## Section 6A – Karrera & Kayenne Technical Frames

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## Karrera & Kayenne 1.5G and 3G Frames

- Frames
  - 4 RU & 8 RU - 1.5G
  - 6 RU & 13RU - 3G – K-Frame
  - Power Supplies
  - Boards
- Troubleshooting / Diagnostics
  - Frame Diagnostics Methods:
    - Web Browser
    - Telnet
    - FTP
    - VGA & Keyboard
    - Serial & Hyper Terminal

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## Section 6 A/B – Objectives

### Section Objectives

- Understand the components of the Kayenne/Karrera 1.5G Frame
- Understand the components of the Kayenne/Karrera 3G K-frame
- Know how to troubleshoot the frame modules, fans and Power supplies
- Know the location of the frame ID and Licensing information
- Be able to identify the various connections to the frames
- Know how to access the frame html pages
- Know how to set Frame and IS IP parameters
- Understand where files and software are stored in the frames
- Know how to access the Frame log flies and examine them
- Know how to save the system diagnostic data and send to Grass Valley
- Understand the basic file structure used within the frame
- Know the main dip switch functions on the control processor module

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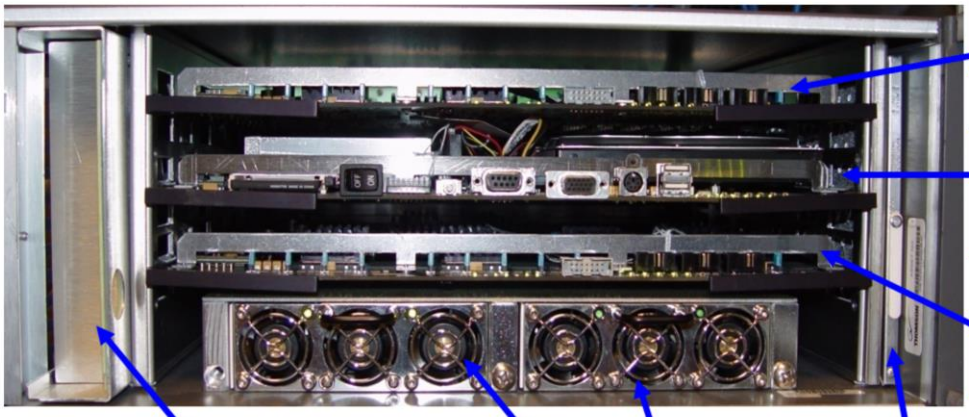
## Karrera & Kayenne 1.5G 2 M/E (4 RU) Frame

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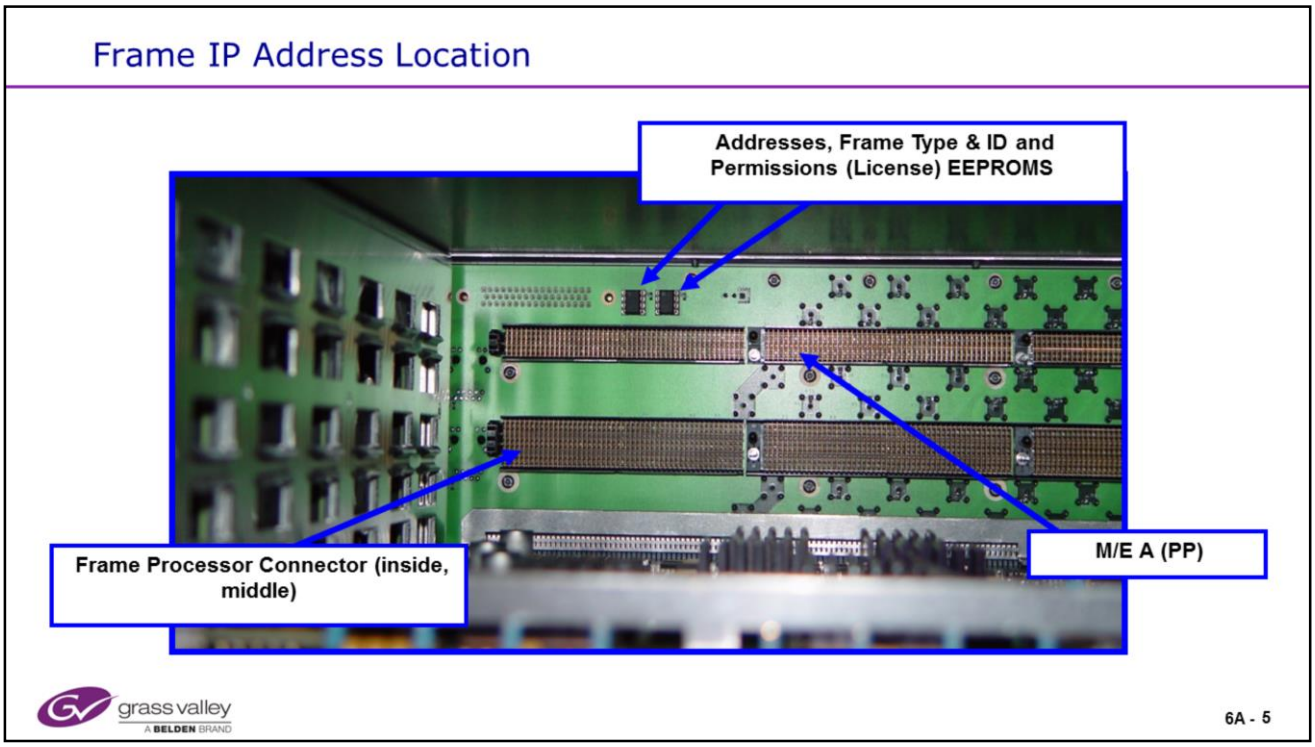
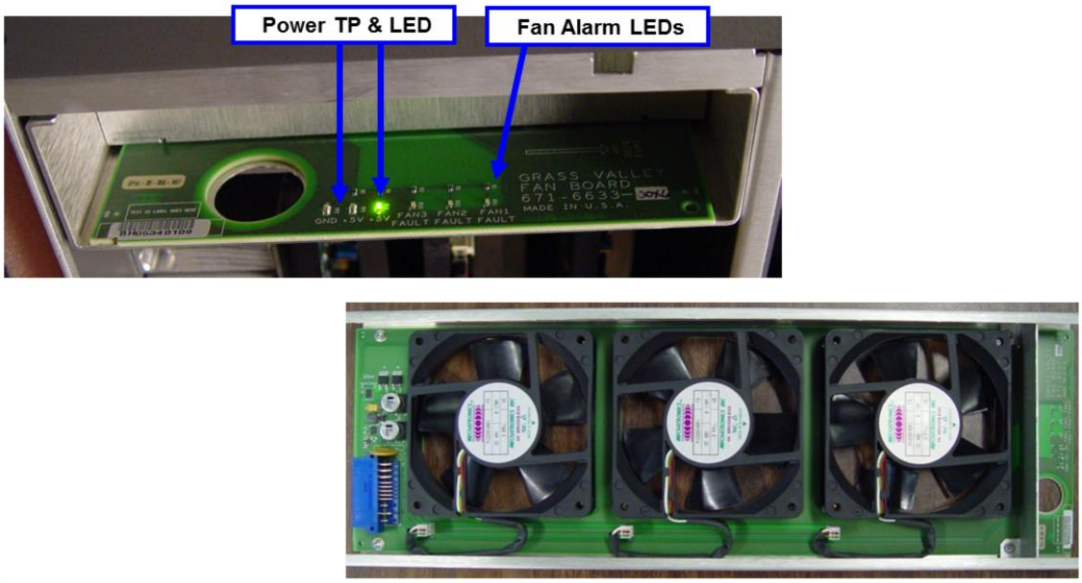



**Backplane Hardware**

- The IP address of the Frame Processor and Image Store, the system permissions (or software license options), last Operating Video Format are stored on two socketed EEPROMS on the Mother board, above the M/E A slot connector.
- The System Name, Type (Kayenne or Karrera) and Serial Number are also stored on these EEPROMs. This is also the registered customer ID number.
- When replacing the frame or the Mother Board, the licenses must be upgraded to the new frame. Either work with Customer Service to get a new license to install OR install the old programmed EEPROMS from the old frame into the newer frame with care.

## 4 RU Three - Fan Board

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**4 RU Frame Cooling**

• The fan assembly on the left side of the frame is removable without shutting down the switcher.

• There are 3 fans each with their own alarm LEDs as well as plus 5 Volt indication and test points.

