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A **BELDEN** BRAND

K-FRAME

VIDEO PRODUCTION CENTER

Release Notes

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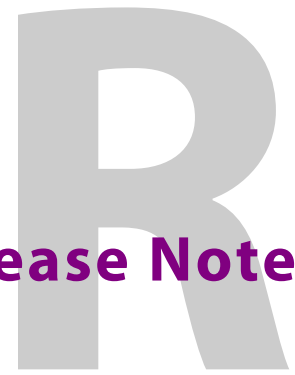
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K-Frame 14.1 Release Notes



About this Manual

This document describes the new features and other information specific to the K-Frame Video Production Center, Version 14.1 switcher software for the Kayenne, Karrera, and GV Korona systems.

For More Information

For information about installing, configuring, and operating K-Frame systems, see the K-Frame Video Production Center Documentation Libraries found on the Grass Valley website at grassvalley.com and on the USB thumb drive provided with your system.

Supported in an Upcoming Release

GV K-Frame X Video Processing Frame

- SNMP
- PTP (Precision Time Protocol) Reference
- GV K-Frame X Mod I/O Conversion board

Video I/O, IP I/O Config menu buttons and tabs:

The following *GV K-Frame X* and *V-series* menus and buttons are present (some are grayed out), however they will be supported in a future release.

- **SFP**—fixed to the default value (buttons in pop-up menu pane (**SFP 2A**, **SFP 3A**, etc.)
- **Auto Detect** —button - Stream Format pop-up button pane and Bulk Configuration menus
- **IGMPv3 SSM** (button)
- **Mod I/O Conversion** (GV K-Frame X menu)

Video Settings menu buttons and tabs:

- **PTP Reference** (button/menu)

About K-Frame V-series MatchDef and SetDef Conversion

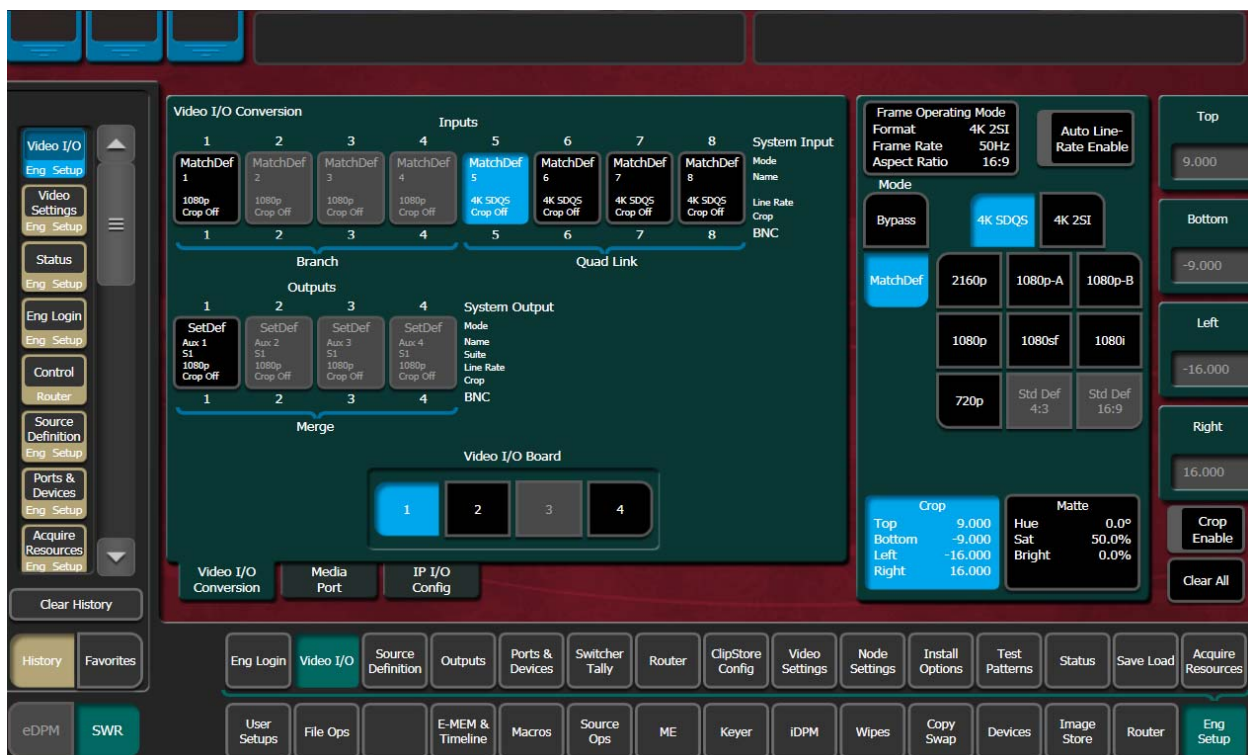
MatchDef provides SDI stream format conversion for inputs while SetDef converts streams for output. For Media Port conversion, the V-series provides both MatchDef and SetDef. See the *K-Frame Kayenne/Karrera/GV Korona Installation & Service Manual* for a detailed description of MatchDef and SetDef concepts, features, and controls.

About 4K Conversion

Four inputs/outputs are used for 4K conversion, the first in the group is the valid source as shown in the Video I/O Conversion menu.

IMPORTANT: Make sure the source definitions for 4K are defined correctly in the Source Definition menu.

MatchDef and SetDef modes are set in the Video I/O Conversion menu.



V-series system with Conversion I/O Boards in Slots 1, 2, and 4

MatchDef Merge and Branch

A MatchDef *Branch* or *Merge* is performed during conversion on a stream input to the Frame, based on the Frame Operating Mode (Video Settings menu). For example, if the Frame Operating Mode is set to 4K 2SI and a 1080p stream is received on the input, the 1080p stream will be upscaled to 4K and branched into four 1080p streams. This is highlighted in the menu by the word **Branch** and a blue bracket under the four physical board inputs.

Conversely, if the Frame Operating Mode is set to 1080p and a 4K 2SI stream is received on an input, it is downscaled and merged into one 1080p signal. This is highlighted in the menu by the **Merge** label along with a blue bracket under the four physical inputs.

Note: 2160p signals are received and transmitted as a single 12G-SDI stream.

MatchDef Quad Link

When a 4K stream is input to the switcher *and* the Frame Operating Mode is set to a 4K format, it will be highlighted in the menu by the *Quad Link* label and a blue bracket under the four inputs. This means the four inputs are linked to the 4K signal.

SetDef Merge and Branch

A SetDef *Branch* or *Merge* is performed during conversion based on the Frame Operating Mode. For example, if the Frame Operating Mode is set to 1080p, the 1080p stream will be upscaled to 4K—four 3G 1080p streams. This is highlighted in the menu by the word **Branch** and a blue bracket under the four physical outputs.

Conversely, if the Frame Operating Mode is set to 4K 2SI, the four 3G 1080p streams are merged into one 1080p stream. This is highlighted in the menu by the **Merge** label along with a blue bracket under the four physical outputs.

Note: 2160p signals are received and transmitted as a single 12G-SDI stream.

SetDef Quad Link

When a 4K stream is output from the switcher *and* the Frame Operating Mode is set to a 4K format, it will be highlighted in the menu by the *Quad Link* label and a blue bracket under the four outputs. This means the four outputs are linked to the 4K signal.

12G-SDI Gearboxing (Merge and Branch)

For 12G-SDI (2160p) in single link applications, the V-series Conversion I/O can gearbox full raster 12G-SDI inputs (Branching) into quad-link for internal processing and gearbox quad-link into full raster 12G-SDI outputs (Merging).

Supported MatchDef Input Conversion

The following tables show the Frame Operating Mode (left column) and input video line and frame rates supported for conversion (right columns), for each mode.

The abbreviation *Sync* means that when an input video matches the Frame Operating Mode line/frame rate of the switcher Frame, the video is being synchronized internally; even though there is no conversion. This can cause a delay of up to one frame.

Note: 1080p* is a 1.5Gb, 1080 Line Rate Progressive video.

■ Purple shaded cells depict supported input conversions.

29.97Hz/59.94Hz Input Conversion

	Input Rate	525i	1080i	1080sf	1080p*	720p	1080p-A	1080p-B	2SI	SDQS	2160p	
Frame Op Mode	Hz	29.97Hz				59.94Hz						
525i	29.97Hz	Sync										
1080i			Sync									
1080sf				Sync								
720p	59.94Hz					Sync						
1080p-A							Sync					
1080p-B								Sync				
4K 2SI									Sync			

25Hz/50Hz Input Conversion

	Input Rate	625i	1080i	1080sf	1080p*	720p	1080p-A	1080p-B	2SI	SDQS	2160p	
Frame Op Mode	Hz	25Hz				50Hz						
625i	25Hz	Sync										
1080i			Sync									
1080sf				Sync								
720p	50Hz					Sync						
1080p-A							Sync					
1080p-B								Sync				
4K 2SI									Sync			

30Hz/60Hz Input Conversion

	Input Rate	1080i	1080sf	1080p*	720p	1080p-A	1080p-B	2SI	SDQS	2160p
Frame Op Mode	Hz	30Hz			60Hz					
525i	30Hz									
1080i		Sync								
1080sf			Sync							
720p	60Hz				Sync					
1080p-A						Sync				
1080p-B								Sync		
4K 2SI									Sync	

23.98Hz/24Hz Input Conversion

	Input Rate	1080sf	1080p*	1080sf	1080p*
Frame Op Mode	Hz	23.98		24Hz	
1080sf	23.98Hz	Sync			
1080sf	24Hz			Sync	

Supported SetDef Output Conversion

The following tables show the Frame Operating Mode (left column) and output video line and frame rates supported for conversion (right), for each mode.

The abbreviation *Sync* means that when an input video matches the Frame Operating Mode line/frame rate of the Video Frame, the video is being synchronized internally; even though there is no conversion. This can cause a delay of up to one frame.

Note: 1080p* is a 1.5Gb, 1080 Line Rate Progressive video.

■ Purple shaded cells depict supported output conversions.

