux** or **Editor** port, using a custom serial cable provided with GVeous. This cable is similar to an RS-422 cable except that pins two and seven are cross-wired and one connector is 25-pin. HDLC may need to be reset.

Video Cabling

On GVeous, when Aux Bus control is selected each GVeous channel corresponds to one external input. Each channel is dedicated to an odd-numbered GVeous input, so Kalypso Aux bus pairs 1, 2, 3, 4 should therefore be connected to GVeous inputs 1, 3, 5, and 7 (Table 60).

Table 60. Kalypso Aux Buses and GVeous Channels

Kalypso Aux Bus Pairs	GVeous Input	GVeous Channel
Aux 1A	1 Video	1A
Aux 1B	2 Key if in V/K mode	1B
Aux 2A	3 Video	2A
Aux 2B	4 Key if in V/K mode	2B
Aux 3A	5 Video	3A
Aux 3B	6 Key if in V/K mode	3B
Aux 4A	7 Video	4A
Aux 4B	8 Key if in V/K mode	4B

Kalypso system outputs 41 through 48 are for Effects Send for an external Digital Effects system (8 pairs available). AUX outputs 41 and 42 are to correspond to Aux 1A and 1B, etc.

Source Number Mapping

Two device types for Kalypso source number mapping exist for GVeous, to match different versions of GVeous software. Earlier GVeous software supported only 64 sources using CPL. Kalypso Release 5.0 changed its mapping to accommodate that restriction. Updated GVeous software (version 6.2) supports 128 sources. Use the device type that matches your GVeous software version.

- **GVeous 128** supports the new mapping of all available sources (Table 230).

Figure 230. GVeous 128 Kalypso Source ID to DPM Source Mapping

DPM Source Number	Kalypso Source Name	Kalypso Source ID number
0	Still Store 8	128
1 through 127	(various)	1 through 127

- **GVeous 64** supports the previous mapping established in Kalypso Release 5.0 (Table 231).

Figure 231. GVeous 64 Kalypso Source ID to DPM Source Mapping

DPM Source Number	Kalypso Source Name	Kalypso Source ID Number
0	Black	118
1 through 57	1 through 57	1 through 57
58	Still Store 1	121
59	Still Store 2	122
60	M/E 1 pgA	93
61	M/E 2 pgA	99
62	M/E 3 pgA	105
63	PgPst pgA	111

Note that the **Krystal** DPM device type has not changed and continues to support up to 64 sources.

Kalypso Required Settings

Table 61. Kalypso Configuration Settings for GVeous

Menu	Pane/Category	Setting
Eng Setups - Sources (for each Krystal source)	Name	Enter descriptive name of source
	NickName	Enter short name for source
	Type	DPM Physical
	DPM Physical	Device: (Select defined GVeous device, see below) Channel: (Select Output from GVeous)
Eng Setups - Device/Ports (define the device, then use for each source above)	Show	DPM
	Edit Device	Device Name: (Enter descriptive name of GVeous system)
		Device Type: GVeous DVeous
		To DPM: (Identify Aux Buses used by each GVeous channel) Channels: (Specify the GVeous Channels). See Figure 229 on page 382 .
End Setups - Outputs (for each GVeous output going to Krystal)	Mode	Aux Pair
	Aux Bus Pairs	(Select Aux Bus for each output)
Aux Bus (for each Aux Bus used by GVeous)	B Bus	Key

E-MEM Level Groups

Krystal CPL control is associated with the **DPM** E-MEM level group on the Kalypso Main panel by default. This can be changed in the Suite Prefs - E-MEM Prefs menu. See the *Kalypso User Manual* for details.

GVeous Required Settings

Table 62. GVeous Settings

Menu	Setting
Remote Enable	Aux or Editor port - ON
	LINC - OFF
	Protocol - CPL
	Baud-38.4kb
	Parity - even
Input Menu	Aux Channels - 1, 3, 5, 7
	Select AUX control
	Select crosspoints on KF by KF basis

Profile VDR

Two mechanisms are available for Profile VDR control by Kalypso systems.

- Direct serial control (BVW-75, Odetics, or optional AMP protocols), and
- Encore control (network control using the KAL-IF-PROFILE Machine Control option).

Direct Serial Control

Direct serial control of Profile VDRs using the BVW-75 and Odetics protocols is standard on Kalypso systems. The AMP Serial Machine Control feature is a software enabled option.

None of these protocols support negative timecode. Each controlled Profile VDR uses a Kalypso system serial port.

BVW-75 Protocol

The BVW-75 protocol treats the device like a VTR, and so does not support clips. The BVW protocol specifies a 6 frame latency for start commands (to accommodate mechanical VTRs). This delay applies to the external device, not the Kalypso system. A Profile operating using the BVW protocol follows the specification and will delay the execution of commands by this amount, which is probably not desired.

Odetics Protocol

The Odetics protocol supports only the default folder and DOS style eight character plus extension file names. When a Profile is set to use the Odetics protocol it will not impose a delay, and latency essentially disappears. This is the preferred setting for quick real time response with Profile VDRs. Note that DDRs from other manufacturers may or may not impose delays when operating with either protocol. Refer to the documentation provided with your DDR for specific instructions.

AMP Protocol

The AMP protocol supports multiple clip directories and clip file names of up to 80 characters.

Note Do not create file names that have the pound character (#) along with either the dash (-) or underscore (_) character. This can inhibit clip access.

Once configured with the AMP protocol, touching a **Preset Clip** or **Program Clip** data pad on the External Device Control menu brings up a menu from which you can select the desired folder and then choose a clip

in that folder to load for playback. A similar menu is used with the Clip Browser on the External Device Event List menu, and for loading clips in the Timeline Events menu.

The Kalypso Machine Control subpanel always shows the clip list of the last selected folder. If you change a clip locally on the Profile DDR, that clip name will not be updated on the Kalypso External Device menus. If the folder list or clip list are incomplete, re-enabling the device will fetch the entire folder and clip list.

Serial Device Control Configuration

Direct Profile VDR control is configured by creating a device definition object (Figure on page 374), associating a serial port to that device definition, and then selecting that device definition for that source in the Source Definition menu.

Once configured, Profile VDR control is available via the Machine Control subpanel on the Main panel, and on the External Device menus.