## 2 M/E Frame Connections (1)


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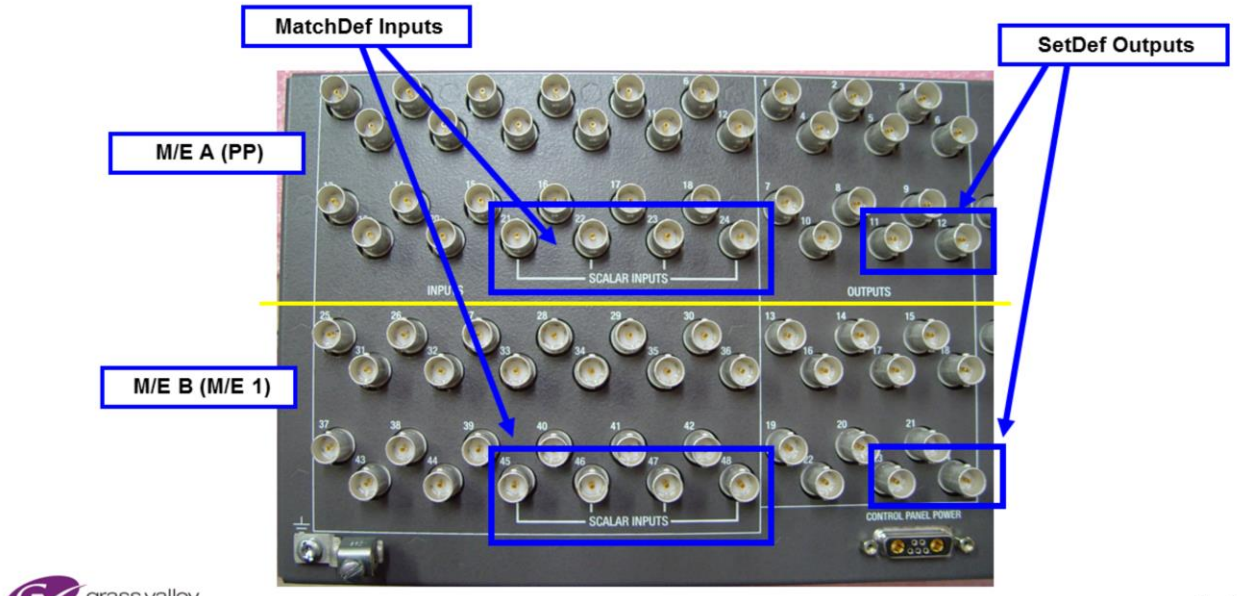
**Frame Connections**

- All input and output connections are fixed in the frame. No rear slot boards are used in this frame.
- Each M/E board has its own tally (24) and GPI/O connections (8).
- The frame can source 48 V.D.C. to the Panel up to a distance of 100’ but is not used in Kayenne or Kayenne – XL applications.

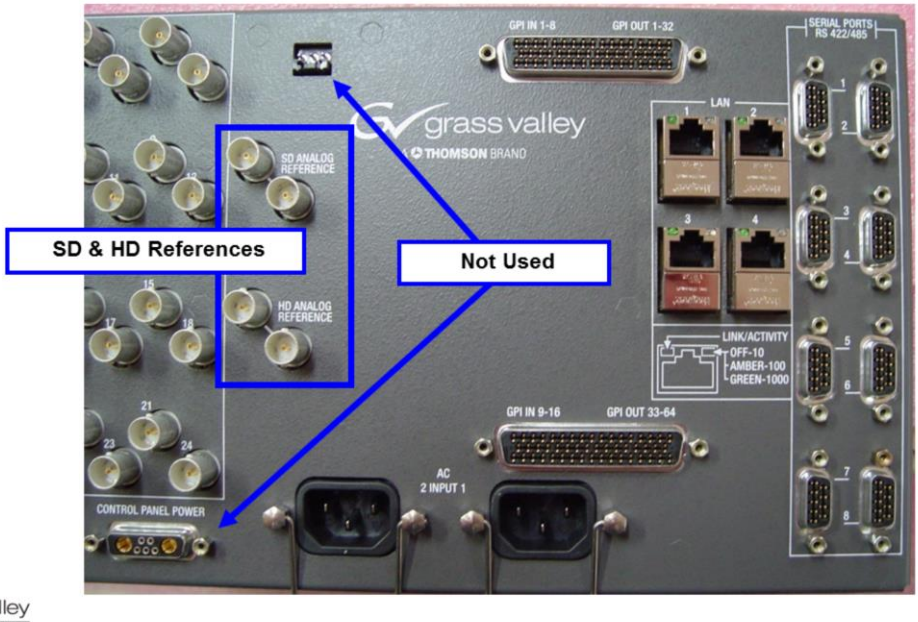
## 2 M/E Frame Connections (2)




**Frame Connections**

- The last 4 inputs of each M/E are scalable. These inputs are not restricted to current switcher operating format. They must be in the same vertical rate (50 or 59.94, etc).
- Each M/E has 12 outputs. The last two of each output group (11 & 12 or 23 & 24) may be configured for the option “SetDef” This is an output Scalar and works as described above.
- All Aux Busses can have safe title applied on an individual basis.
- The Control Panel Power Connector is NOT used in Kayenne or Kayenne – XL applications.

## 2 M/E Frame Connections (3)

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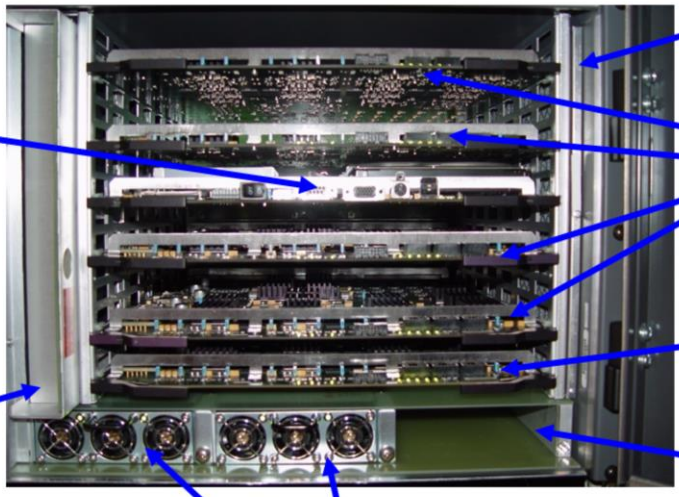
**Frame Connections**

- Eight DB-9 connectors are supplied for any RS-422 or RS-485 purpose (except CPL).
- Four RJ-45 connectors are provided to connect to the panel hardware and other equipment requiring communication with the Kayak. These ports connect to an internal six port 10/100/1000 MHz switch located on the frame processor.
- Link and connect speed LEDs are a part of each RJ-45 connector.
- Analog loop through reference connectors are provided for both SD and HD operation. Color Black is required for SD and Tri-Level Sync for HD.
- Color Black (525 or 625) is required as a reference input on this frame for SD operation. TRI-Level Sync (720p or 1080i) is required as a reference input on this frame for HD operation. Note the different sets of loop through BNC jacks. Please ensure that these inputs are either looped through to another device or properly terminated.
- Note: If TRI-Level Sync is not desired or unavailable for HD operation, A menu selection will allow any of the serial digital video inputs to be selected as an active reference source. Warning: If a video source is selected, this source must always be there to prevent the frame from unlocking.

## Karrera & Kayenne 4 M/E (8 RU) Frame

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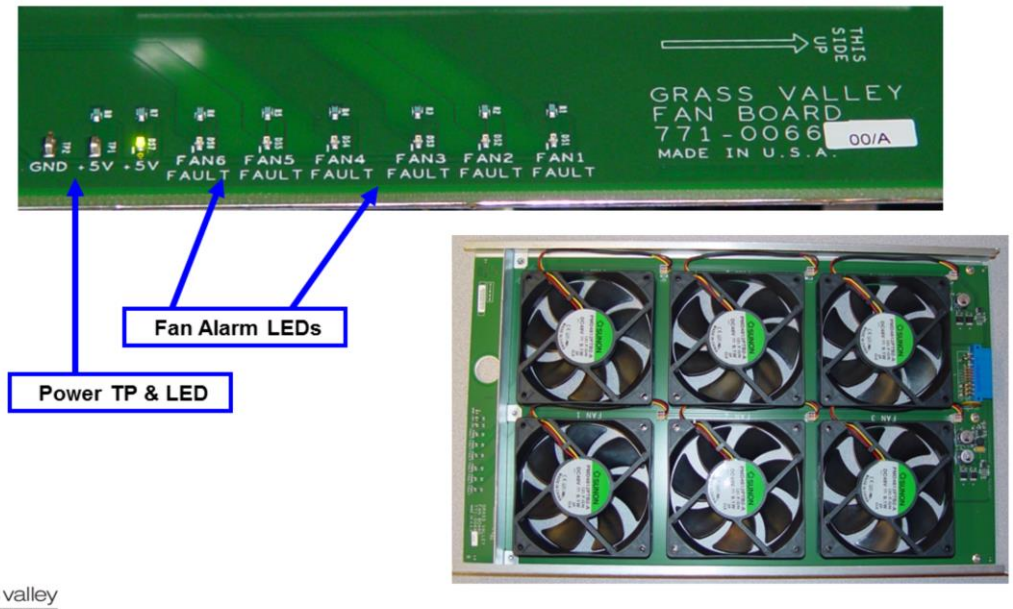
## 8 RU Six - Fan Board