29.97Hz/59.94Hz Output Conversion

	Output Rate	525i	1080i	1080sf	1080p*	720p	1080p-A	1080p-B	2SI	SDQS	2160p	
Frame Op Mode	Hz	29.97Hz				59.94Hz						
525i	29.97Hz	Sync										
1080i			Sync									
1080sf				Sync								
720p	59.94Hz					Sync						
1080p-A							Sync					
1080p-B												
4K 2SI									Sync			

25Hz/50Hz Output Conversion

	Output Rate	625i	1080i	1080sf	1080p*	720p	1080p-A	1080p-B	2SI	SDQS	2160p	
Frame Op Mode	Hz	25Hz				50Hz						
625i	25Hz	Sync										
1080i			Sync									
1080sf				Sync								
720p	50Hz					Sync						
1080p-A							Sync					
1080p-B												
4K 2SI									Sync			

30Hz/60Hz Output Conversion

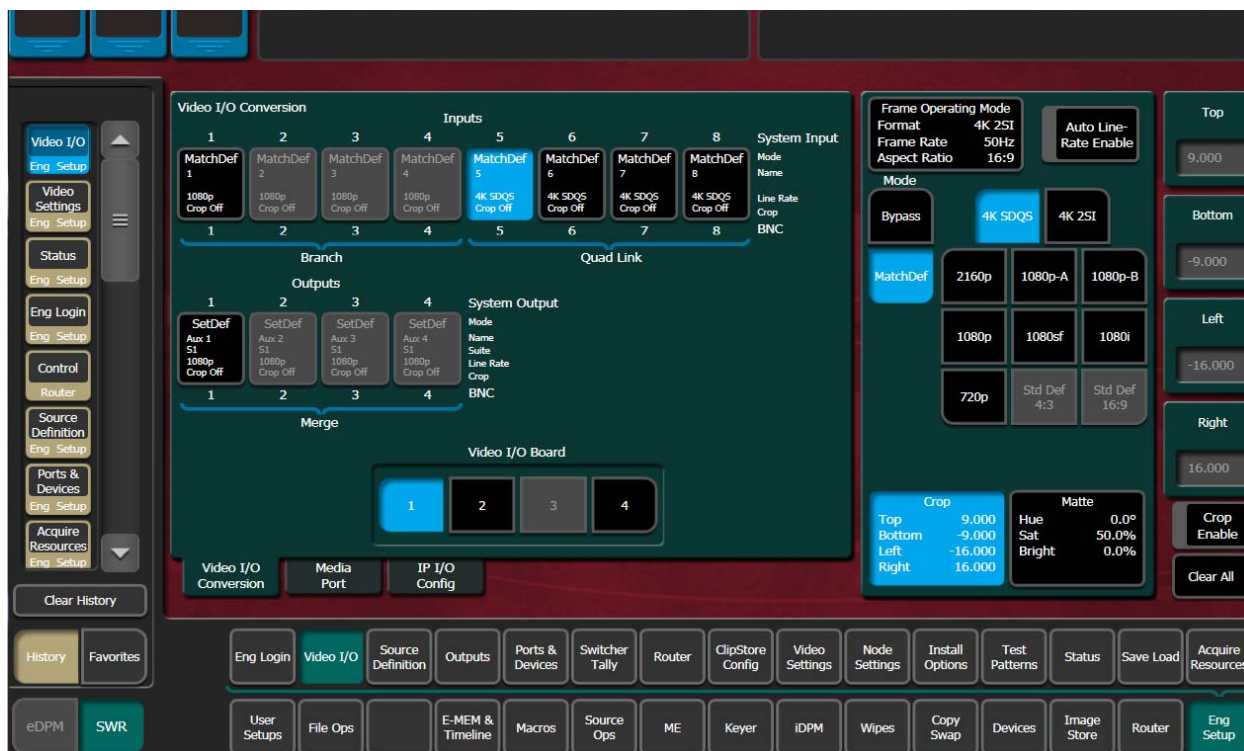
	Output Rate	1080i	1080sf	1080p*	720p	1080p-A	1080p-B	2SI	SDQS	2160p
Frame Op Mode	Hz	30Hz			60Hz					
525i	30Hz									
1080i		Sync								
1080sf			Sync							
720p	60Hz				Sync					
1080p-A						Sync				
1080p-B										
4K 2SI								Sync		

23.98Hz/24Hz Output Conversion

	Output Rate	1080sf	1080p*	1080sf	1080p*
Frame Op Mode	Hz	23.98		24Hz	
1080sf	23.98Hz	Sync			
1080sf	24Hz			Sync	

K-Frame V-series Video I/O Conversion Menus

Located in the switcher Eng Setup, Video I/O menu, the Conversion pane on the left provides Input, Output, and Video I/O board selection buttons. Both inputs (top) and outputs (below) are displayed for the selected I/O Board. For the Video I/O Board selections (bottom), if a button is grayed out, there is no conversion board present.



Video I/O Conversion Pane

Video I/O Conversion Pane Buttons and Labels

Button/Label	Description
Inputs	
Input (1-8)	Select the input for configuration, displays configuration pane (right)
Labels	System Input—Modular source definition Engineering Name and ID
	Mode—Input mode, Bypass or MatchDef
	Name—System Input Name, Source Definition menu
	Line Rate— Input video format
	Crop—Crop On/Crop Off
	BNC—Physical BNC on selected Mod I/O Board

Video I/O Conversion Pane Buttons and Labels

Button/Label	Description
Outputs	
Output (1-4)	Select the output for configuration, displays configuration pane (right)
Labels	System Output—Video I/O Physical Output definition, from Outputs menu
	Mode—Output mode, Bypass or MatchDef
	Name—System Output Name, from Outputs menu
	Suite—Current suite (example: Logged in as Suite 4 CA in Eng Login menu)
	Line Rate—Determined by the SetDef Line Rate button selection in the Configuration pane (right)
	Crop—Crop On/Crop Off
	BNC—Physical BNC on selected Mod I/O Board
Video I/O Board	
Video I/O Board (1-4)	Select the Video I/O Board: Blue—Selected Black—Board present Gray—No board present

Video I/O MatchDef Conversion Configuration Pane

Video I/O MatchDef Configuration Pane Buttons and Labels

Button/Label	Description
Mode	Bypass—Allows video to pass through without conversion MatchDef—Incoming stream will be converted to the Frame Operating Mode
Frame Operating Mode Labels	Format—Current Frame setting
	Frame Rate—Current Frame setting
	Aspect Ratio—Current Frame setting
Auto Line-Rate Enable	Enabled—Automatically detects line rate from incoming stream (does not currently detect 4K modes) and displays the incoming format Disabled—allows pass through stream and manual line rate selection in MatchDef (manually setting the line rate can sometimes be used to correct incoming video from an external device)
Line Rates	4K SDQS, 4K 2SI, 2160p, 1080p-A, 1080p-B, 1080p, 1080sf, 1080i, 720p, Std Def 4:3, Std Def 16:9 (Standard Def buttons grayed out when in 4K Frame Operating Modes)

Video I/O MatchDef Configuration Pane Buttons and Labels

Button/Label	Description
Crop	Displays Crop status and launches Crop adjustment data pads
Top	Crop image from the top down
Bottom	Crop image from the bottom up
Left	Crop image from the left
Right	Crop image from the right
Matte	Displays Matte status and launches Matte adjustment data pads
Hue	Increase/decrease matte hue percentage
Saturation	Increase/decrease matte saturation
Brightness	Increase/decrease matte brightness
Crop Enable	Enable crops
Clear All	Resets all crop and matte settings

- System Input Name can be edited in the Eng Setup, Source Definition menu.
- Line rate selections (right) are determined with respect to the Frame Operating Mode. For example if the Frame mode is set to a 4K line rate, Std Def buttons will be grayed out because standard definition line rates are not currently supported for conversion in 4K modes.
- The Auto Line-Rate Enable button (right) must be off to manually select a conversion line rate button.

Video I/O SetDef Conversion Configuration Pane

The following table shows the SetDef differences from MatchDef, see [Video I/O MatchDef Conversion Configuration Pane](#).

Video I/O SetDef Configuration Pane Buttons and Labels

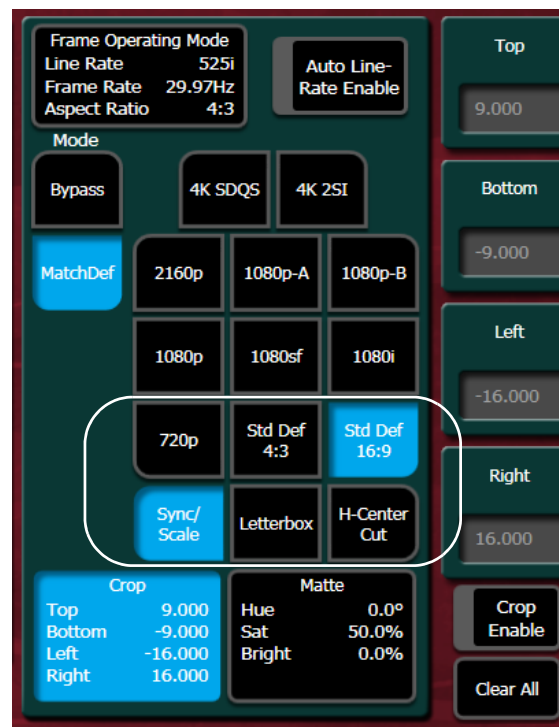
Button/Label	Description
Mode	Bypass—Allows video to pass through without conversion SetDef—Outgoing stream will be converted based on the Line Rate button selected
SetDef Timing	Displays the Horizontal Offset and Vertical Offset data pads
Horizontal Offset	Offsets the outputs SetDef timing horizontally
Vertical Offset	Offsets the outputs MatchDef timing vertically

- SetDef
 - System Output Name can be changed in the Eng Setup, Outputs menu.
 - Standard Definition is supported for any Frame Operating mode.

- Inputs and Outputs are labeled with the Video Board number and the input/output. The labels match the Engineering IDs in the Source Definition and Outputs menus.
- When an input or output is selected, a modifier pane opens on the right.
- Bypass mode (right) can be selected to allow the video to pass through without conversion.
- Crop Enable, Clear, and crop data pads are provided at the far right when selected.
- Matte Enable, Hue, Saturation, and Brightness are provided at the far right when selected

Standard Definition

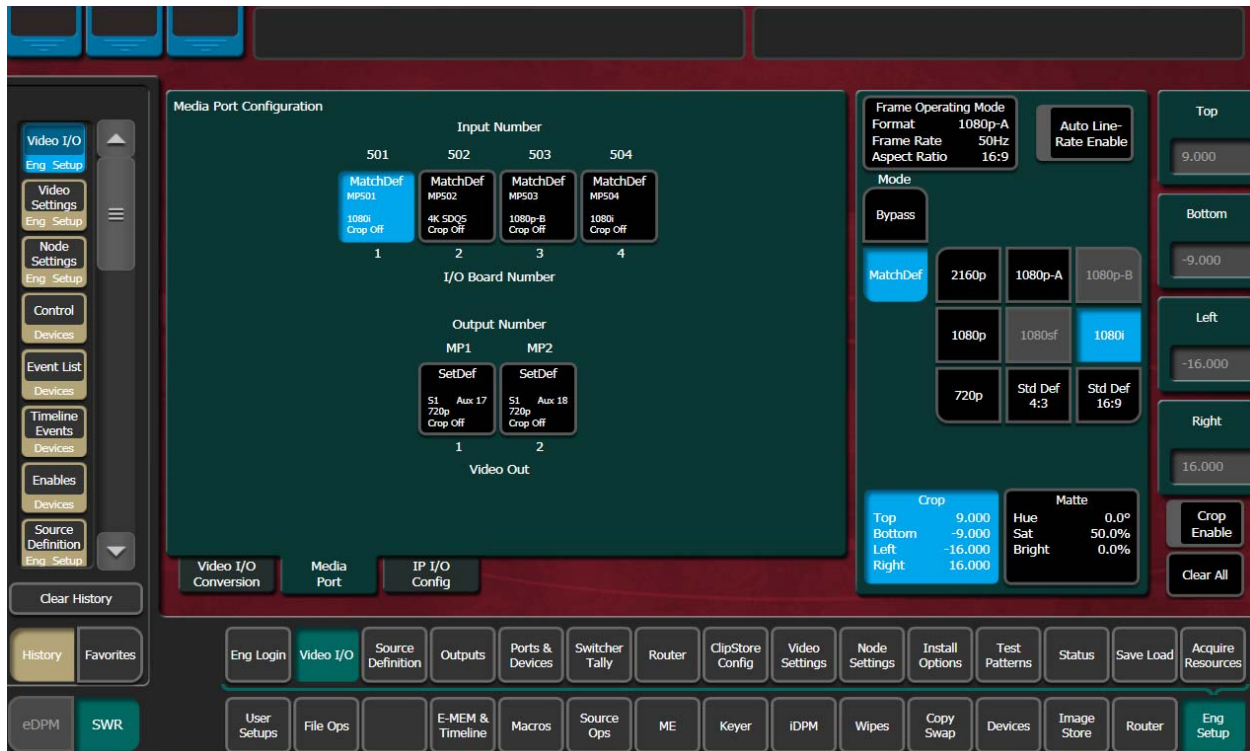
Standard Definition conversion buttons are available for configuration, including modifier buttons for Std Def 16:9. See the *Kayenne/Karrera/GV Korona User Manual* for standard definition parameter descriptions.