Encore Control of Profile VDRs

Encore (OmniBus) software can be used to interface Profile VDRs to the Kalypso system. The interface option consists of:

- Sharer application, responsible for overseeing the entire OmniBus network (included on the Kalypso Software CD),
- System Manager application, used to configure users and their access to the network (included on the Kalypso Software CD),
- OmniBus User Interface (OUI) application (included on the Kalypso Software CD), and
- Video Disk Recorder Control System (VDRCS) application (installed on each Profile).

The Sharer and System Manager applications must be present somewhere in your facility, but only one instance of each should be installed on the same network. If you already have OmniBus running at your facility, you should not install these applications again onto your Kalypso system. If you are not already using OmniBus, you can install the software onto the Kalypso system using the Kalypso Install program.

The VDRCS software is available as an option (KAL-IF-PROFILE) from Grass Valley. This software is installed onto each Profile VDR, not the Kalypso system.

Interface

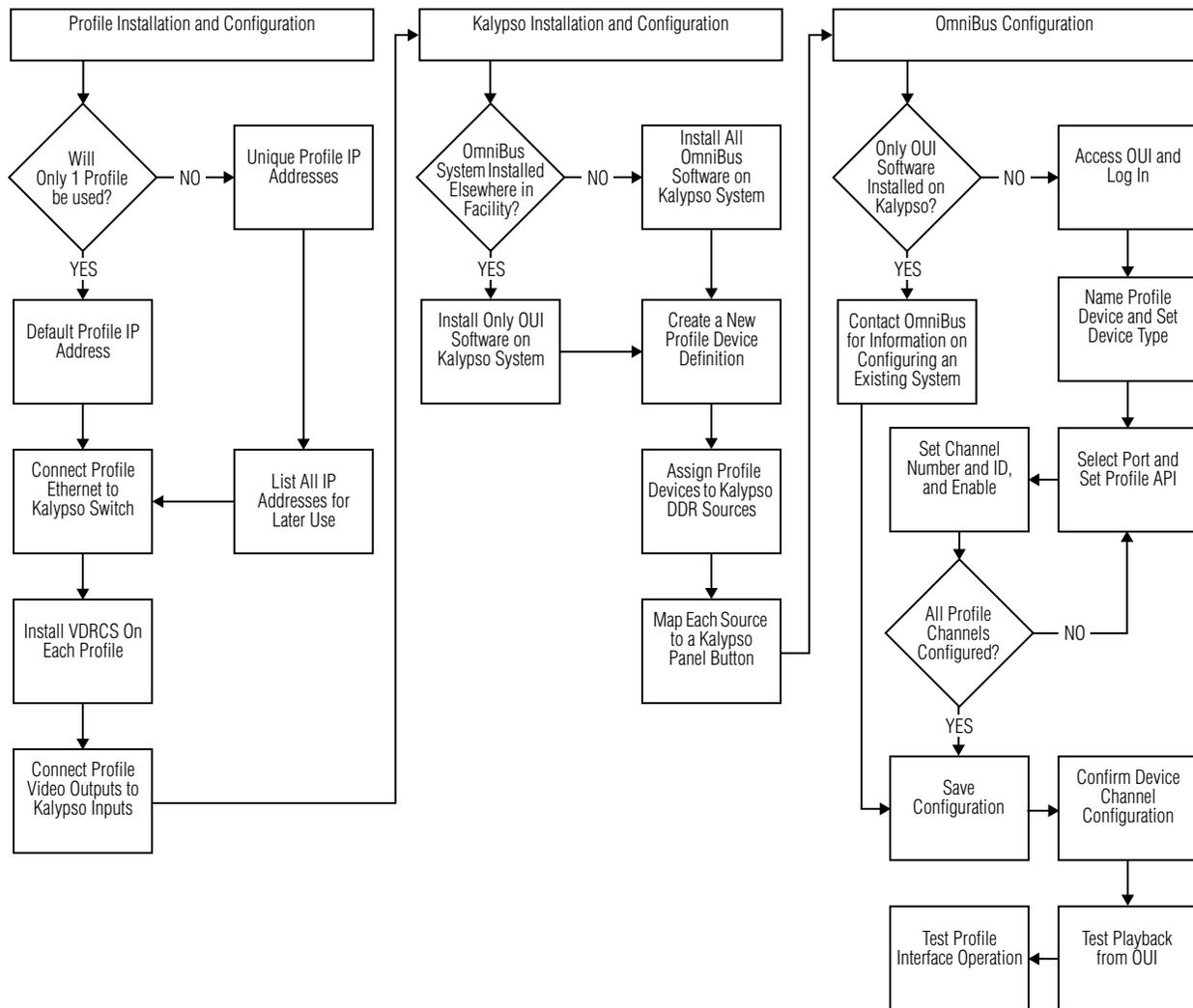
The following interface functions are supported:

- Clip load from Profile,
- Clip name display on Kalypso Machine Control panel readout, and
- Clip Play, Stop, FF, RW, Cue.

Overall Profile Configuration Procedure

Interfacing a Profile VDR with the Kalypso system involves configuring the Profile VDR, the OmniBus software used for system integration, and the Kalypso system (Figure 232). All three procedures must be completed in the order displayed in the flow diagram.

Figure 232. Profile Interface Flow Diagram



Exact installation and configuration procedures are subject to change, as the OmniBus system, Profile VDR, and Kalypso systems are further developed. The latest procedures are covered in detail in the separate *Machine Control Interfaces Installation Instruction Manual*, included on the Kalypso Documentation CD.

VTR Control

Two mechanisms are available for VTR control by Kalypso systems.

- Direct serial control (BVW-75 protocol), and
- Encore control (network control using the KAL-IF-SERIAL and KAL-IF-VTR Machine Control options).

Direct Serial Control

Direct serial control of VTRs is standard on Kalypso systems. Each controlled VTR uses a Kalypso system serial port.

Direct VTR control is configured by creating a device definition object for the VTR specifying BVW-75 protocol ([Figure 224 on page 374](#)), associating a serial port to that device definition, and then selecting that device definition for that source in the Source Definition menu.

Once configured, VTR control is available via the Machine Control sub-panel on the Main panel, and on the External Device menus.