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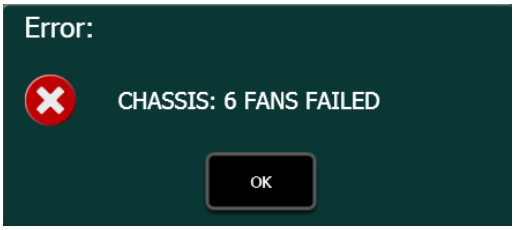
### 8 RU Frame Cooling

- The fan assembly on the left side of the frame is removable without shutting down the switcher.
- There are 6 fans each with their own alarm LEDs as well as plus 5 Volt indication and test points.
- If you remove the assembly, be careful as the fan blades are still turning.
- The below message will appear on the menu or any other PC running the menu application:



## Karrera & Kayenne 1.5G 4 M/E (8 RU) Frame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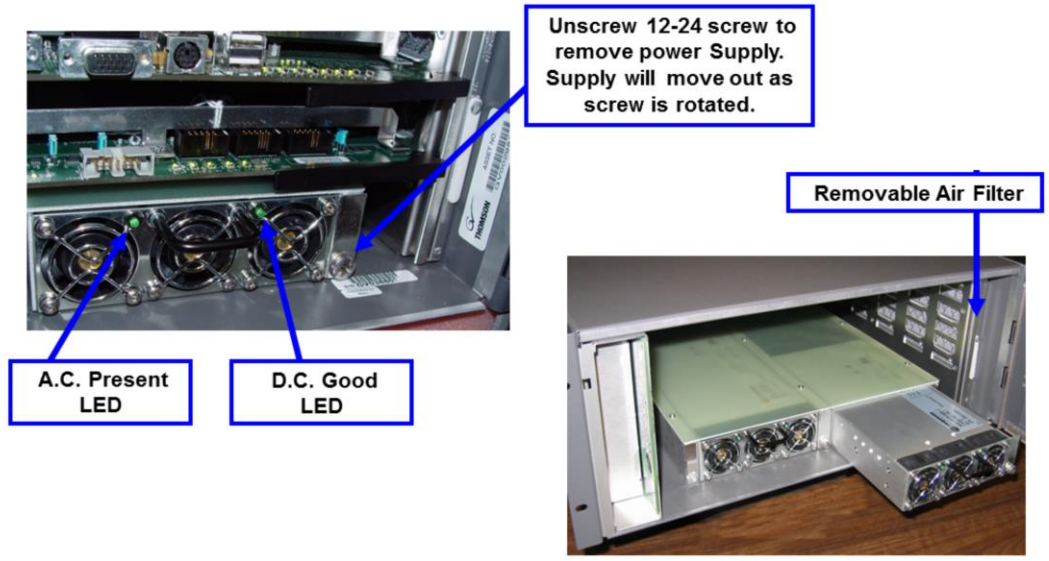
## 1.5G Frame Power Supplies (1)

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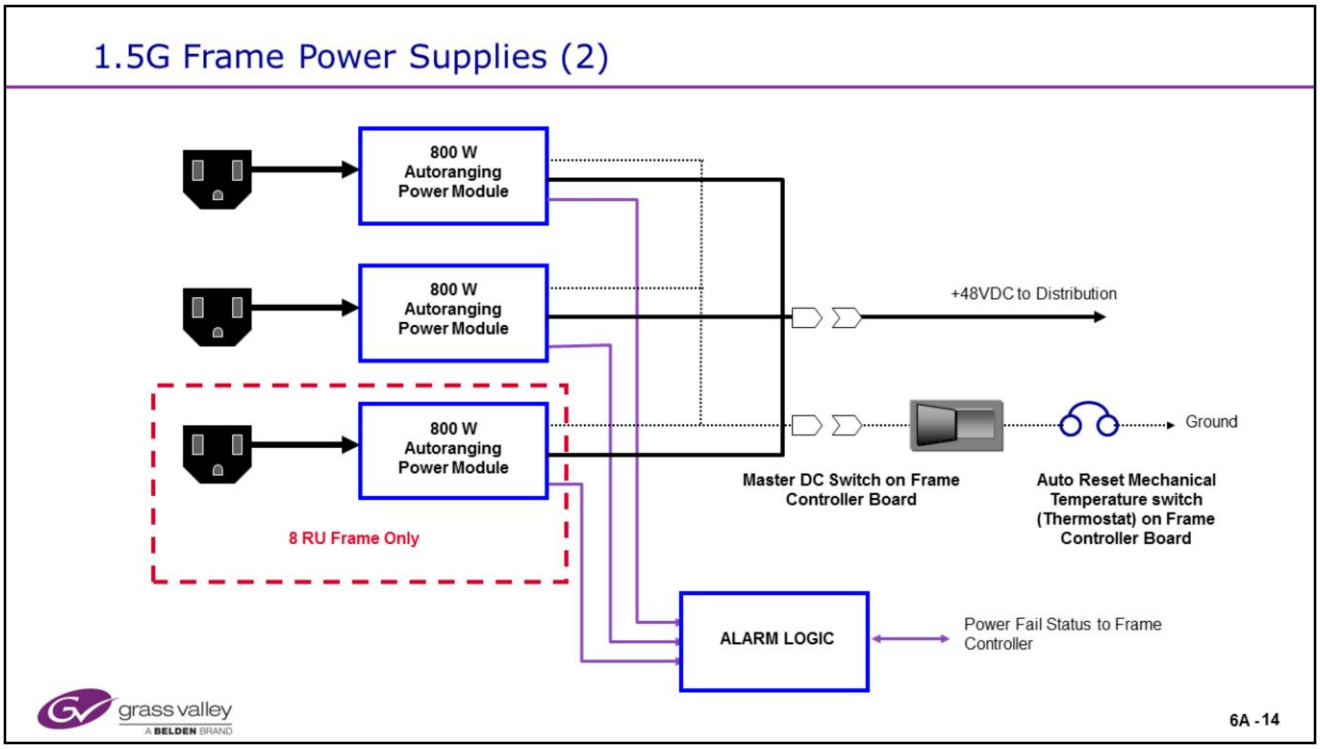
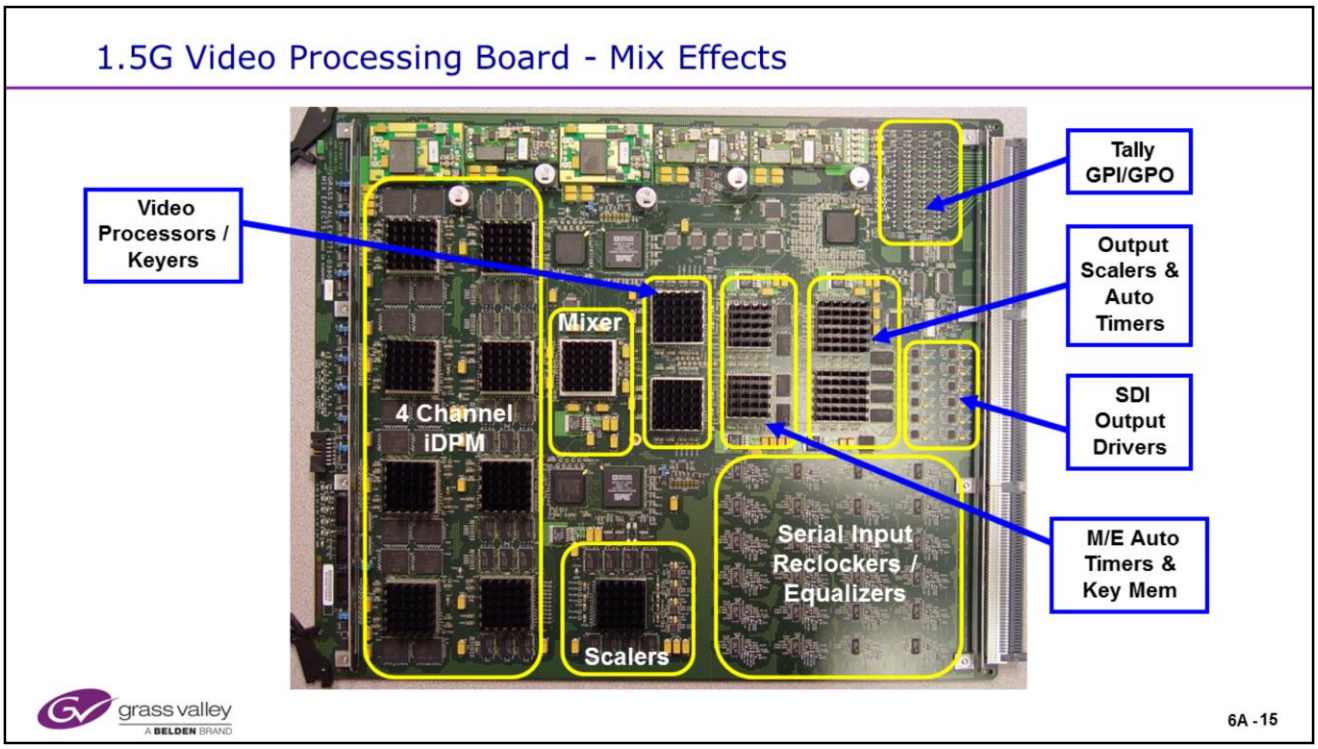
**Video Frame Power Supplies**