K-Frame V-series Media Port Menus

The K-Frame V-series supports up to four input Media Ports (one per I/O board), and two Media Port outputs.

The Media Port menu is located in the switcher Eng Setup, Video I/O menu. The Conversion pane on the left provides input selection buttons. The right side modifier pane provides the same functionality as the Video I/O menu ([K-Frame V-series Video I/O Conversion Menus](#), on page 8).



Configure MatchDef for Format Conversion

Auto Line Rate detection is not currently supported for 4K formats.

- 1 Disable the Auto Line Rate Enable button.
- 2 Select the Line Rate button matching the video line rate coming into the switcher input, in the MatchDef configuration pane of the Video I/O Conversion menu.

About GV K-Frame X and V-series Video IP I/O Configuration

K-Frame V-series Video Production Centers use SFPs (Small Form-factor Pluggable) for 10Gb Ethernet network communication. There are two inputs and one output provided per SFP, on the IP I/O boards.

- Large IP I/O boards have 16 SFPs (GV K-Frame X only)—eight “A” SFPs providing 16 primary inputs and eight primary outputs and the same number of “B” SFPs for redundancy, per board.
- Small IP I/O boards have 8 SFPs—four “A” SFPs providing eight primary inputs four primary outputs and the same number of “B” SFPs for redundancy, per board.

The IP Config menu control is delegated with the following port type buttons:

- Inputs,
- Outputs, and
- Port Config SFPs.

IMPORTANT: Perform the Port Config SFP configuration first, in the IP I/O Config menu (see [Port Config System SFPs Configuration Menu Buttons](#) and [System Input Configuration Buttons](#)).



V-series IP I/O Config

Multiple parameters can be set, then applied. New parameter settings are highlighted in salmon (color), indicating the menu settings for each input have not been sent to the Frame. Once the Apply Settings button is selected, the settings are sent to the Frame and

the new settings are displayed in the menu. Buttons and data pads return to white text over a black background.



Common Configuration Buttons

Some IP I/O Config menu buttons are common to all menu delegations (Inputs, Outputs, and Port Config SFPs).

IP I/O Common Config Menu Buttons

Button	Description
Bulk Configuration	Bulk Configuration menu
Import/Export Config File	Import/Exports IP Config File menu
Inputs	Inputs menu
Outputs	Outputs menu
Port Config SFPs	Port Config SFPs menu
Video	Video stream delegation
Audio	Audio stream delegation (AES Audio)
Ancillary	Ancillary stream delegation (Closed captioning, subtitles, etc.)
Restore Defaults	Restores IP system defaults (Restores the menu, does not apply settings to the Frame)
Restore Settings	Restores the IP settings last applied (Restores the menu, does not apply settings to the Frame)
Apply Settings	Applies new settings made to the menu parameters, e.g. streaming format, IP Addresses, UDP Port numbers, etc.
Video I/O Board	Select the physical Video I/O Board (Buttons 1-10)
Mod I/O Board (Video I/O Board for V-series)	Select the physical Mod I/O (Video I/O for V-series) Board (Buttons 1-4)

Port Config System SFPs Configuration Menu Buttons

In the Eng Setup, IP I/O Config menu with the Port Config SFPs delegation button selected.

Port Config SFPs Menu Buttons and Data Pads

Menu	Button/Label	Description
Port Config SFPs	System SFP	Displays the SFP selection/search result
	Board SFP (label)	SFP number on the physical board (example: System SFP 9, is Board SFP 1 on Board 2)
	SFP (label)	Physical SFP, the "B" SFP is used for I/O Redundancy Mode
	Local IP	IP Address for the Frame to transmit/receive external device data over the network
	Subnet mask	Facility Subnet Mask Address
	Gateway	Facility Gateway Address

System Input Configuration Buttons

In the Eng Setup, IP I/O Config menu with the Inputs delegation button selected.

IP I/O Input Menu Buttons and Data Pads

Button/Data pad/Label	Description
System Input	System Inputs with Engineering IDs: <ul style="list-style-type: none"> GV K-Frame X 1 to 192 V-series 1 to 32
Board Input	Input number on the physical board
Stream Format	Selects the type of IP Stream Format Video Standard (default is ST 2022-6): <ul style="list-style-type: none"> Auto Detect (future release) ST 2110-20 ST 2022-6 4KTICO ST 2022-6
Enable	Enable/Disable Redundancy Mode
SFP	Upcoming feature for SFP selection (currently a fixed value)
Receive IP	IP Address for the input
UDP Port	UDP Port number to receive data (default 1000)
IGMPv3 SSM (future release)	IGMPv3 SSM IP Address (default 0.0.0.0)
Input	Scroll through or directly select an input (values reflected in Video I/O and Mod I/O Board buttons)

System Output Configuration Buttons

In the Eng Setup, IP I/O Config menu with the Outputs delegation button selected.

Output Menu Buttons and Data Pads

Button/Data pad/Label	Description
System Output	<ul style="list-style-type: none">GV K-Frame X 1 to 96V-series 1 to 16
Board Output	Output number on the physical board
Stream Format	Selects the type of IP Stream Format Video Standard (default is ST 2022-6): <ul style="list-style-type: none">ST 2110-20ST 2022-64K TICO ST 2022-6
Enable	Enable/Disable Redundancy Mode
Transmit IP	Output video to the Transmit IP (default 0.0.0.0)
UDP Port	UDP Port number to transmit data
Output	Scroll through or directly select an output (values reflected in Video I/O and Mod I/O Board buttons)

About 4K TICO Compression Formats in the IP I/O Config Menu

Inputs

The 4K TICO input stream uses four grouped inputs when a 4K TICO compression format is selected in the menu. For example, if the 4K TICO ST 2022-6 format is selected for System Input 6, System Inputs 5, 7, and 8 will also be streaming 4K TICO (groups of inputs are fixed, e.g. 1-4, 5-8, 9-12, etc.).

For System Input groups, the first input in the group streams the video signal routed to deliver the 4K signal.

Outputs

The 4K TICO output stream uses four grouped outputs when a 4K TICO compression format is selected in the menu. For example if the 4K TICO ST 2022-6 format is selected for System Output 35, outputs 33, 34, and 36 will be set to stream 4K TICO (groups of outputs are fixed, e.g. 1-4, 5-8, 9-12, etc.).

For System Output groups, the first output in the group streams the video signal routed to deliver the 4K signal. The second output is a 1080p output of a sub-image that can be routed to a monitor.

Note: Changing any one 4K input/output to a non-4K streaming format (ST 2110-20, ST 2022-6), results in all the inputs/outputs in the group being changed to the selected format.

About the GV K-Frame Video I/O IP Config Bulk Configuration

Accessed by selecting the Bulk Configuration button in the IP I/O Config menu, you can configure multiple System Input, Output, or SFP parameters with the Bulk Configuration menus. Also, bulk configuration can be done by exporting, editing, and importing an Excel spreadsheet offline, using the Import/Export Config File button see [About Import/Export Config File \(Bulk Configuration\)](#), on page 22.

IP I/O Config Bulk Configuration Menu

The Input, Output, and Port Config SFP Video Bulk Configuration menus are divided into the SFP A and SFP B menu panes. The SFP B pane is for the Redundancy Mode and appears below the System Start and System End values entered for SFP A. Other parameters can be set and enabled/disabled independently for each SFP.

Input Video/Audio/Ancillary Bulk Configuration Menu Buttons

Button Group	Button/Data pad	Description
SFP A/B System SFP Range	System Start	First System SFP in the range
	System End	Last System SFP in the range
SFP A: Receive IP	Receive IP	Include/exclude the Receive IP settings
	Starting Address	IP Address for first SFP Input in the range
	Octet	Select the 1st, 2nd, 3rd, or 4th octet (default 4th) to increment the IP Address from the first IP Address in the range
	Inc	Enter the number to increment/decrement the IP Addresses in the range
SFP A: UDP Port	UDP Port	Include/exclude the UDP Port settings
	Port	Enter the UDP Port number for the range (default 1000)
	Inc	Enter the number to increment/decrement the UDP Port number in the range (default 0)
SFP A: IGMPv3 SSM (future release)	IGMPv3 SSM	Include/exclude the IGMPv3 SSM (Source Specific Multicast) settings (default 0.0.0.0)
	Starting Address	First IGMPv3 SSM IP Address on the SFP Input in the range (default 0.0.0.0)
	Octet	Select the 1st, 2nd, 3rd, or 4th octet (default 4th) to increment the IGMPv3 SSM IP Address from the first in the range
	Inc	Enter the number to increment/decrement the IGMPv3 SSM IP Addresses in the range (default 1)
SFP B: Redundancy Mode	Redundancy Mode	Include/exclude the Redundancy Mode settings
	Enable	Enable/Disable Redundancy Mode (default is Disabled)
SFP B: Receive IP, UDP Port, IGMPv3 SSM (future release)	All	Same as SFP A above

Input Video/Audio/Ancillary Bulk Configuration Menu Buttons

Button Group	Button/Data pad	Description
Stream Format	Stream Format	Include/exclude the Stream Format settings
	ST 2110-20	Video stream
	ST 2022-6	Video stream
	4K TICO ST 2022-6	Video stream
Enter	Enter	Apply bulk configuration
Cancel	Cancel	Cancel settings, return to IP I/O Config menu