Encore Control

Introduction

Encore (OmniBus) software and serial engine hardware is used to interface VTRs to the Kalypso system via Ethernet. The interface options consist of:

- Serial Engine frame (the hardware VTR Interface),
- Sharer application, responsible for overseeing the entire OmniBus network (included on the Kalypso Software CD),
- System Manager application, used to configure users and their access to the network (included on the Kalypso Software CD),
- OUI application (included on the Kalypso Software CD), and
- VSVC application (Serial Engine software).

The Sharer and System Manager applications must be present somewhere in your facility, but only one instance of each should be installed on the same network. If OmniBus is already running at your facility, do not install these applications again onto your Kalypso system. If OmniBus is not already running at your facility, install the software onto the Kalypso system using the Kalypso Install program.

The Serial Engine and VSVC software is available as an option (KAL-IF-VTR).

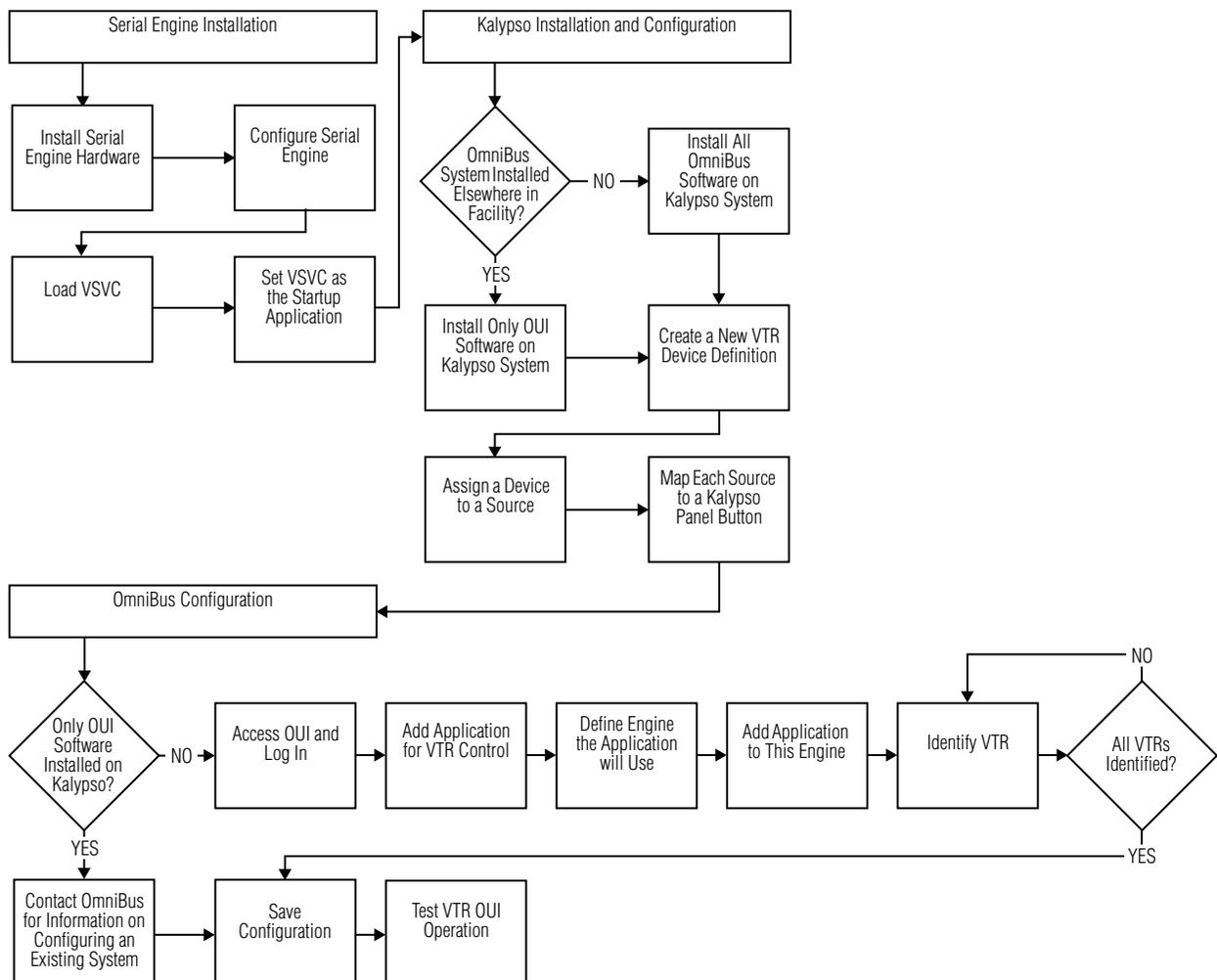
Interface

The following interface functions are supported:

- Clip load from Profile,
- Clip name display on Kalypso Machine Control panel readout, and
- Clip Play, Stop, FF, RW, Cue.

Interfacing a VTR with the Kalypso system involves configuring the Serial Engine hardware, the Kalypso system, and the Encore software used for system integration (Figure 233).

Figure 233. VTR Interface Flow Diagram



Exact installation and configuration procedures are subject to change, as the OmniBus and Kalypso systems are further developed. The latest procedures are covered in detail in the separate *Machine Control Interfaces Installation Instruction Manual*, included on the *Kalypso Documentation CD*.

Peripheral Bus II

Introduction

The Peripheral Bus II interface protocol accommodates up to 24 peripheral devices on the same serial bus. The Kalypso system acts as the master controller on the bus. Each peripheral device needs a unique Peripheral Bus II address (0 through 23), which is generally set in software on the peripheral device itself. The Kalypso system uses these addresses to send commands to the correct peripheral device.

Peripheral Bus II commands generally are triggers sent from the Kalypso system that initiate an action on the peripheral device. Each peripheral device supporting the Peripheral Bus II protocol will have its own set of trigger commands. Refer to the documentation provided with the peripheral device for specific information about its capabilities.

Kalypso version 10.1 adds a one field delay for PBus triggers to improve the deterministic behavior of E-MEM effects containing these triggers.

Kalypso System Peripheral Bus II Configuration and Operation

Kalypso Control Interface Cabling

Connect the Kalypso Video Processor frame serial port assigned to PBus II (the default is J10, port 1 on the Control I/O module located in Slot B1) to the serial port on the device to be controlled, using a standard 9-pin RS-422 cable.