- All power supplies are auto ranging and will operate from 85 to 264 Volts, 47 to 63 Hertz.
- Each Power Supply has its own IEC power connection on the back of the frame.
- Each power supply provides 48 Volts D.C. and is capable of sourcing 16.7 Amps (800 Watts).
- The 4RU frame contains spaces for 2 supplies (1 standard). The 8 RU frame contains spaces for 3 supplies while 2 being standard.
- Each power supply has internal temperature sensors.



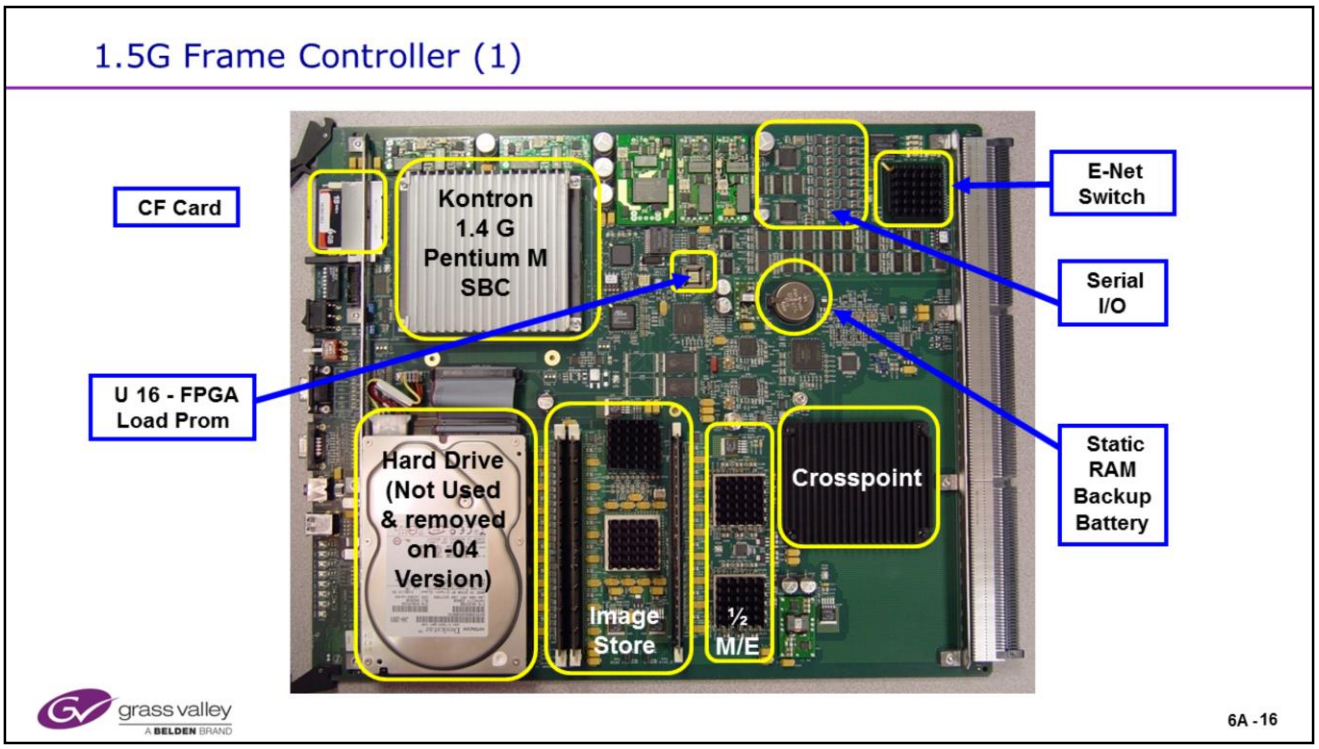

**Power Supply Module**

- The same power supplies are used for both the 2 M/E and the 4 M/E frames.
- The master DC switch is located on the switcher frame processor board.
- One power supply is standard with the 2 M/E (4RU) switcher and the second is an option.
- Two power supplies are standard with the 4 M/E (8RU) switcher and the third is an option.
- All power supplies are hot swappable and true load sharing.
- The power supplies will run on anything from 85 to 264 Volts A.C. at 47 to 63 Hertz.
- The power supplies are controlled by a series D.C. ground circuit. The switch and mechanical thermostat on the Frame Controller board are in the circuit.
- The Thermostat will shut the power supplies down when the temperature reaches 75 degrees C (167 F). This device will close the circuit when the temperature drops 5 to 8 degrees C.




**Video Processing Board – Mix Effects**

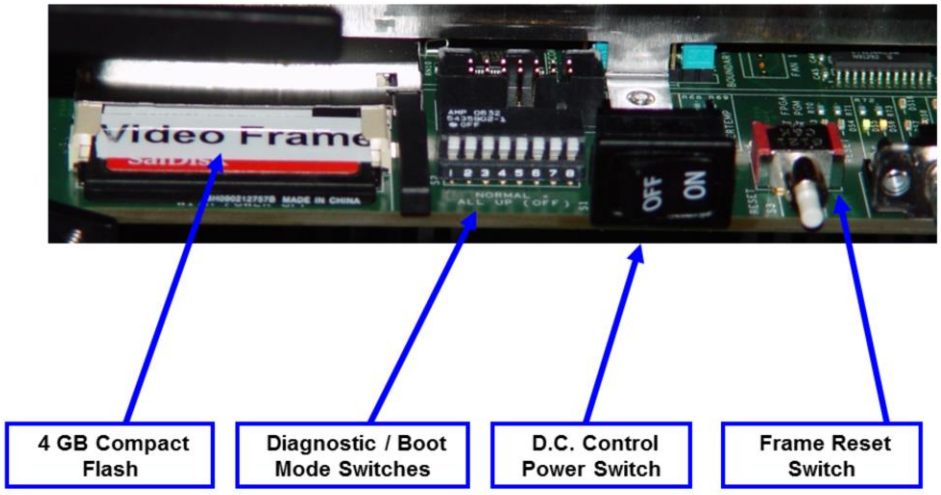
- M/E boards may use the Kalypso extender board.
- These boards are Hot Pluggable.
- As this is a “Universal” Video Processing Module, this board may be used in the Option slot of the 8 RU frame as the eDPM board. The frame must be licensed to operate in this mode.
- The previous version of this board (771-0361-xx) does not contain the optional Output Scalar hardware. The current version board assembly number is: 771-0390-xx.
- This board is also available as an Input / Output Expander Module. It is the same assembly as the M/E board but de-populated. It only contains input and output circuitry. This is used where there are empty M/E slots but the additional frame inputs or outputs are needed. The part number is 771-0361-50.