Output Video/Audio/Ancillary Bulk Configuration Menu Buttons

Button Group	Button/Data pad	Description
SFP A/B System SFP Range	System Start	First System SFP in the range (default 0.0.0.0)
	System End	Last System SFP in the range (default 0.0.0.0)
SFP A: Transmit IP	Transmit IP	Include/exclude the Transmit IP settings
	Starting Address	IP Address for first SFP Output in the range (default 0.0.0.0)
	Octet	Select the 1st, 2nd, 3rd, or 4th octet (default 4th) to increment the IP Address from the first in the range
	Inc	Enter the number to increment/decrement the IP Addresses in the range
SFP A: UDP Port	UDP Port	Include/exclude the UDP Port settings
	Port	Enter the UDP Port number for the range (default 1000)
	Inc	Enter the number to increment/decrement the UDP Port number in the range (default 1)
SFP B: Redundancy Mode	Redundancy Mode	Include/exclude the Redundancy Mode settings
	Enable	Enable/Disable Redundancy Mode settings (default is Disable)
Stream Format	Stream Format	Include/exclude the Stream Format settings
	ST 2110-20	Video stream
	ST 2022-6	Video stream
	4K TICO ST 2022-6	Video stream
Enter	Enter	Apply bulk configuration
Cancel	Cancel	Cancel settings, return to IP I/O Config menu

Port Config SFP Bulk Configuration Menu Buttons

Button Group	Button/Data pad	Description
SFP A/B System SFP Range	System Start	First System SFP in the range
	System End	Last System SFP in the range

Port Config SFP Bulk Configuration Menu Buttons

Button Group	Button/Data pad	Description
SFP A: Local IP	Local IP	Include/exclude the Local IP settings
	Starting Address	Local IP Address for first SFP Input in the range (default 0.0.0.0)
	Octet	Select the 1st, 2nd, 3rd, or 4th octet to increment the Local IP Address from the first in the range
	Inc	Enter the number to increment/decrement the Local IP Addresses in the range
SFP A: Subnet Mask	Subnet Mask	Include/exclude the Subnet Mask settings
	Starting Address	Subnet Mask Address for first SFP Input in the range
	Octet	Select the 1st, 2nd, 3rd, or 4th octet to increment the Subnet Mask Address from the first in the range
	Inc	Enter the number to increment the Subnet Mask Address in the range
SFP A: Gateway	Gateway	Include/exclude the Gateway settings
	Starting Address	Gateway Address for first SFP Input in the range
	Octet	Select the 1st, 2nd, 3rd, or 4th octet to increment the Gateway Address from the first Gateway Address in the range
	Inc	Enter the number to increment the Gateway Address in the range
SFP B: Local IP, Subnet Mask, Gateway	All	Same as SFP A above
Enter	Enter	Apply bulk configuration
Cancel	Cancel	Cancel settings, return to IP I/O Config menu

About IP Audio, Ancillary, and Redundancy

SMPTe standards ST 2110-30 Audio, ST 2110-40 Ancillary Data, and ST 2022-7 Redundancy are now supported for IP streaming with the GV K-Frame X and V-series switcher systems, in the Video I/O, IP I/O Config switcher menu. Audio and Ancillary data are not currently supported for 4K TICO Compression formats.

Note: ST 2022-6 video can be configured to package ST 2110-30 audio and ST 2110-40 Ancillary data from other IP streams, the source's embedded audio and/or ancillary data will be replaced.

Redundancy

Redundancy requires that the IP stream on SFP B is being received on a separate network from SFP A so if one stream is compromised, the other stream is not affected.

Video I/O IP Setup and Configuration Overview

In the Eng Setup, Video I/O, IP I/O Config menu, configure the Video I/O IP in the following order:

- 1 Configure the SFPs
 - a Port Config SFPs (Local IP, Subnet Mask, Gateway),
 - b Inputs (Streaming Format, Redundancy, Receive IP, UDP Port),
 - c Outputs (Streaming Format, Redundancy, Transmit IP, UDP Port),
- 2 Review the IP Statistics Web Access page to verify stream throughput,
- 3 Troubleshoot any throughput issues, and
- 4 Verify timing for all sources using the Timing Analyzer in the Video Settings, Timing menu.
- 5 Optionally, configure Audio and/or Ancillary data.

Configure the Port Config SFPs

Perform this procedure before configuring the inputs and outputs:

- 1 Select Eng Setup, Video I/O, IP I/O Config in the menu.
- 2 Select the **Port Configs SFP** button to delegate the menu.
- 3 Navigate to a System SFP by selecting a Video I/O Board button (bottom) and using the scroll bar or select the SFP data pad (top right) and scroll with the Menu Panel soft knob or a mouse wheel.
- 4 Enter a Local IP Address by selecting the **Local IP** data pad and entering the IP Address in the pop-up keypad, select **Enter**.
- 5 Enter a Subnet Mask Address by selecting the Subnet Mask data pad.
- 6 Enter a Gateway Address by selecting the Gateway data pad.

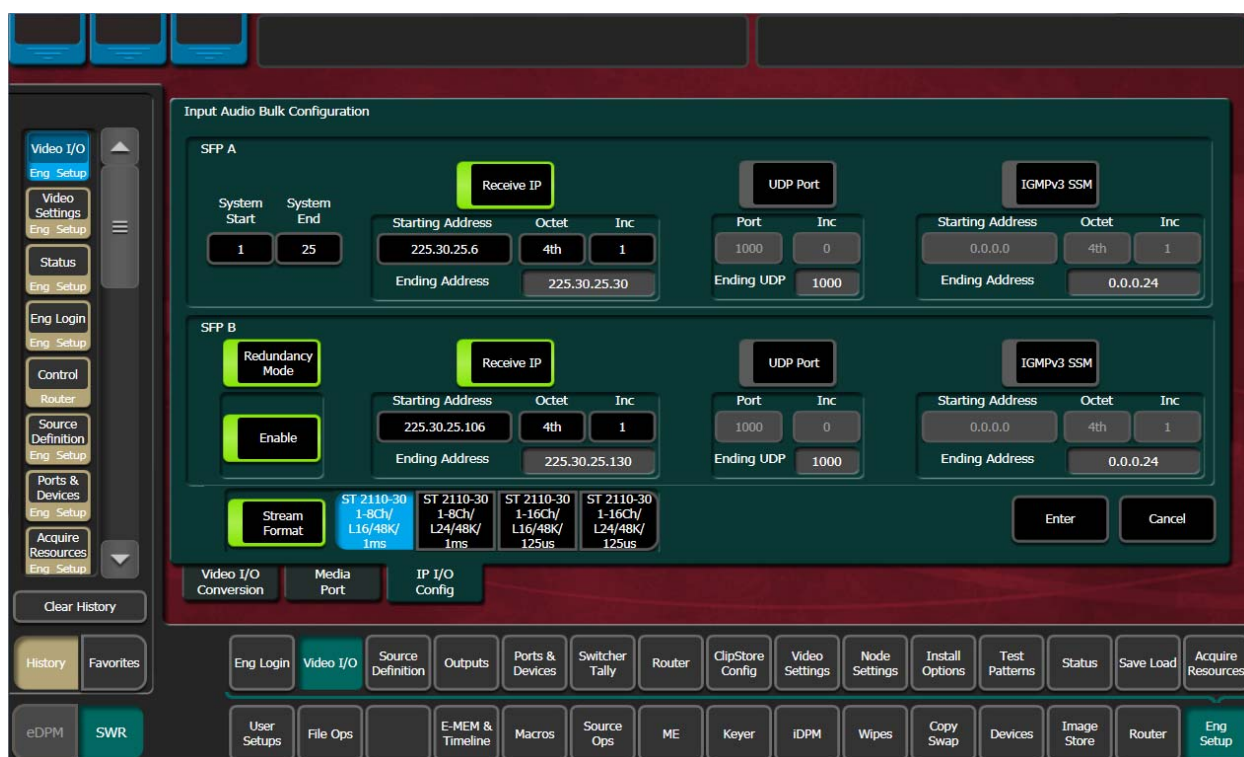
Configure System Inputs/Outputs

- 1 Select Eng Setup, Video I/O, IP I/O Config in the menu.
- 2 Select the **Inputs** or **Outputs** button to delegate the menu.
- 3 Navigate to a System Input/Output SFP by selecting a Video I/O or Mod I/O Board button (bottom) and using the scroll bar or select the SFP data pad (top right) and scroll with the Menu Panel soft knob or a mouse wheel.
- 4 Select the **Stream Format** data pad to select a format (**ST 2110-20, ST 2022-6, 4K TICO ST 2022-6**).
- 5 Select the **Enable** button for Redundancy.
- 6 Select the **Receive IP/Transmit IP** data pad, enter the IP Address in the pop-up keypad, and select **Enter**.
 - a If Redundancy Mode is enabled, configure the IP Address for SFP B also.
- 7 Select the **UDP Port** data pad, enter a port number.
- 8 Select **Enter**.

Configure System Input or Output SFPs in Bulk from the Menu

IMPORTANT: Bulk Configuration spreadsheets cannot be imported across different Frames, e.g. a bulk spreadsheet exported from a GV K-Frame X cannot be imported to a K-Frame V-series.

- 1 In the Video I/O, IP I/O Config menu, select **Inputs** or **Outputs** from the menu delegation buttons.
- 2 Select **Video**, **Audio**, or **Ancillary** from the stream type delegation buttons.
- 3 Select the **Bulk Configuration** button in the IP I/O Config menu.



- 4 Enter a range of SFP Inputs or Outputs for Video, Audio, or Ancillary in the Video Bulk Configuration menu:
 - a Select the **System Start** data pad, enter a System Input/Output number in the pop-up keypad, and select **Enter**.
 - b Select the **System End** data pad, enter a System Input/Output number.
- 5 With the **Transmit IP** or **Receive IP** button on, select the **Starting Address** data pad and enter the IP Address.
- 6 Optionally:
 - a Select the **Octet** data pad and select the octet to increment when configuring the IP Addresses, and/or,
 - b Select the **Inc** data pad and enter a positive or negative incremental value.
- 7 With the **UDP Port** button on, select the **Port** data pad and enter a port number (1000 is the default).

- 8 Optionally, enable the **Stream Format** button for Audio and select a Stream Format type.
- 9 Select **Enter**.

About Import/Export Config File (Bulk Configuration)

Accessed by selecting the Import/Export Config File button in the IP I/O Config menu, you can configure all of the IP I/O Config menu settings within an offline Excel spreadsheet and then import the file and apply the configuration. (For Bulk Configuration from the menu, see [Configure System Input or Output SFPs in Bulk from the Menu](#), on page 21).

When exported, a .ipe configuration file is created in Remote Storage (remote from the switcher, it is not recommended to install a third-party spreadsheet application on the switcher system).

The IP Config settings are exported as a Microsoft Excel file. Pull-down menus are provided for cells that have selectable settings in the Video I/O, IP I/O Config menu. The Inputs and Outputs tabs (bottom) are provided to access those menu delegations. In addition, the far right column is for notes. All Excel functionality is supported, including incrementing the IP Addresses in a column.