Kalypso Communication Settings

The Kalypso system uses the following serial bus settings for Peripheral Bus II control:

Table 63. Serial Port Settings

Baud Rate	38.4 kbps
Parity	Even
Stop Bits	1
Data Bits	8

E-MEM Level Groups

In Release 11.0, Peripheral Bus II control is associated with the **Misc 6** E-MEM level group on the Kalypso Main panel by default. This can be changed in the Suite Prefs - E-MEM Prefs menu. See the *Kalypso User Manual* for details.

Peripheral Bus II Triggers

Different devices support different Peripheral Bus II trigger functions. On the Kalypso system, you can enter a descriptive name of each logical device, and its triggers. In Eng Setups, press the **Ports & Devices** category selection button, touch the **PBus 2** button, then touch either the **New Device** or **Edit Device** buttons to access the menu (Figure 226 on page 376). The **PBus Address** number on this menu must match the external device being controlled.

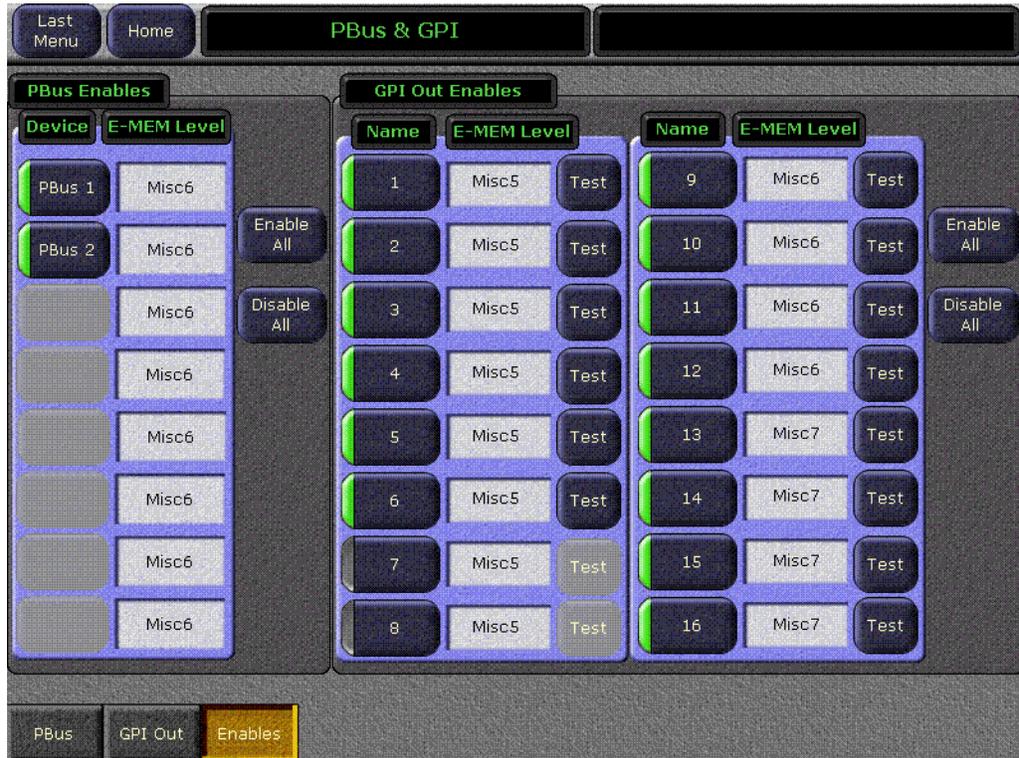
These names will then appear on the PBus 2 GPI menu, accessed by pressing the **PBus GPI** button on the Menu panel (Figure 234). Touching the buttons on this menu activates that trigger, and this can be saved to E-MEM.

Figure 234. PBus 2 Menu



Peripheral Bus II devices and triggers can be enabled and disabled with the PBus2 Enable menu, accessed by touching the **Enables** category button at the bottom of the screen (Figure 235). The left side of the menu is used for Peripheral Bus II control. GPI Out control resides on the right side of the menu.

Figure 235. PBus2 Enable Menu



Krystal and GVeous Peripheral Bus II Control

Configuration

Specific settings are required on Krystal and GVeous systems for Peripheral Bus II control (Table 64)

Table 64. GVeous and Krystal Settings

Menu	Setting
(Krystal) External Control Preference (GVeous) Remote Enable	Editor port - ON.
	Protocol - Peripheral
	Baud-38.4kb
	Parity - even
	Address - (same as Kalypso Device)

Peripheral Bus II Triggers

Table 65. Krystal and GVeous Triggers

Number	Trigger
1	Run Fwd
2	Run Rev
3	Pause
4	Freeze
5	Unfreeze

When Peripheral Bus II is enabled on the Krystal system, Learn and Recall commands are automatic. See the following section for GVeous system limitations.

GVeous Limitations

The following limitations reside in the GVeous system. The commands issued by the Kalypso system are formatted correctly. These limitations do not apply for Krystal.

- Under Peripheral Bus II control, GVeous correctly recognizes Kalypso registers 0 through 39. Higher Kalypso registers are not processed correctly by GVeous, even though the Kalypso system sends the correct register number out Peripheral Bus II.
- Under Peripheral Bus II control, GVeous correctly handles Peripheral Bus II Learns only when the GVeous current register is 0 through 62.

Kaleidoscope Peripheral Bus II Control

The Kalypso system can control a Kaleidoscope DPM system using Peripheral Bus II control. This has been available since Release 2.0, but was not specifically documented.

Capabilities

The Kalypso interface with Kaleidoscope supports Learn and Recall operations. When a register is learned on Kalypso, the current Kaleidoscope effect number can be learned. Recalling that Kalypso register will then Recall and Run the Kaleidoscope effect.

Kaleidoscope Peripheral Bus II Control

Requirements

The Kaleidoscope system must be equipped with the Serial I/O option.

Control Cabling

Connect serial port J10 (port 1) on the Kalypso Video Processor frame Control I/O module (located in Slot B1) to the Kaleidoscope System Controller Editor Port using a standard 9-pin RS-422 cable.