**Frame Controller**

- The Frame processor used in Kayenne for Software Versions 1 through 3 run Phar Lap as an operating system. Starting with Version 4.0, Karrera and Kayenne will use a new frame processor board verision, 771-0060-04. This board will Run VX Works as the operating system. The -04 board also does not have the Hard Drive installed. Earlier versions had a Hard Drive installed but it was not used.
- The Crosspoint Chip is a 144 in X 144 out part. This is the highest temperature point in the frame. The Thermostat in the power control circuit is located between the Battery and Crosspoint circuits. This part trips and shuts the power off at 75 degrees C (167 F).
- Compact Flash is 4 GB in size and holds all E-MEMS, Configurations, NV RAM. A new 16 GB Lexar Professional CF card is used starting in late 2011.
- The socketed lithium battery supports the volatile static RAM. This RAM holds the current OP or operation state, time and date. This is the operating status and information of the switcher at the moment.
- The processor is a Pentium 1.8 GB Kontron single board computer. It is running at 1.4 GB to reduce heat and reliability.
- The BNC located on this board may be controlled as a crosspoint output to provide any source in the switcher for test purposes. It is connected to crosspoint output #136 (Timing Analyzer).
- Earlier Kayak HD Frame Processors may be used for Kayenne but U16, the Compact Flash and Kontron memory must be changed. Kontron memory goes from 500 MB to 1GB.

## 1.5G Frame Controller (2)

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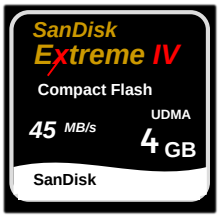
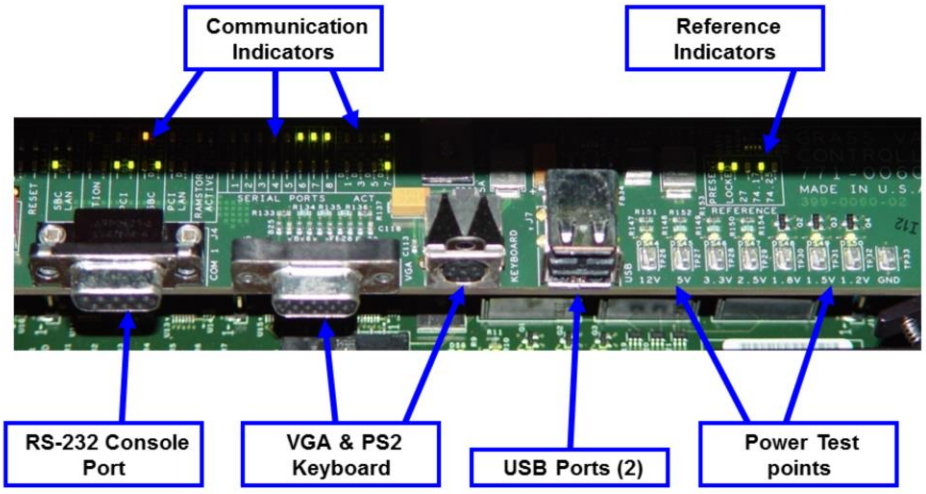
**PCU CF Card**

- The Compact Flash currently qualified by Engineering for both the PCU and Frame Controller is a 4 GB 300X Speed, 45MB/S UDMA (Ultra Direct Memory Access) enabled card.
- Currently, the only brand qualified for the 4 GB CF card is the SanDisk Extreme IV.
- The Lexar Professional CF card is the only qualified one currently for the 16 GB variety. This card is used on the latest versions of the Frame Processor, PCU and Karrera Panel processors.
- The Video Frame Processor uses GV programmed part number 163-8444-00 while the PCU frame uses 163-8438-00.
- Even though the Kayak HD-XL uses the same PCU Processor and Frame Processor boards as the Kayenne, the Kayak versions use a different part number for the CF cards. The PCU CF card is 163-8439-00 and the Frame uses a 163-8419-03 CF card.
- For normal boot, all switches are off!




## 1.5G Frame Controller (3)

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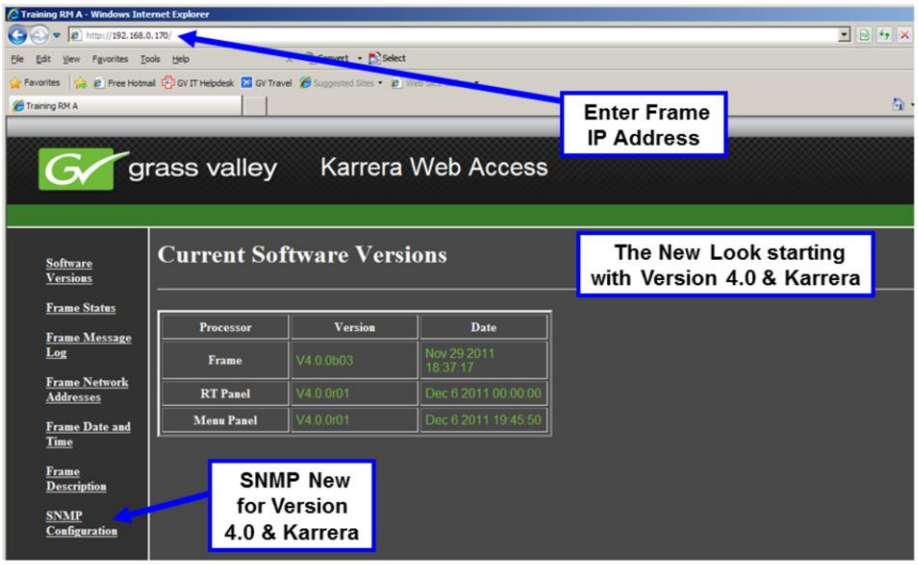
**Frame Controller Connections**

- The Frame Controller card has a VGA and PS-2 Keyboard connection for basic diagnostics and setting the ROM Bios.
- The VGA port may be needed for certain diagnostic function if performed by a Telnet session. Not all terminal functions report to the Telnet session even though controllable by Telnet. They are all seen on the VGA port.
- The Frame Controller card has a RS-232 (DB-9) connector to be used for a terminal Session. This is configured for a straight serial connection at 9600, 8, N, 1. This is currently not supported.

## 1.5G Frame Diagnostics – Web Browser (2)

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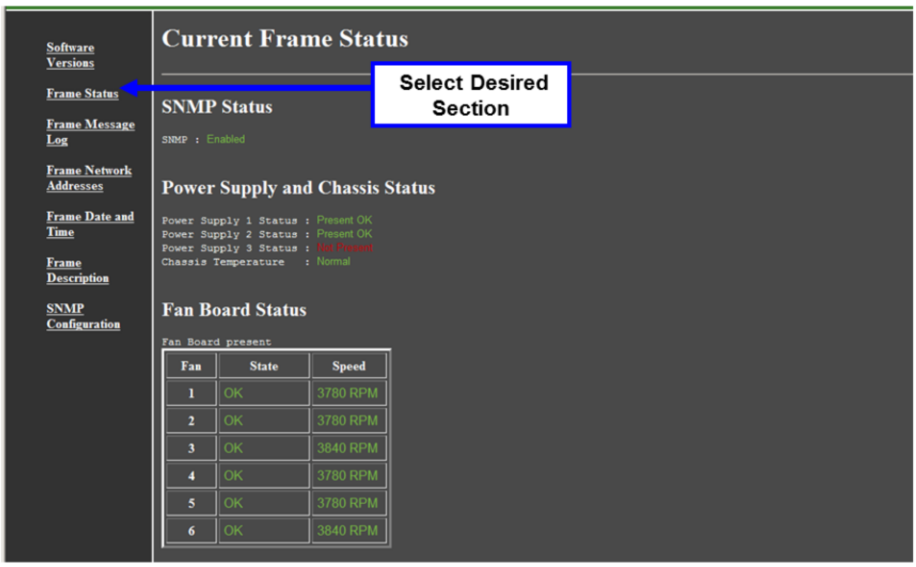
## 1.5G Frame Diagnostics – Web Browser (3)

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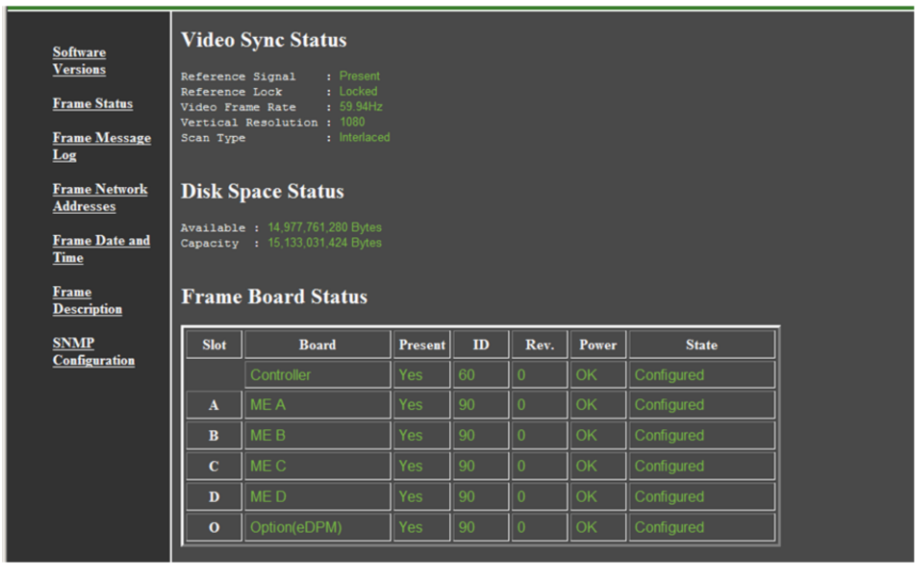
## 1.5G Frame Diagnostics – Web Browser (4)