F2		ST 2022-6					
	A	B	C	D	E	F	G
1	System Input	Board Number	Board Input	Redundancy Mode	SFP Number	Video Stream Format	Video A Re
2	1	1	1	On	1	ST 2022-6	127.0.0.1
3	2	1	2	On	1	Auto Detect	127.0.0.2
4	3	1	3	Off	2	ST 2022-6	0.0.0.3
5	4	1	4	Off	2	ST 2110-20	0.0.0.4
6	5	1	5	Off	3	4K TICO ST 2022-6	0.0.0.5
7	6	1	6	Off	3	ST 2022-6	0.0.0.6
8	7	1	7	Off	4	ST 2022-6	0.0.0.7
9	8	1	8	Off	4	ST 2022-6	0.0.0.8
10	9	2	1	Off	1	ST 2022-6	0.0.0.9
11	10	2	2	Off	1	ST 2022-6	0.0.0.10
12	11	2	3	Off	2	ST 2022-6	0.0.0.11
13	12	2	4	Off	2	ST 2022-6	0.0.0.12
14	13	2	5	Off	3	ST 2022-6	0.0.0.13
15	14	2	6	Off	3	ST 2022-6	0.0.0.14
16	15	2	7	Off	4	ST 2022-6	0.0.0.15
17	16	2	8	Off	4	ST 2022-6	0.0.0.16
18	17	3	1	Off	1	ST 2022-6	0.0.0.17
19	18	3	2	Off	1	ST 2022-6	0.0.0.18
20	19	3	3	Off	2	ST 2022-6	0.0.0.19

Note: Importing the bulk config file with alterations to the System Input, Board Number, or Board Input cells can result in reported errors, however this will not prevent other valid settings from being imported.

About the “Type” Column

The IP Config file Type column (scroll to the far right) in the spreadsheet provides a list of the IP I/O and SDI I/O boards installed in the system, as of the last export. SDI board types can be configured for IP so if an IP board were to be installed in that slot later, the imported IP Config file settings would be applied.

Note: Pre-configured IP I/O settings in the SDI Type cells are informational only, until a physical IP I/O board is installed in the Frame.

Spreadsheet Formatting Tip

To make the spreadsheet much easier to read and edit, format the alignment of the heading cells to vertical (90 degrees). This will reduce the width of the spreadsheet significantly.

Bulk Configure SFPs Using a Spreadsheet

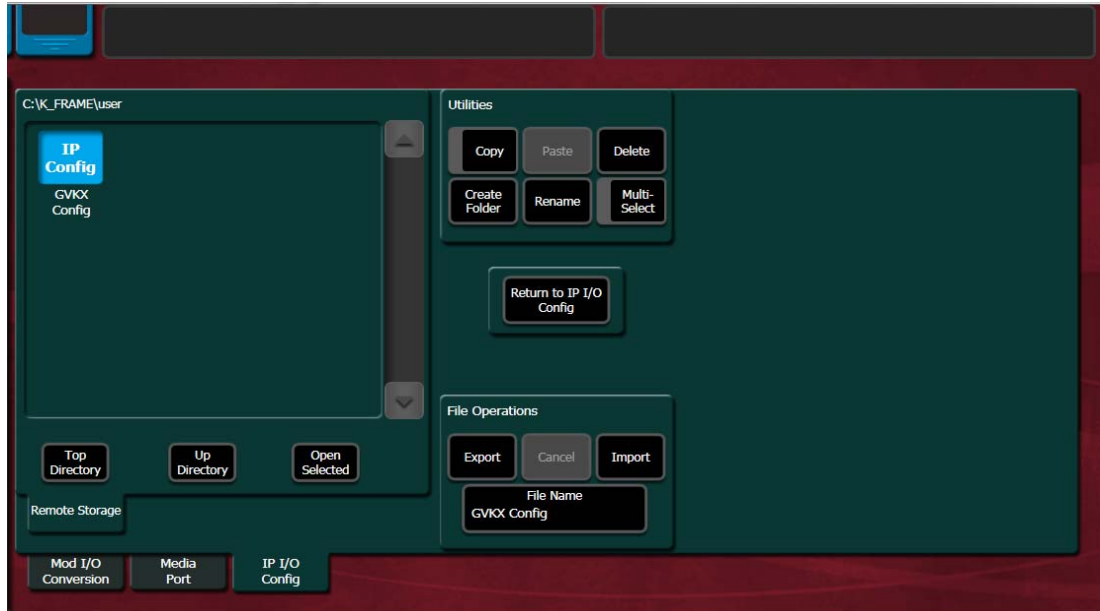
- 1 In the Video I/O, IP I/O Config menu, select the **Import/Export Config File** button.
- 2 Navigate to the location you wish to save the GV K-Frame X config file, (C:\K_Frame\User).



- 3 Select the **File Name** button in the File Operations pane and enter a name in the pop-up keypad, select **Enter**.
- 4 Select **Export**.
- 5 Open the **Config.ipe** folder (C:\K_FRAME\user\GVKX Config.ipe).
- 6 Open and edit the Excel Workbook Config file.

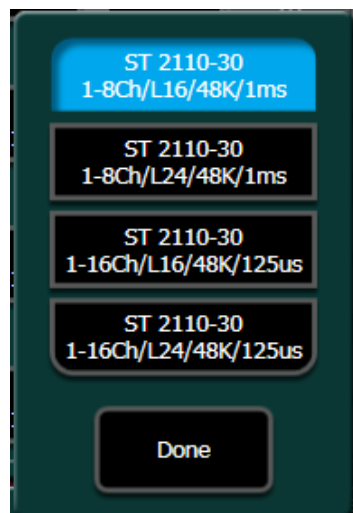
IMPORTANT: For tables with button descriptions corresponding to the cells, see [IP I/O Config Bulk Configuration Menu](#), on page 17.

- 7 Save the file in Excel.
- 8 Navigate to and select the **IP Config** folder in the IP I/O Config menu you named and select **Import**.



Configure ST 2110-30 Audio Type for Inputs/Outputs

- 1 Select Eng Setup, Video I/O, IP I/O Config in the menu.
- 2 Select the **Inputs/Outputs** then **Audio** button to delegate the menu.
- 3 Navigate to a System Input using the scroll bar or select the SFP data pad (top right) and scroll with the Menu Panel soft knob or a mouse wheel.
- 4 Select the **Stream Format** data pad to select a format that matches the input/output source. Each System Input/System Output can use different Audio Stream Formats.



The parameters from left to right are:

- Channels (e.g. 1-8Ch),
- Bits per linear audio sample (e.g. L16),
- Audio sample rate (48K), and
- Time between packets (e.g. 125 µsecs).

Note: Packets sent every 1 microsecond cannot contain up to 16 channels of audio, therefore they are limited to 1 to 8 channels.

- 5 Optionally, select the Redundancy **Enable** button.
- 6 Select the **Receive IP/Transmit IP** data pad, enter the IP Address in the pop-up keypad, and select **Enter**.
 - a If Redundancy Mode is enabled, configure the IP Address for SFP B also.
- 7 Select the **UDP Port** data pad, enter a port number.
- 8 Select **Enter**.

Configure ST 2110-40 Ancillary

- 1 Select Eng Setup, Video I/O, IP I/O Config in the menu.
- 2 Select the **Inputs** then **Ancillary** button to delegate the menu.
- 3 Navigate to a System Input using the scroll bar or select the SFP data pad (top right) and scroll with the Menu Panel soft knob or a mouse wheel.
- 4 Optionally, select the Redundancy **Enable** button.
- 5 Select the **Receive IP/Transmit IP** data pad, enter the IP Address in the pop-up keypad, and select **Enter**.
 - a If Redundancy Mode is enabled, configure the Receive IP Address for SFP B also.
- 6 Select the **UDP Port** data pad, enter a port number.
- 7 Select **Enter**.

About Switcher System Timing

Switcher System Timing (SST) is the position of the switcher timing in relation to the reference signal. SST can be delayed or advanced using the Switcher Horizontal and Switcher Vertical Offsets in the Eng Setup, Video Settings, Timing menu.

Typically, there are two methods for timing the switcher system and sources: either the sources are at zero timing and the switcher is delayed or the switcher system timing is at zero and the sources are back-timed. Regardless of the method, all video signals must be received earlier than the SST and the source input timing must be within a specific timing window for an input signal to be timed correctly. The Timing menu provides the information and controls needed to insure the input timing is within the timing window.

Decapsulation (data unpacking) buffers can accommodate multiple line differences between IP inputs but the output of the decapsulation must be SST plus a few microseconds in order to align all of the inputs for video processing.

Encapsulation (data packetizing) time varies depending on the video line rate. Encapsulation time is how long it takes to accumulate a packet of data; a packet will not be transmitted until the packet is full. 1080p and 1080i take approximately one quarter of the time of a line of video to complete encapsulation of one packet while 720p takes approximately one third of the time of a line of video.

Additionally, TICO encoding adds approximately five lines of delay and decoding adds approximately three lines of delay.

The following diagram shows the SDI/IP signal path and provides example of the timing delays and offsets that need to be considered as part of system configuration.

Auto-timing Specifications

K-Frame IP Switcher System Auto-timing Window, by Format (Hz)

Frame Operating Mode	ST 2110-20	ST 2022-6	ST TICO 2022-6
720p/59.94/60	-18 μ s, -11 lines/-22 μ s, 0 lines	-20 μ s, -10 lines/-10 μ s, 0 lines	N/A
720p/50	-18 μ s, -11 lines/-22 μ s, 0 lines	0 μ s, -9 lines/-10 μ s, 0 lines	N/A
1080i-1080psf/29.97/30	0 μ s, -8 lines/-8 μ s, -1 lines	-8 μ s, -8 lines/-11 μ s, 0 lines	N/A
1080i-1080psf/25	-30 μ s, -7 lines/-2 μ s, -1 lines	-27 μ s, -6 lines/-11 μ s, 0 lines	N/A
1080psf 23.98/24	-30 μ s, -7 lines/-30 μ s, 0 lines	-18 μ s, -6 lines/-3 μ s, 0 lines	N/A
1080pA 59.94/60	-12 μ s, -7 lines/-5 μ s, -1 lines	-2 μ s, -8 lines/-7 μ s, 0 lines	-2 μ s, -11 lines/-7 μ s, -3 lines
1080pA 50	-12 μ s, -7 lines/-3 μ s, -1 lines	-11 μ s, -6 lines/-7 μ s, 0 lines	-11 μ s, -9 lines/-7 μ s, -3 lines