Kaleidoscope Configuration

Specific settings are required on the Kaleidoscope system for Peripheral Bus II control (Table 66)

Table 66. Kaleidoscope Settings

Menu	Setting
Resource\User Pref\Extern Cntrl\	Enable Serial
System Config\More\Serial Setup	Protocol - Periph II
	Baud - 38.4kb
	Parity - Even
	Periph Addr (same as Kalypso Device)

Limitations

No triggers are supported, and Recall always runs the Kaleidoscope effect.

Lance Design TDC-100 Controller Peripheral Bus II Control

Capabilities

The Kalypso interface with the Lance Design TDC-100 controller supports Learn, Recall, and various Trigger operations.

The first 100 registers of the Lance Design controller correspond to the 100 registers on the Kalypso system. These registers on both systems are numbered 0-99. Learning a register on the Kalypso system stores the corresponding register on the TDC-100 controller with the current cue point and device enable information. Recalling that register on the Kalypso system will recall the TCD-100 register and cue the enabled devices. Trigger commands from the Kalypso system can then be issued to control the devices.

Control Cabling

Connect serial port J10 (port 1) on the Kalypso Video Processor frame Control I/O module (located in Slot B1) to the P-BUS IN port on the TDC-100 frame using a standard 9-pin RS-422 cable.

TDC-100 Configuration

Table 67. Menu Settings

Menu Number	Menu Name	Setting
01	DEVICE NUM FOR A = (or B, C, D)	Same as Kalypso Device
21	SWITCHER TYPE	GVG
22	P-BUS PARITY	EVEN

Peripheral Bus II Triggers

Table 68. TDC-100 Triggers

Number	Trigger
0	Normal Play
1	Recue
2	Variable Play (using displayed speed which can be learned and recalled)
3	Reverse Play at 100%
4	Stop
5	Loop Play
6	Record
7 and above	Normal Play

GPI Outputs

Introduction

GPI Output contact closures are used by the Kalypso system for simple trigger control of external devices. See [Table 5 on page 82](#) for pinout and voltage specifications.

Note Separate GPI Inputs can be used by an external device to trigger an action on the Kalypso system. See the following section.

Configuration

On the Kalypso system, GPI outputs are configured as a device using the Eng Setup Device menu. In Eng Setups, press the **Ports & Devices** category selection button, touch the **GPI** button, then touch the **New Device** button to access the menu ([Figure 219 on page 368](#)).

Kalypso version 10.1 adds a one field delay for GPI Out triggers to improve the deterministic behavior of E-MEM effects containing these triggers.

E-MEM Level Groups

In Release 11.0, GPI Output control is associated with **MISC 5** E-MEM level group on the Kalypso Main panel by default. This can be changed in the Suite Prefs - E-MEM Prefs menu. See the *Kalypso User Manual* for details.

GPI Inputs

Introduction

GPI Inputs can be used by an external device to trigger an action on the Kalypso system. See [Table 4 on page 81](#) for pinout specifications.

Suite Prefs - GPI In Menu

The GPI In menu ([Figure 236](#)) allows programming of the 16 Kalypso system GPI inputs. Various actions can be performed when a GPI contact closes, including selecting a source on a bus, recalling an E-MEM, and triggering a transition. The GPI In menu is reached via **Daily Setups**, **Suite Prefs**, and touching the **GPI In Settings** button.

Figure 236. GPI In Menu



To program a GPI, select the GPI input to program from the scrolling list in the central pane. Then select the action and appropriate qualifiers on the remainder of the menu. In the example above, GPI 1 has been programmed to transition Key 1 on the PGM PST A bus. See the *Kalypso User Manual* for more information.

Editor Interface

Introduction

Basic editor control of the Kalypso system is supported. Capabilities include:

- Source select for A, B, U1, U2, Key 1 - 4, and Aux buses,
- Split Key selection,
- Wipe selection,
- Preview,
- Timeline control (Jog/Go to Time, Run, Rewind),
- Transition Mode, Rate, and Triggers,
- All Stop,
- E-MEM Recall and Run trigger,
- E-MEM learn, and
- E-MEM data transfer.

Installation and Configuration

To install and configure the editor interface:

1. Connect the editor with a standard RS-422 9-pin serial cable to the Kalypso Video Processor frame serial port assigned to the editor (by default this is J11, port 3 on the Control I/O module located in Slot B1).
2. Set the editor to use GVG 4000 Protocol.
3. Set the editor to use the following serial communications settings:

Table 69. *Kalypso Editor Control*

Serial Settings	
Baud Rate	38.4 kbps
Parity	Odd
Stop Bits	1
Data Bits	8

Note You must use the 38.4 baud rate (which is the default setting on the Kalypso system) for proper operation with an editor. Changing the baud rate to different values can cause Kalypso frame communications failures with the editor.

The Kalypso system does not respond with the same timing as a Grass Valley Model 4000 switcher. Edit controller adjustments need to be made to make Kalypso changes line up with other commands issued by the edit controller. See your edit controller manual for adjustment procedures.

Editor Protocol Changes

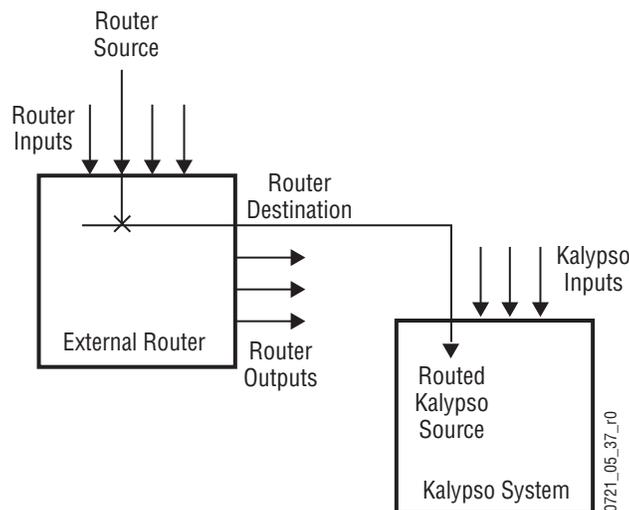
In Kalypso software earlier than version 7.6 editor commands sent to either M/E 0 or M/E 4 would control Pgm-Pst. In later software commands sent to M/E 0 control the primary partition of Pgm Pst, and those sent to M/E 4 control the secondary partition. This change occurred in software version 7.6 to support DoubleTake.