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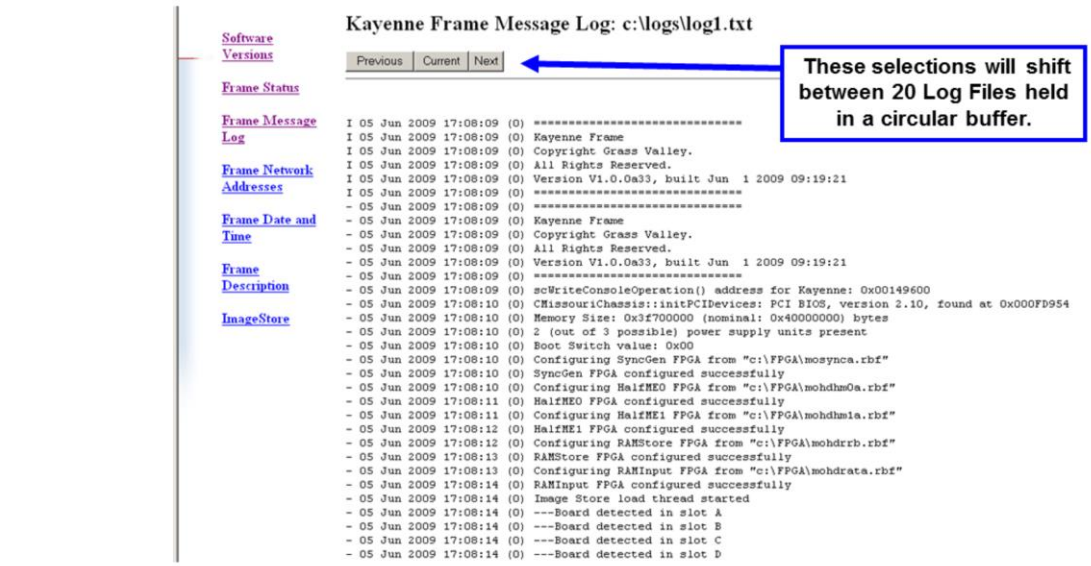
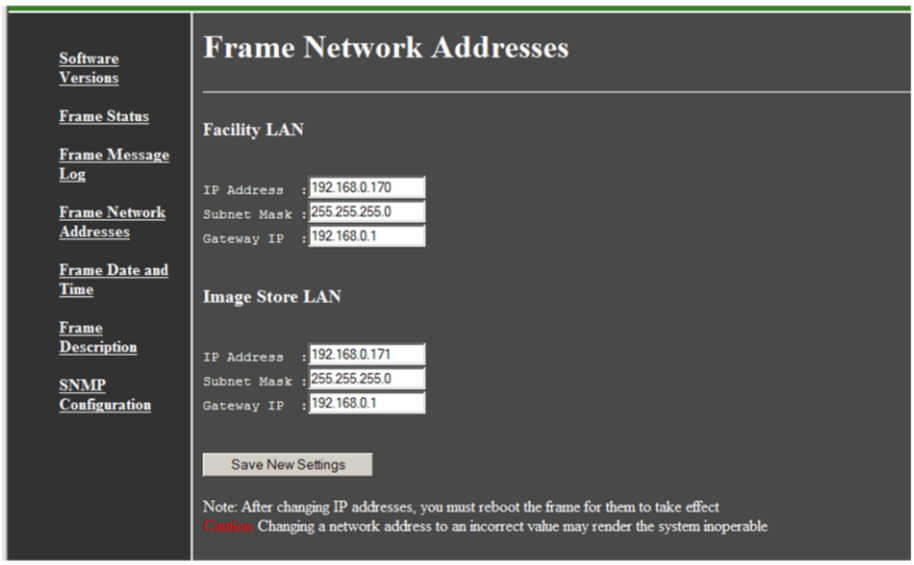
# 1.5G Frame Diagnostics – Web Browser (5)



## 1.5G Frame Diagnostics – Web Browser (6)

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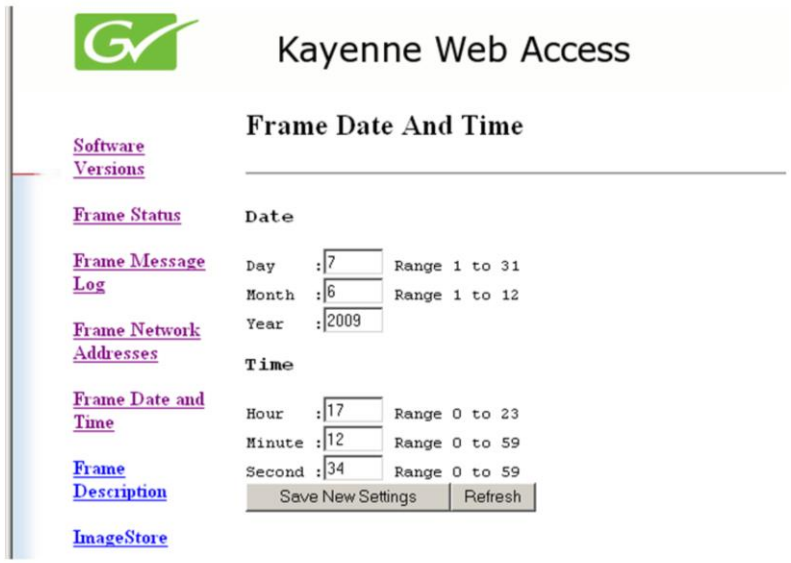
## 1.5G Frame Diagnostics – Web Browser (7)

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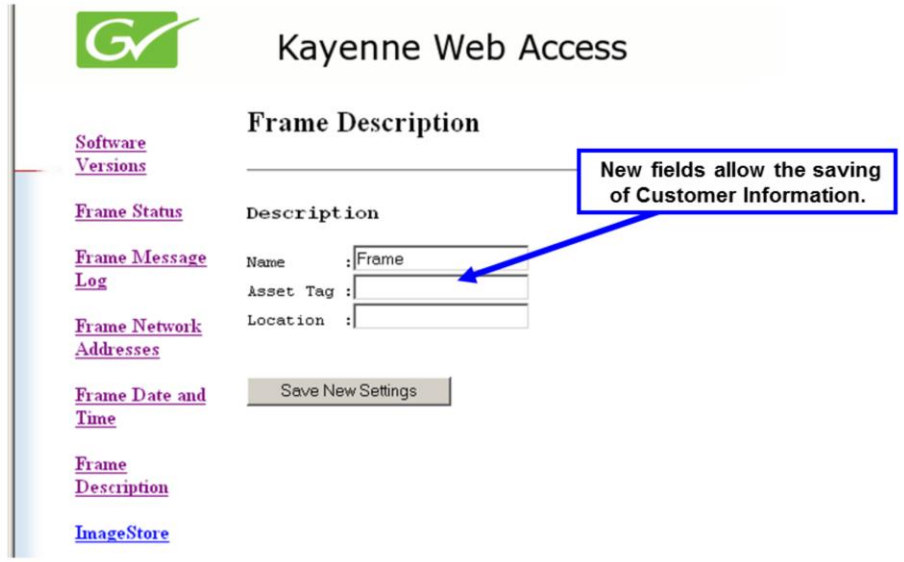
## 1.5G Frame Diagnostics – Web Browser (8)