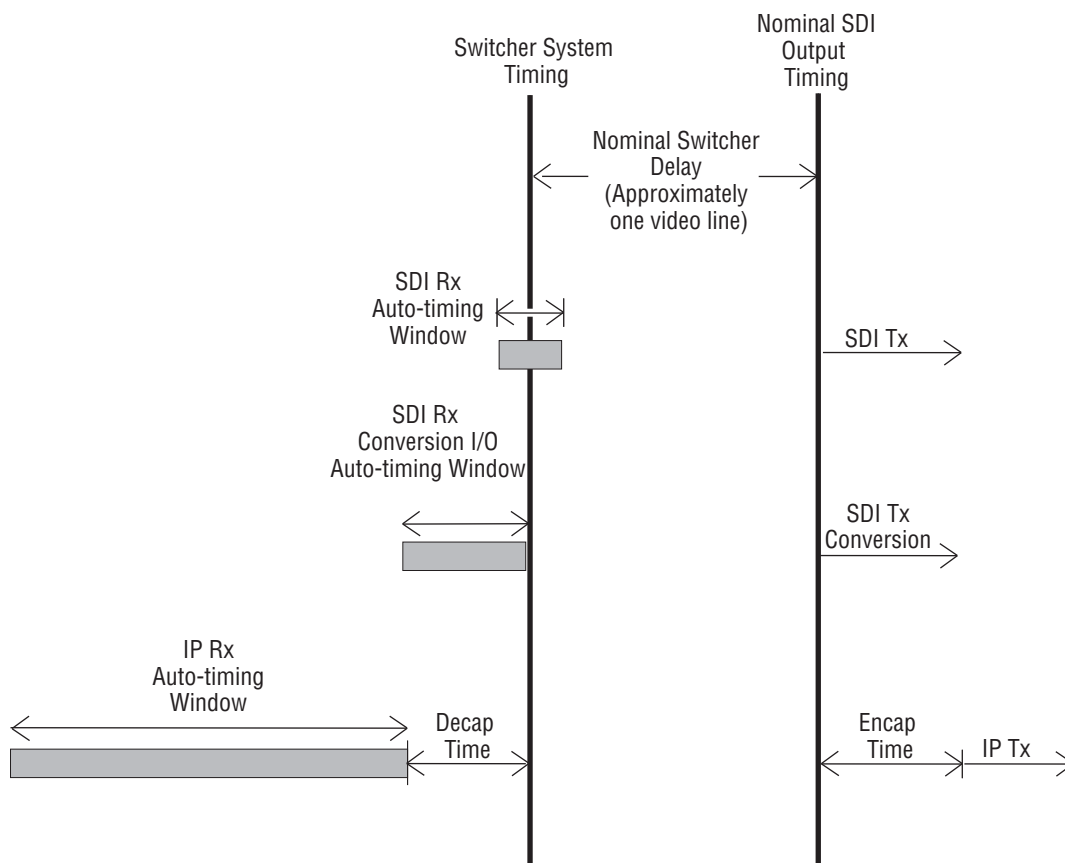
K-Frame SDI Timing Windows

Frame Operating Mode	Standard SDI	Conversion Board (In Bypass Mode) ^a
525i 29.97	+/- 8.69 μ s	-63.4 μ s/0
625i 50	+/- 8.88 μ s	-64 μ s/0
720p/59.94/60	+/- 2.02 μ s	-22.2 μ s/0

K-Frame SDI Timing Windows

Frame Operating Mode	Standard SDI	Conversion Board (In Bypass Mode) ^a
720p/50	+/- 4.23 μ s	-26.6 μ s/0
1080i-1080psf/29.97/30	+/- 5.73 μ s	-29.6 μ s/0
1080i-1080psf/25	+/- 8.68 μ s	-35.5 μ s/0
1080psf 23.98/24	+/- 9.43 μ s	-37.0 μ s/0
1080pA 59.94/60	+/- 2.87 μ s	-14.8 μ s/0
1080pA 50	+/- 4.34 μ s	-17.7 μ s/0
1080pB 59.9/60	+/- 9.44 μ s	-29.6 μ s/0
1080pB 50	+/- 12.39 μ s	-35.5 μ s/0

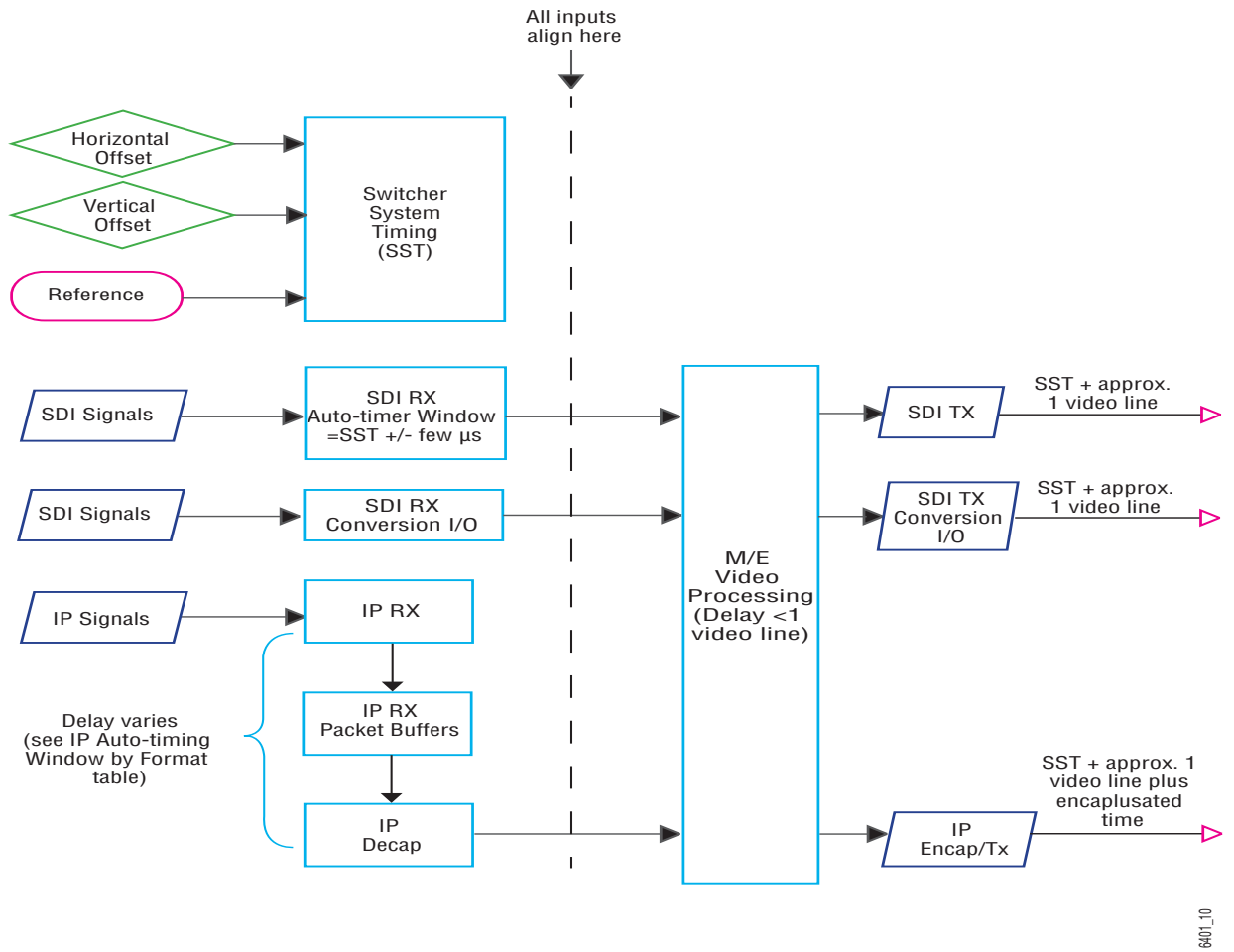
a. When conversion is on, video signals are automatically frame-synced.



(See Auto-timing Specifications tables for Auto-timing Window ranges)

SDI/IP Switcher Timing Diagram

6501_00



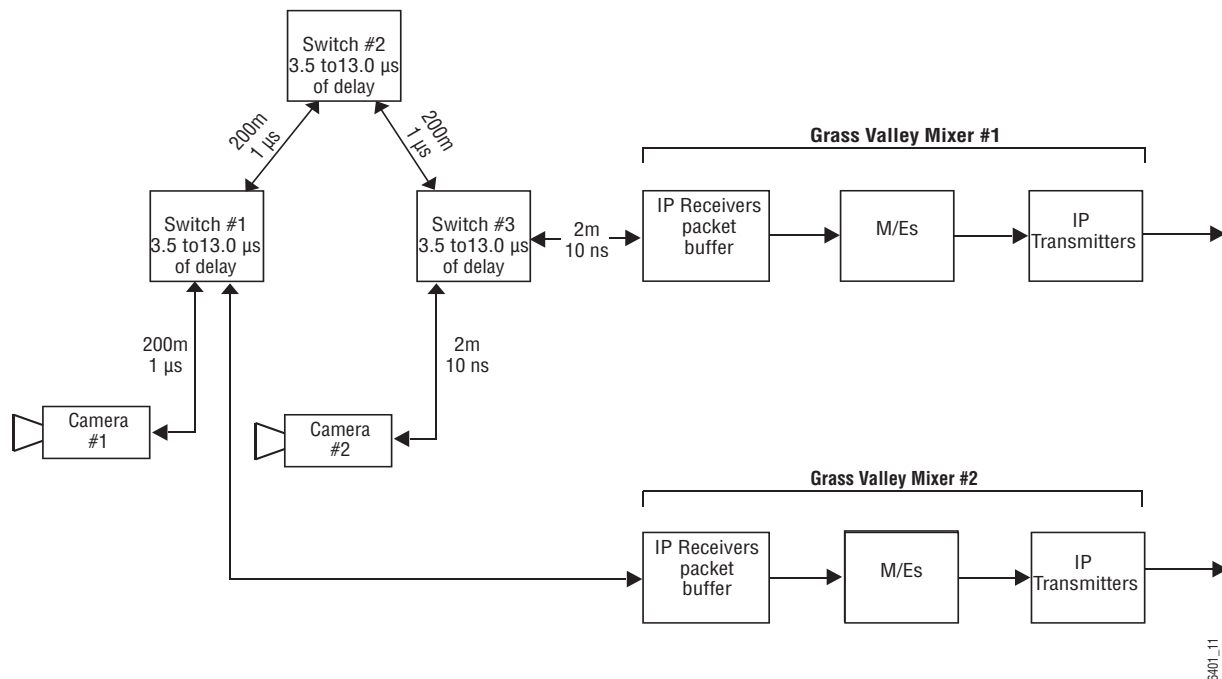
SDI/IP Switcher Signal Flow

6401_10

Large Configurations

In a large event, there can often be multiple Grass Valley switchers and many sources. Some sources, for example cameras, might be routed through a spine and leaf architecture that includes more than one IP switch. Each switch adds delay that will affect the system timing. Use the Timing Analyzer in the Eng Setup, Video Settings, Timing menu to assist in adjusting for these delays.

The following signal flow illustrates that when Camera #1 is routed to Mixer #1, up to 52 µsecs of delay can be added, including delay for lengths of cable. Conversely, when Camera #2 is connected to Mixer #1, there can be as little 3.5 µsecs of delay.



Multi-Switcher System IP Timing Delay Example

Timing Analyzer Menu

Note: 2160p is not currently supported in the Timing menu.

The Timing menu is in the Eng Setup, Video Settings menu.