Router Interface

Introduction

The Kalypso system can interface with an external routing system. A routing system connects a router source (router input) to a router destination (router output). Changing the router source sends a different signal to the destination (called a take). A router destination can in turn be connected to a Kalypso input and be configured as a routed Kalypso source (called switcher source in this discussion and in the Kalypso menus). The router acts as a pre-selector for the switcher source, and so increases the number of inputs available to a button on a Kalypso system bus (Figure 237).

Figure 237. Router Source, Router Destination, and Routed Kalypso Source



An external router can be configured into levels, to allow the switching of multiple signals simultaneously. For example, video signals can be organized on one level, and key signals on another. By specifying both levels when giving a router take command, both the video and key signals of a source will be routed to their destinations.

Note Kalypso system router take commands are only applied to all router levels. The external routing system's destinations must be configured with all router levels selected.

Router control panels can also protect router destinations from being changed by other control panels. A protected router destination cannot be changed by a different control panel, but may be changed by the panel that set the protection. Protections help prevent inappropriate router source changes. The Kalypso system can be considered a type of router control panel, and so the Kalypso system can protect router destinations. Kalypso system router protect commands are applied to all router levels.

The names of router sources appear on the Kalypso system source name displays. These names originate from the router system, and their text cannot be changed from the Kalypso system. If a routed Kalypso source has no connection to the router, an **X** appears in place of the router source name. If the router connection exists, but no source has yet been selected for that destination (which can occur during bootup), **No Src** appears.

Features

- Interfaces to the Grass Valley SMS 7000 routing system.
- Kalypso system configuration of routed Kalypso sources.
- Names of router sources are shown on Kalypso panel source name displays.
- Router source selection control via the Kalypso Local Aux panel (or Local Aux subpanel on 2-M/E systems), Main panel, and Menu panel.
- Protection types (None, Protect, and On Air).

Router Interface Installation

Control Interface Cabling

Connect an Ethernet cable from the Kalypso system Ethernet switch to the SMS 7000 network. The Kalypso system can communicate with devices on different networks via a gateway router (see [Gateway IP Address on page 164](#)). If a gateway router is not used, the SMS 7000 router must be on the same subnet at the Kalypso system.

Video Interface Cabling

Connect each SMS 7000 destination to an available input connector on the Kalypso Video Processor frame. You will need to know the module and J number of each input connector used for each destination when you configure the Kalypso source (see *External Router Configuration* on page 405).

External Router Configuration

This procedure assumes the SMS 7000 has already been configured for basic use in your facility, and only needs to be re-configured to interface with the Kalypso system. 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*).

1. Open your existing Router configuration using the SMS 7000 GUI.
2. Go to **Setup/Cfgd Np Internet** and edit **NPI1** so all the levels are selected. Only all level takes are supported.
3. If necessary, go to **Configuration/Destination** and add any new destinations that will be used for the Kalypso system. You will need to specify the proper levels if a destination is a video/key pair and note the names and connector numbers.
4. Send this configuration to SMS 7000 system.
5. Make sure the destinations to be used by Kalypso do not have any protects set on the SMS 7000 system. Protects set on the router cannot be overridden by the Kalypso system.

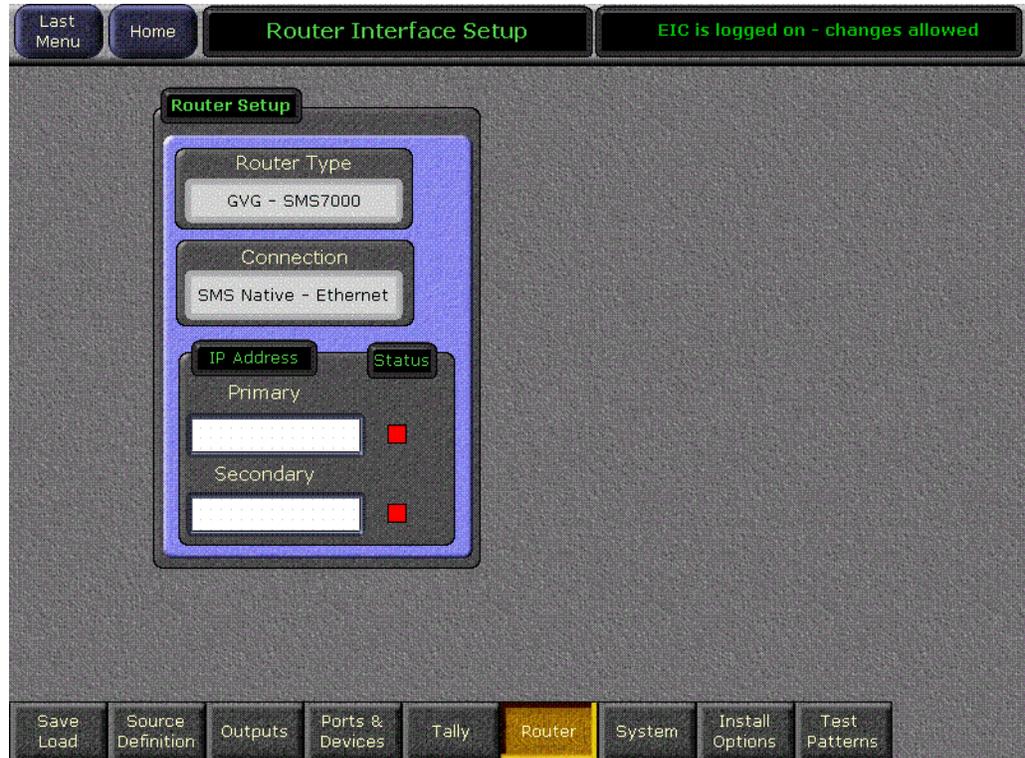
Kalypso Router Configuration Menus

Eng Setup Router Device Setup Menu

The Router Device Setup menu is used to set the IP Address(es) the Kalypso system will use to communicate to the external router. The SMS 7000 system can have an optional redundant, or secondary, controller which takes over should the primary fail. Both router control systems will require their own IP address settings.

Press the **Eng Setup** Menu panel button (or the touch button on the top level menu), then touch the **Router** category selection button to go to this menu (Figure 238).