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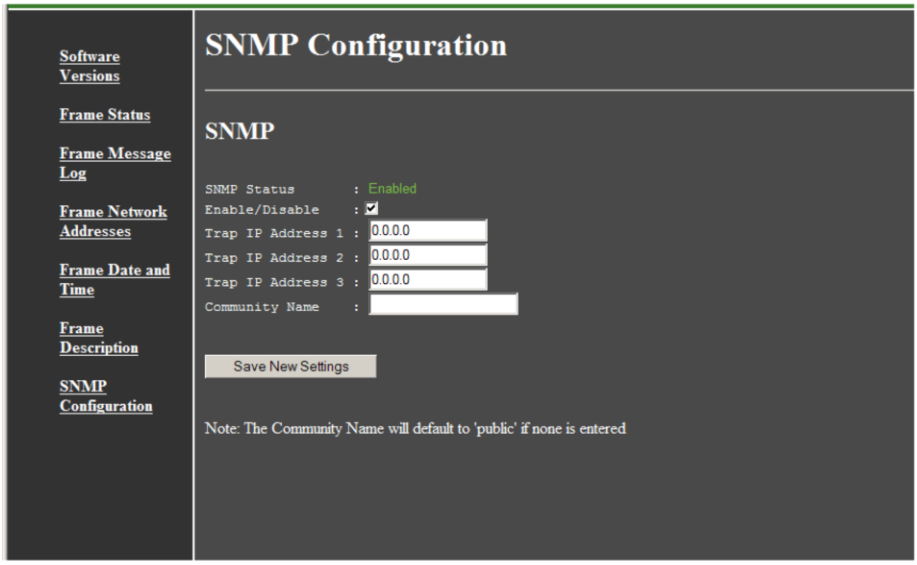
## 1.5G Frame Diagnostics – Web Browser (9)

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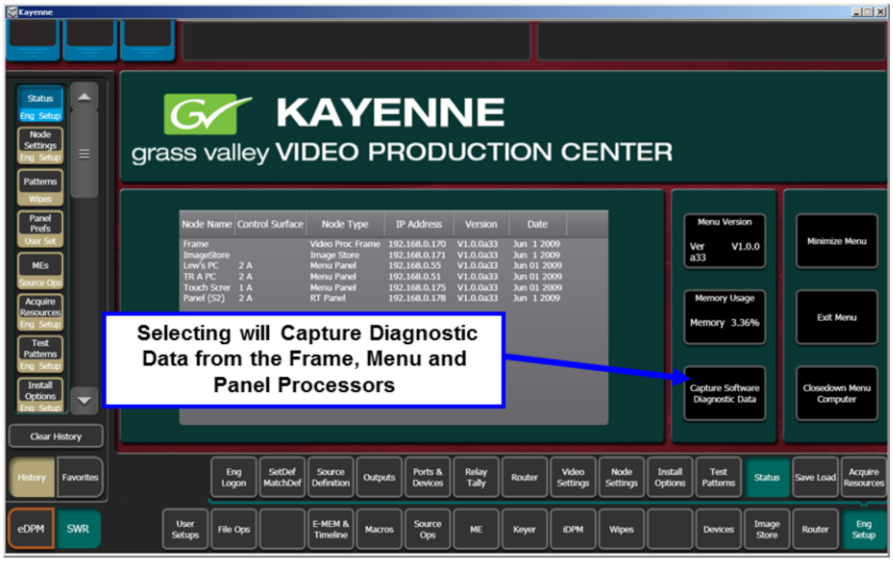
## 1.5G System Diagnostics – Menu

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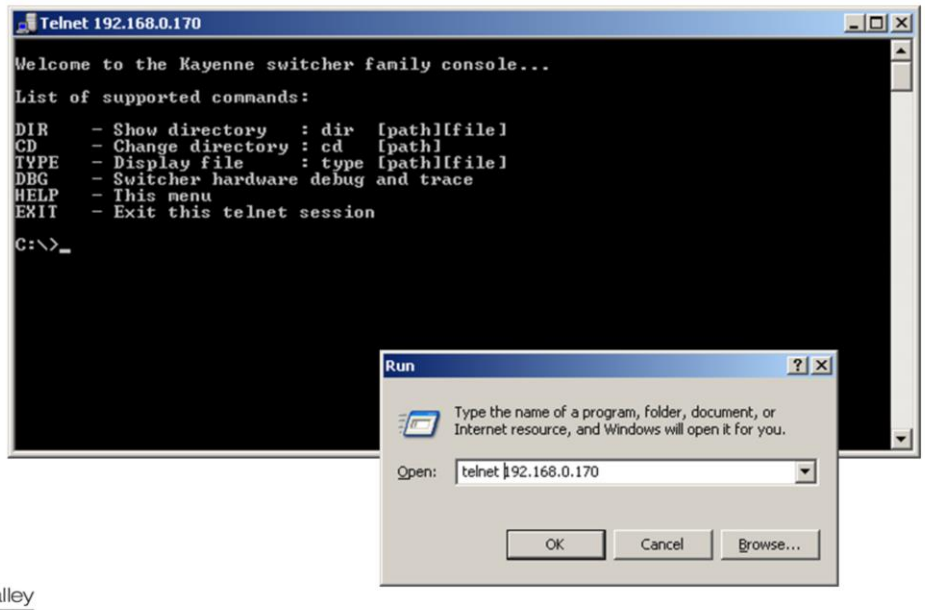
## 1.5G Frame Diagnostics – Telnet (1)

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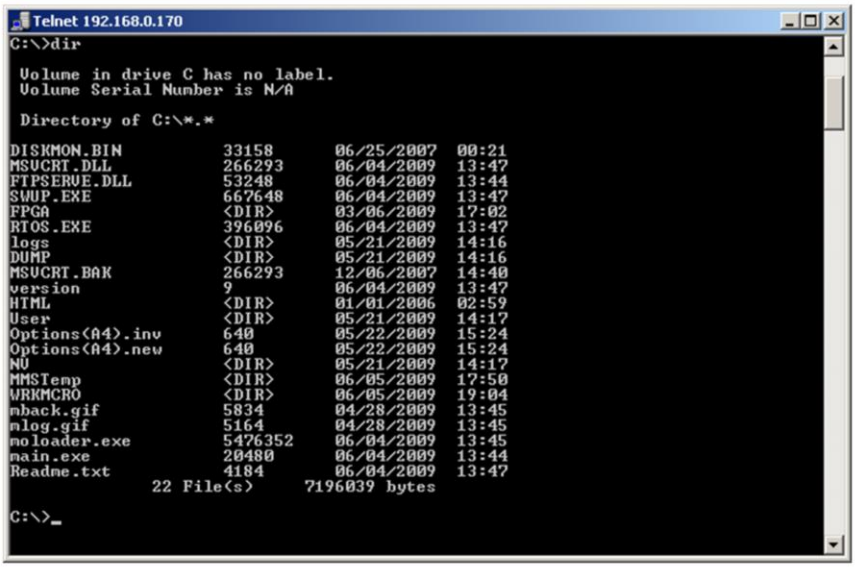
## 1.5G Frame Diagnostics – Telnet (2)

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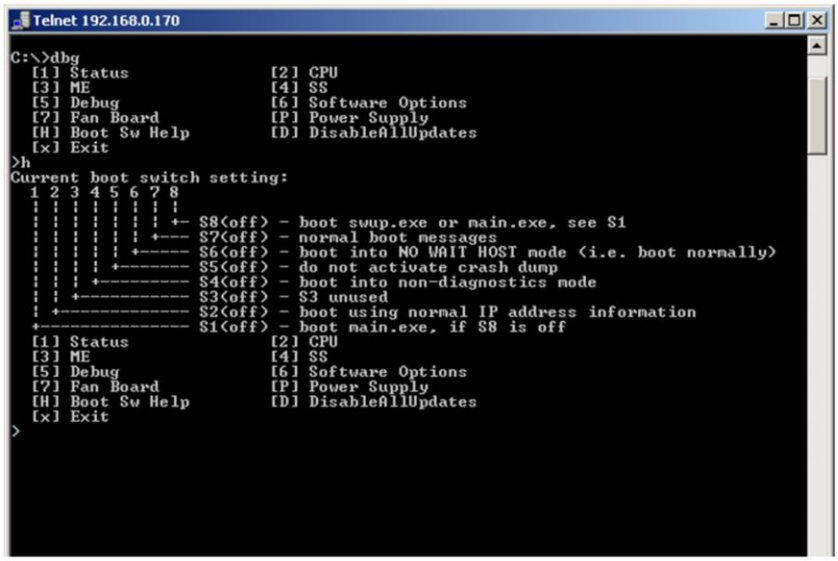
## 1.5G Frame Diagnostics – Telnet (3)