For IP, the *Timing Window* displays the Frame Operating Mode, source type, and the timing window (range) that the source must be within to receive the video. Sources outside the timing window will most likely not pass through the switcher.

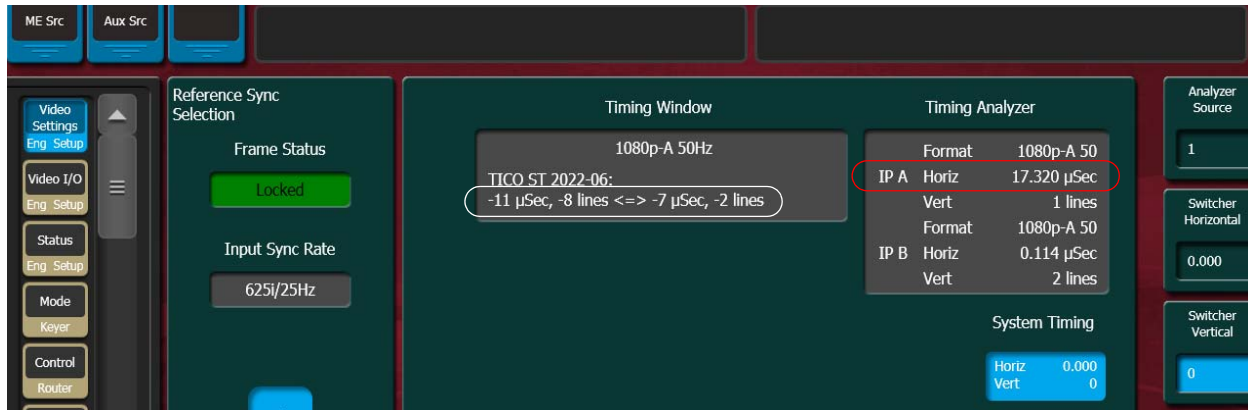
The Timing Analyzer displays the streaming format plus the horizontal and vertical position relative to the system timing for both the A and B streams of the selected source. If the Timing Analyzer reveals that the source is not within the range as displayed in the Timing Window, adjustments can be made at the source or at the switcher by adjusting the Switcher Horizontal and/or Vertical data pads at the far right of the menu.

The System Timing data pad shows the Switcher System Timing in microseconds for Horizontal and lines for Vertical. Changing the SST moves the overall switcher timing relative to its reference and the Auto-timing window relative to all sources.

Correcting an Out-of-Time Stream

CAUTION: Adjusting the Switcher Horizontal and Vertical Offsets moves the switcher's system timing which will affect all switcher sources.

- 1 Review the timing as displayed in the Timing Analyzer and compare it to the range in the Timing Window.
- 2 When the source is outside the timing window:



- a Change the source timing, or,
 - b Adjust the switcher timing in the Timing menu by selecting the Analyzer Source (far right) and changing the Switcher Horizontal and Switcher Vertical data pads until the source is within the timing window.
- 3 Once all the sources are timed correctly, power cycle the switcher and verify that all sources are still within the correct timing window.

IP SFP Statistics Web Access

The IP SFP Statistics can be accessed by entering the Video Frame's IP Address into a browser from a PC on the same network as the Frame. Buttons are provided to reset packet counts for each I/O board and to refresh the page (refreshes the entire webpage).

The IP SFP Statistics Web Access page can be used to help identify the signals that make up an IP stream (Video, Audio, Ancillary) or streams that are not passing through the switcher (see [IP Timing Troubleshooting](#), on page 33).

ST 2110-20
Stream Missing

IP SFP Statistics

Board
 16x8 IO IP 4
 Reset Packet Counts
 Refresh Page

SFP	MAC Address	Rx Throughput	Rx PacketCount	Rx ErrorCount	Tx Throughput	Tx PacketCount	Tx ErrorCount	Link Speed (Gb/s)
1A	00:50:1e:05:78:07	655,774,175	1,468,896,764	0	327,886,885	734,424,203	0	10
1B	00:50:1e:05:78:08	327,748,130	734,472,431	0	327,746,591	734,424,005	0	10
2A	00:50:1e:05:78:09	661,311,595	1,514,276,562	0	327,886,963	734,424,079	0	10
2B	00:50:1e:05:78:0a	655,774,536	1,468,896,362	0	327,886,782	734,424,001	0	10
3A	00:50:1e:05:78:0b	655,494,837	1,468,896,115	0	330,526,185	757,368,912	0	10
3B	00:50:1e:05:78:0c	655,815,638	1,468,897,798	0	330,685,906	757,369,772	0	10
4A	00:50:1e:05:78:0d	655,534,764	1,468,896,404	0	330,545,088	757,369,061	0	10
4B	00:50:1e:05:78:0e	655,535,033	1,468,896,373	0	330,545,354	757,369,046	0	10
5A	00:50:1e:05:78:0f	655,810,915	1,468,848,467	0	330,683,958	757,369,628	0	10
5B	00:50:1e:05:78:10	0	0	0	0	0	0	10
6A	00:50:1e:05:78:11	655,530,086	1,468,848,283	0	330,544,410	757,369,536	0	10
6B	00:50:1e:05:78:12	0	0	0	0	0	0	10
7A	00:50:1e:05:78:13	655,495,049	1,468,846,222	0	330,526,285	757,368,478	0	10
7B	00:50:1e:05:78:14	0	0	0	0	0	0	10
8A	00:50:1e:05:78:15	655,760,623	1,468,846,545	0	330,659,049	757,368,638	0	10
8B	00:50:1e:05:78:16	0	0	0	0	0	0	10

ST 2110-20
Two Streams

ST 2110-20 +
ST 2110-30

Nominal IP Stream Throughput

Nominal IP Throughput

Signal	Description	Format	MB per second
Video	3G	ST 2110-20 (59Hz ^a)	327,745,613
Video	3G	ST 2022-6	389,771,715
Video	HD	ST 2110-20 (59Hz)	163,940,697
Video	HD	ST 2022-6	194,886,286
Audio	1-8 Channels	ST 2110-30	1,209,594
Audio	1-16 Channels	ST 2110-30	2,768,482
Ancillary	Data	ST 2110-40	10,910

a. ST 2110-20 throughput is dependent on the Video Frame frame rate.

IP Timing Troubleshooting

- 1 Use IP Statistics to verify throughput for each port. Throughput for similar ports should have similar numbers ([IP SFP Statistics Web Access](#), on page 32).
- 2 Ports with low numbers are missing signal streams. Check the Receive and Transmit IP addresses and port numbers ([About GV K-Frame X and V-series Video IP I/O Configuration](#), on page 13).
- 3 For ports that have no throughput, check the Port Configuration and IP switch setup.
- 4 Check the cables and SFP connections.
- 5 If the statistics appear correct but there is no video from the source, it is likely the signal is out of time. Use the Timing Analyzer to verify the timing ([Timing Analyzer Menu](#), on page 30).

About the K-Frame Software Update

K-Frame systems are shipped with the current software version installed on the Frame and Control Surface. Updates to K-Frame system software are available for download from the Grass Valley website. Software installation tools are provided with each update package.

The K-Frame Deployment Tool extracts and copies Grass Valley switcher system files to a Menu Panel or PC. These files include the K-Frame Installer Program.

The K-Frame Installer Program is used to install the extracted software to Grass Valley Video Processor Frame(s) and Control Panel(s) over the network. The K-Frame Installer Program also launches other installation tools (wizards). One wizard installs the Menu application directly on the Menu Panel or PC running the installer program. If multiple Menu Panels (or PCs running the Menu application) exist, each must be updated individually. Installation wizards can also be launched for the KSP and NetConfig features.

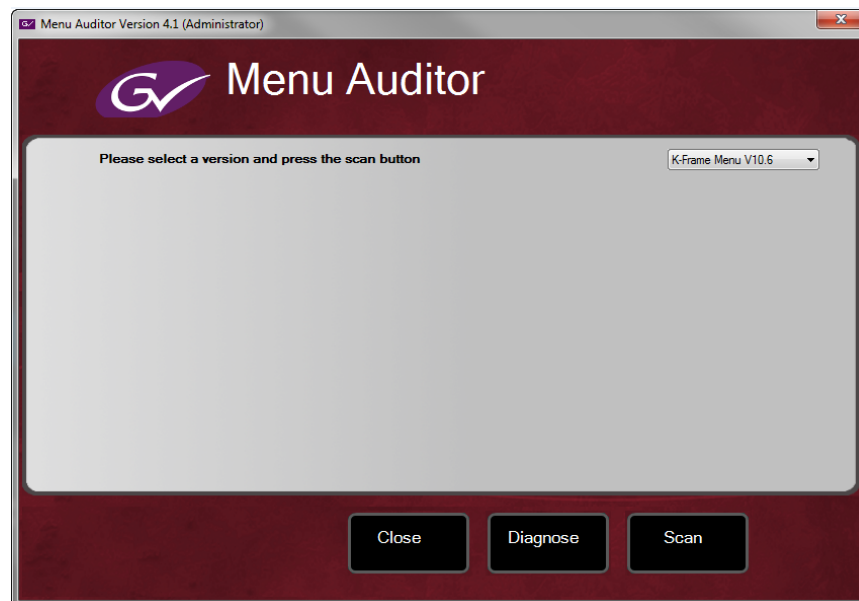
Run the Menu Auditor for Third Party Updates

The Menu Auditor Program is included on the USB Stick provided with your system and available from the grassvalley.com support menu. The Menu Auditor is run to verify that the required Third Party Updates are installed, including Microsoft .NET. The Menu Auditor will indicate which updates need to be installed to ensure an up-to-date system.

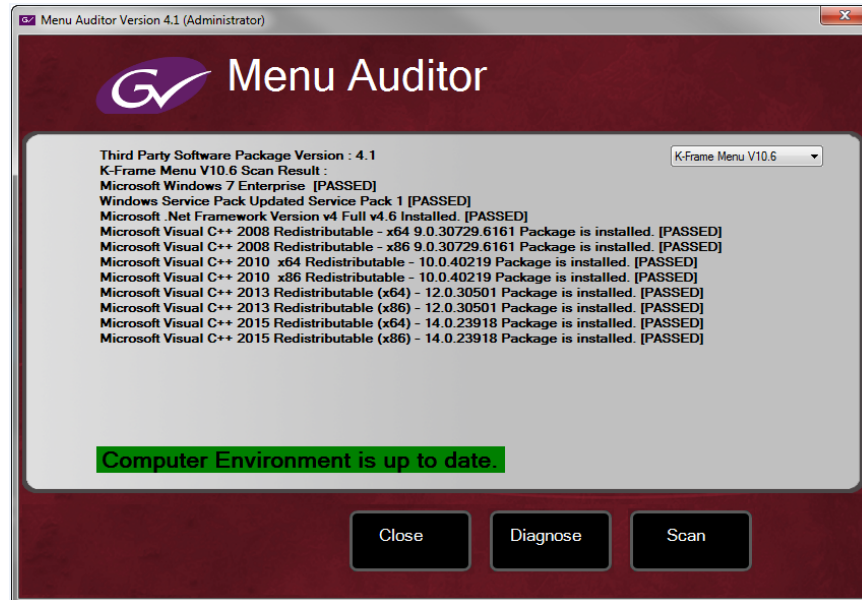
CAUTION: Out of date third-party software can cause the menu to become unstable or stop working.