Figure 238. Eng Setup Router Device Setup Menu



The Connection Status indicator is red when communication is not detected, and goes green when communication is established.

To Set the IP Addresses:

1. Touch the **Primary** IP Address data pad and enter the primary address of the router with the pop-up keypad.
2. Touch the **Secondary** IP Address data pad and enter the secondary IP address of the router, if appropriate. If the router has only one control system, leave this address set to the blank default.

Note If the Kalypso system has been configured with a router IP address but a connection to the router has not been established, changing the IP address in this menu will not make the Kalypso system immediately try to connect to the new router address. The Kalypso system will automatically try to connect after about 30 seconds using the entered router IP addresses.

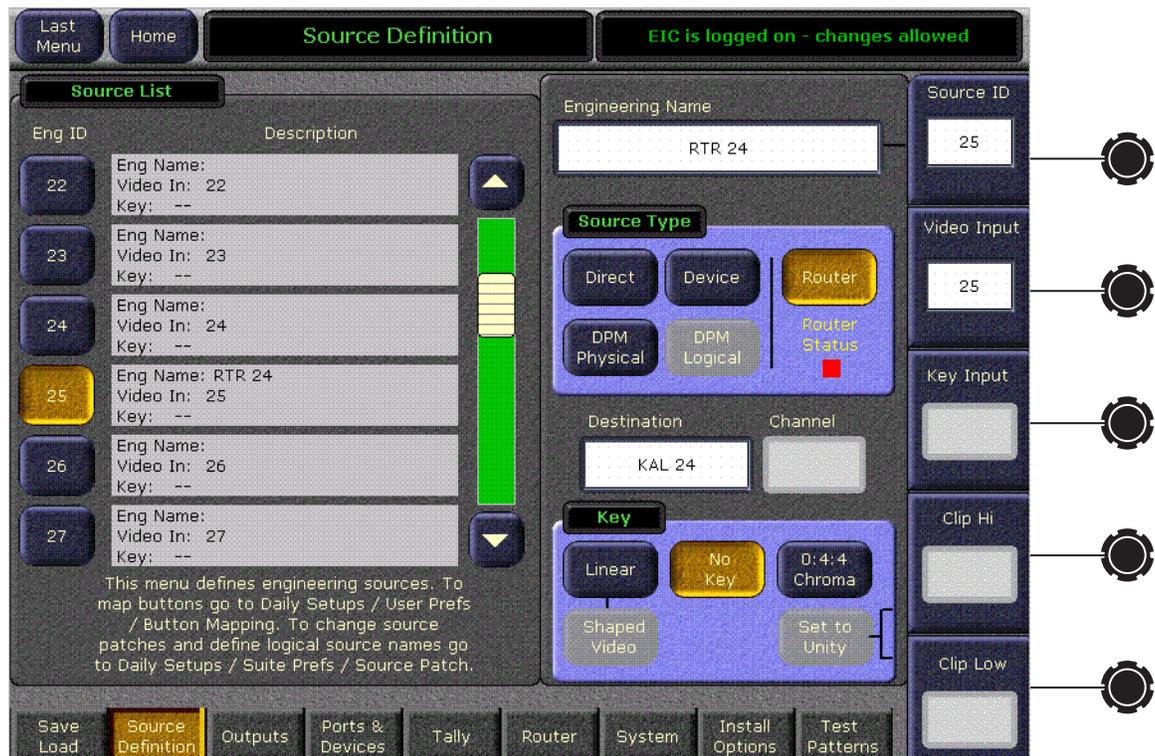
Primary and Secondary Router Communications

The Kalypso system will initially use the primary router IP address for communications. If the primary control system fails to respond, the Kalypso system will attempt to use the secondary IP address for router communications, and if successful will continue using it in the future. If communications then is lost to the secondary control system, the Kalypso system will attempt to reestablish communications with the primary router control system.

Eng Setup Source Menu

The Eng Setup Source menu is used to define routed Kalypso sources, which includes specifying which router destination will be associated with each switcher source. Press the **Eng Setup** Menu panel button, then touch the **Sources** category selection button, to go to this menu (Figure 239).

Figure 239. Eng Setup Router Select Menu



1. Select the Kalypso source to be configured with the router on the left scrolling list.
2. Touch the Video Input data pad and enter the number of the Kalypso input that will be used with the router video destination.

3. If the routed source will have an associated key signal, touch the appropriate Key Input button, then touch the Key Input data pad and enter the number of the Kalypso input that will be used with the router key signal destination.

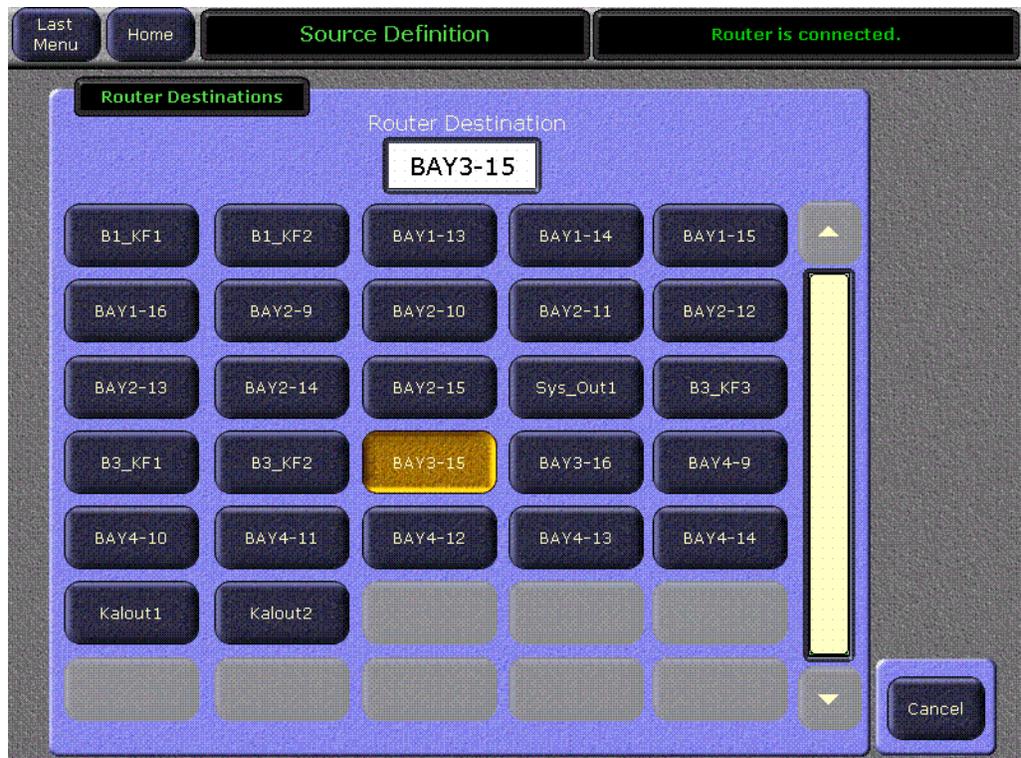
Note If you assign a key input, the router system needs to be configured to switch that key destination along with the video destination. Router levels can be used to accomplish this.