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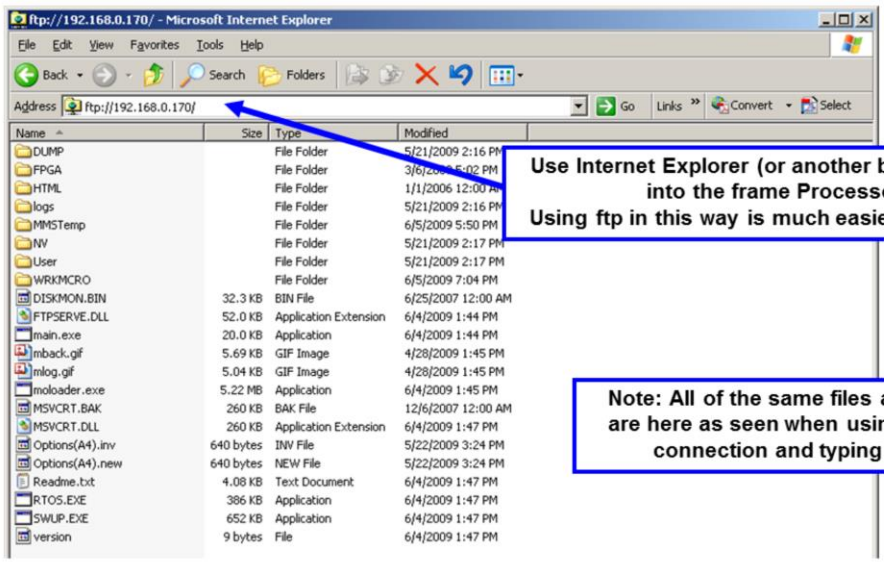
## 1.5G Frame Diagnostics – FTP (1)

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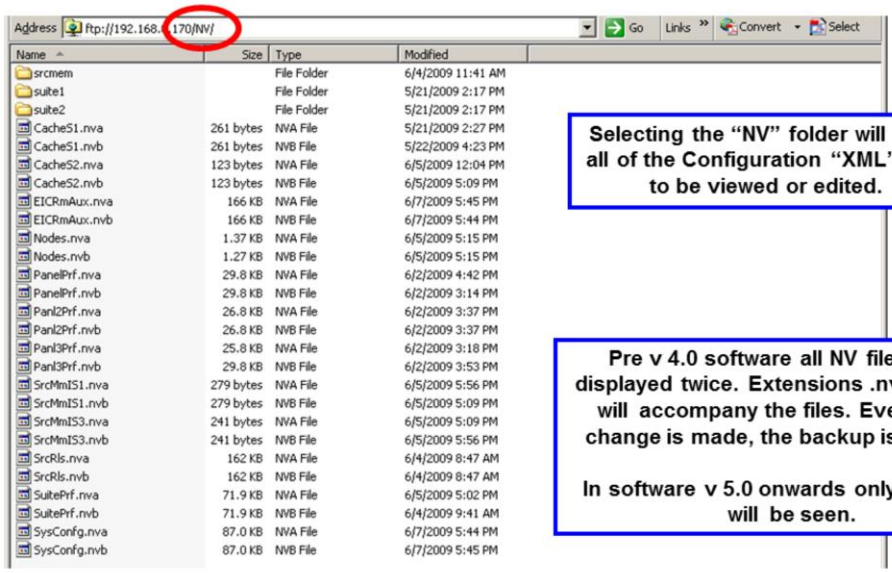
## 1.5G Frame Diagnostics – FTP (2)




**Selecting the "NV" folder will allow all of the Configuration "XML" files to be viewed or edited.**

**Pre v 4.0 software all NV files will be displayed twice. Extensions .nva and .nvb will accompany the files. Every time a change is made, the backup is modified.**

**In software v 5.0 onwards only NVA Files will be seen.**

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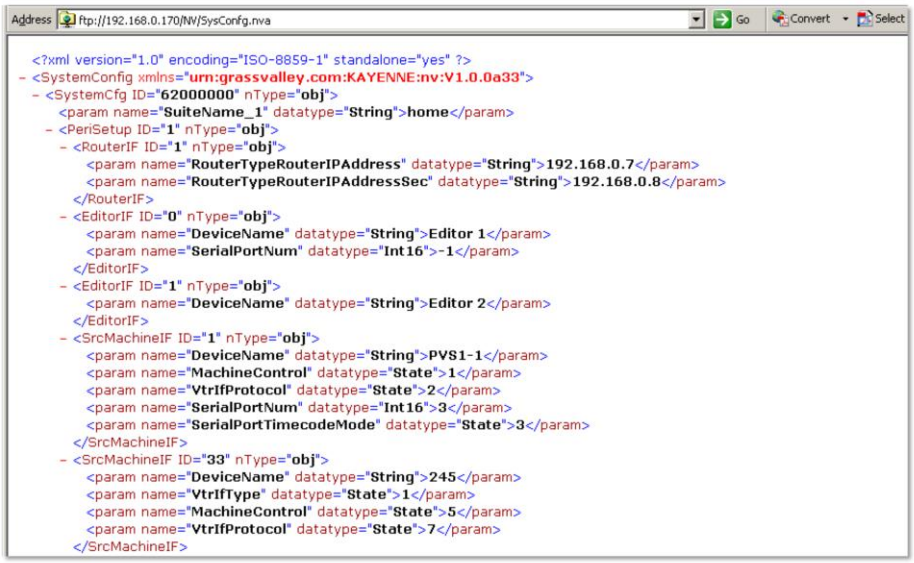
## 1.5G Frame Diagnostics – FTP (3)

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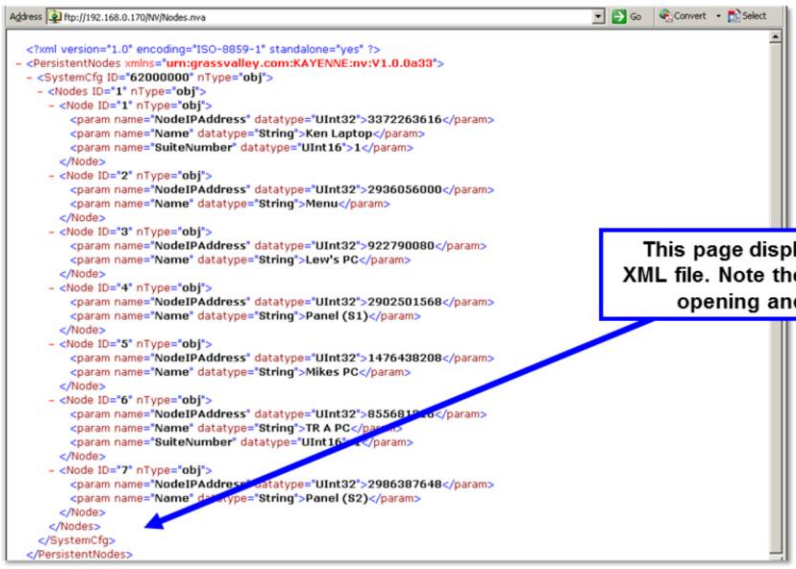
## 1.5G Frame Diagnostics – FTP (4)

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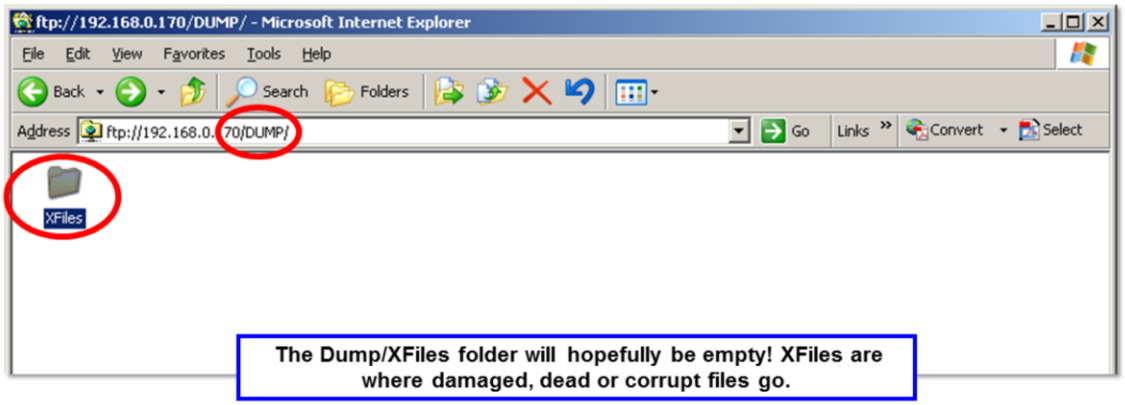
## 1.5G Frame Diagnostics – FTP (5)




The Dump/XFiles folder will hopefully be empty! XFiles are where damaged, dead or corrupt files go.

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