4. Touch the **Router** type button to identify it as a routed Kalypso source.

Note The adjacent status indicator is green when a router is detected, and red when there is no response. If red, you should check the Kalypso or router system configuration or the physical Ethernet connections.

5. Touch the **Destination** data pad to open the Router Destinations menu. The Kalypso Video Processor frame receives a list of destination from the router and displays them on this menu.

Figure 240. Router Destination Selection Menu



6. Touch the button for the desired destination to assign it to the previously selected Kalypso router source. Alternatively, you can touch the Router Destination data pad on this menu and enter the exact name of the router destination. After the selection you return to the previous menu.

7. Complete the source definition by entering a name, nickname, etc. using the standard source definition procedure.

Button Mapping

Once the sources are defined, they can be mapped to source buttons using the standard button mapping procedure, using the Button Mapping menu accessed via **Daily Setups, User Prefs, Button Mapping**. See the separate *Kalypso User Manual* for specific button mapping procedures.

To test operation, select the Local Aux panel in the menu and map some router sources on a bus on that panel.

Test Operation

Once configured, Local Aux panel buttons mapped to router sources will display their router source names. You should be able to change these sources using the Local Aux panel.

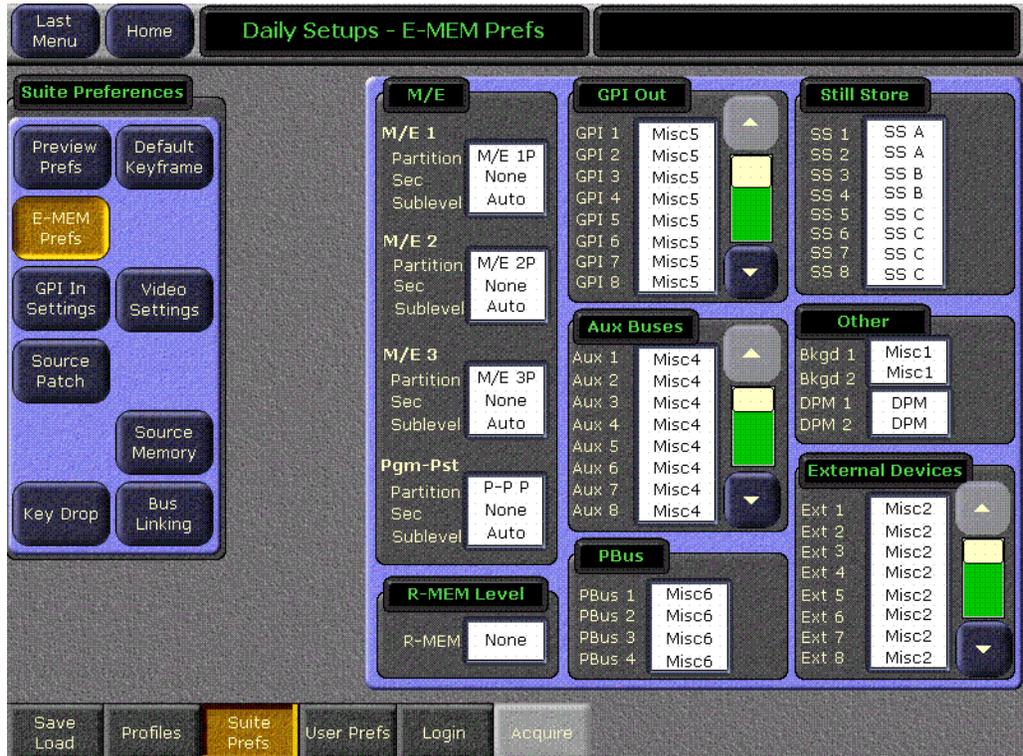
Router source selection is a two step process. You first select the switcher source you wish to change, and then select the new router source for that destination. Prompting in the lower left area of the panel indicates which step should be performed next.

1. Select one of the router sources on the PGM or PST bus so it is displayed on a monitor.
2. Press the **Router Assign** button on the Local Aux panel to enter Router Assign Mode (the button blinks while in this mode). The source name displays will change to show only the routed Kalypso sources, with their current router source name. All other buttons and displays go dark.
3. Choose a switcher source by pressing its source select button. The **Shift** and **Unshift** buttons can be used to access additional switcher sources. After selection, the source name displays will change to show the names of the available router sources. The currently selected router source will be backlit in red.
4. Select a router source for the chosen switcher source by pressing the source select button displaying the name of the desired source. The video on the monitor will change to the new source. After selecting a router source, the system returns to [Step 2](#) and you can select another switcher source to change.
5. When finished, press the **Router Assign** button on the Local Aux panel to return it to normal operation.

E-MEM Control of R-MEM

You can assign R-MEM to an E-MEM enable group, to permit E-MEM control. Go to the E-MEM prefs menu by touching the **Daily Setups** Menu panel button, then touching **Suite Prefs, E-MEM Prefs** (Figure 241).

Figure 241. E-MEM Prefs Menu



By default R-MEM is not assigned to any enable group. To assign, touch the R-MEM data pad and then choose the enable group you wish to use from those displayed.

CAUTION Make sure the R-MEM enable group you choose is only enabled when you actually need to use it during effect recalls. Confusing source selection button changes can occur otherwise. Using E-MEM Auto Recall can help control when groups are enabled.

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