To check for third party updates on a Menu Panel or Menu on PC:

- 1 Run the Menu Auditor Program.



- 2 Select **Scan**. The Auditor will check each relevant installation and indicate the state of the computer environment.



- 3 Select the **Install** buttons of any files that are not of the correct version.
- 4 Select the **Diagnose** button to run the scan and put the windows machine data into a file for diagnostic purposes.

Materials Required

You will need the following materials for this update:

- K-FrameSetup.exe, which can be downloaded from the Grass Valley Customer Support website along with the latest ClipStore/Summit software, Release Notes, and Release Notes Addendum, and copied to a USB stick,
- Backup media for configuration and effects files,
- USB mouse and keyboard, and
- a Menu Panel, or user PC, properly configured on the switcher system network.

Update the K-Frame Software

This software update procedure assumes your Grass Valley switcher system is fully operational with all network communications properly configured. Refer to the *K-Frame Installation & Service Manual* for configuration instructions.

Back up Current Configuration and Effects Files:

- 1 Save your system configuration files (Eng Setup, User Setups), and your operational registers (EMEM, Macros, etc.) and other settings. You can create a Show file that contains all this information. See the K-Frame Kayenne/Karrera/GV Korona User Manual for file operations instructions.

Note: A thumb drive that includes the current Grass Valley switcher software version is a convenient location to back up these files.

- 2 Store the backup media in a safe place. You may want to use these files if you decide to back down to that earlier software version.

Deploy the Switcher Update Package Files and Installer:

- 1 Exit the Menu application and any other applications that may be running on the Menu Panel or PC.
- 2 Disable any virus protection, Windows firewall, and any other firewall protections that may have been installed on the Menu Panel or PC. Firewalls must be inactive to allow switcher system software installation over the network.
- 3 Run the K-Frame Setup application, either:
 - a Insert the K-Frame Software USB stick into an available port on the Menu Panel or PC. Locate the removable disk in My Computer, open **K-FrameSetup.exe**, and select **OK**,- or -
 - b Download the K-FrameSetup.exe file from the Grass Valley download site, open the file, and select **OK**.

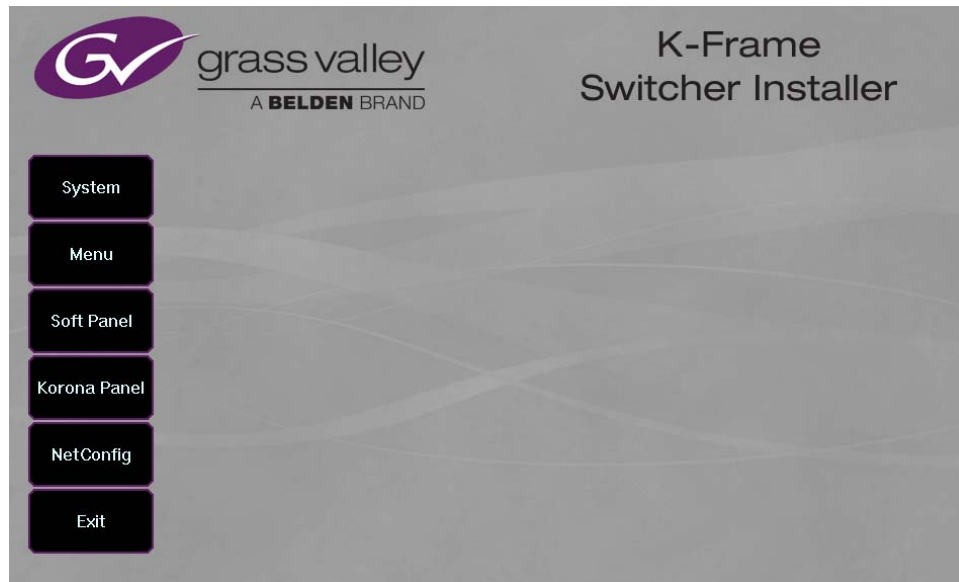
Note: If the same K-Frame Deployment Tool version files are detected, a Repair/Remove screen is displayed, allowing re-installation or removal of the Deployment files

- 4 Select **Next** in the K-Frame Deployment Tool window.
- 5 Accept the license agreement and select **Next**.
- 6 Select **Next** to accept the default deployment location. Alternatively, you can Browse to a different location to deploy the files. The "Ready to Install the Application" screen appears next.
- 7 Select **Next** to deploy the files.

Result: When the deployment completes, the K-Frame Installer Program will launch automatically. After the switcher files have been deployed, the K-Frame Installer Program can be launched at any time by opening the **K-Frame Installer** from the desktop icon.

K-Frame Installer Program Description

The K-Frame Installer Program initial screen has buttons on the left used to select various installers.



When **System** is selected, a screen appears with an expandable central hierarchy window, information on the upper right, and function buttons on the lower right.

Navigate to the Frame or Control Panel device in the hierarchy to display information for that device or install software.



Selecting **System Device(s)**, at the top of the hierarchy window displays the types of switcher devices residing on the network. Selecting a switcher device displays the system names present on the network of that switcher. Each system name is taken from the Video Processor Frame name. Selecting a system name reveals Frame, Panel, and optional Image Store items for that system, which when opened, allows selection of the individual devices making up that system. When a specific device is selected, information for it is displayed on

the right. This hierarchy allows easy identification of each switcher system's components when multiple switchers reside on the same network.

The K-Frame Installer program has the following other features, accessed by selecting its labeled button:

Rescan - Rescans the network for devices. This refreshes the screen to show the currently connected components and any modified system names.

Update - Updates the software on the selected device using the software deployed with this K-Frame Installer version.

Set Name - Opens a window allowing you to change the name of the selected device.

Set IP - (Control Panel selected in hierarchy window) - Opens a window allowing you to enter the IP address the Control Panel will use to communicate with the Video Processor Frame.

Clear NV - (Frame or Control Panel selected) Clears NV Memory.

Update All - (System selected) Updates software to all devices for the selected system, excluding Menus.

Create CF - Allows the creation of a Control Panel Compact Flash Card onto another CF Card.

CAUTION: The Create CF process wipes and formats the CF card.

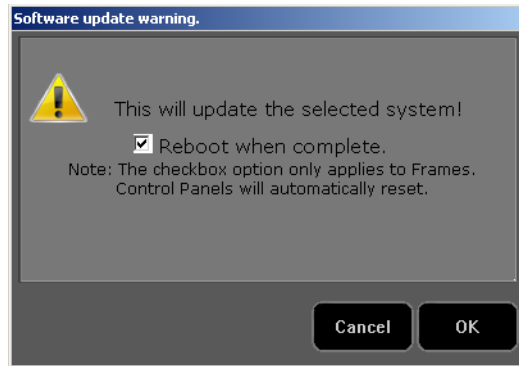
Update the K-Frame System Software

For Kayenne and Karrera, the K-Frame system's Video Processor Frame, Control Panels, and optional Image Stores can be updated in one operation. The GV Korona Control Panel is updated separately from the Frame and Image Store, see [Update the GV Korona Control Panel Software](#), on page 39.

- 1 With the K-Frame Switcher Installer Program launched, select the **System** button.



- 2 In the System menu, each K-Frame Switcher system consists of a Video Processor Frame, associated Control Panels; and PCU(s) for Kayenne, and optional Image Store. Use the mouse to navigate to the desired system (not an individual system device). When a system has been selected the **Update All** button becomes active.
- 3 Select **Update All**. The Software update warning dialog is displayed.



If the Reboot when complete box is checked, the Video Processor Frame, optional Image Store, and all associated Control Panels will reboot after the **OK** button in the Software update warning dialog is selected. If the box is not checked, you will need to manually reboot the Video Processor Frame and optional Image Store hardware after the software files have finished installing. Control Panels are always rebooted after a software update.

- 4 Select **OK**.
- 5 Select **Finish** when complete.

Update the GV Korona Control Panel Software

The GV Korona Control Panel software is updated separately from the Video Processor Frame.

- 1 With the K-Frame Switcher Installer Program launched, select **Korona Panel**.



- 2 Accept the License Agreement, select **Next**, and follow the prompts.

About Updating Spare Kayenne Control Panel Modules

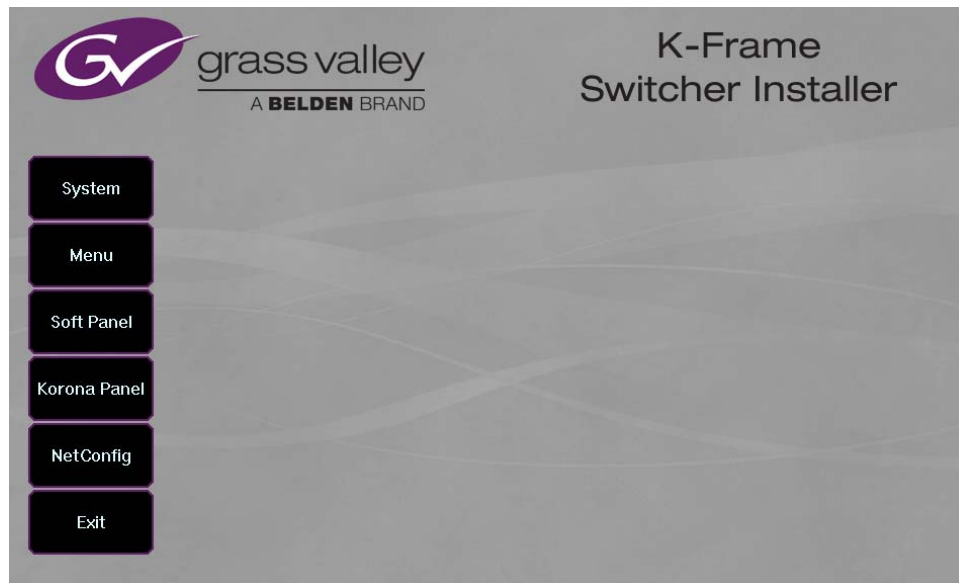
The Kayenne K-Frame Control Panel FPGAs will automatically be updated with software installation. However spare Kayenne Control Panel Modules must be connected to the Control Panel after initial software installation and the Control Panel software re-installed so all modules are loaded with the current FPGAs and ready for use when needed.

CAUTION: Do not interrupt power to GV switcher systems during software installation; the FPGAs will revert to an older version. If power is lost during software installation, install the software once the power has been restored.

Install the Menu Panel Application Update

CAUTION: For Menu on PC, you must be logged on as administrator or the installation will fail.

- 1 Select the K-Frame Switcher Installer desktop icon, if necessary, to launch the K-Frame Switcher Installer Program.



- 2 Select the **Menu** button. The K-Frame Menu Installation tool will launch.

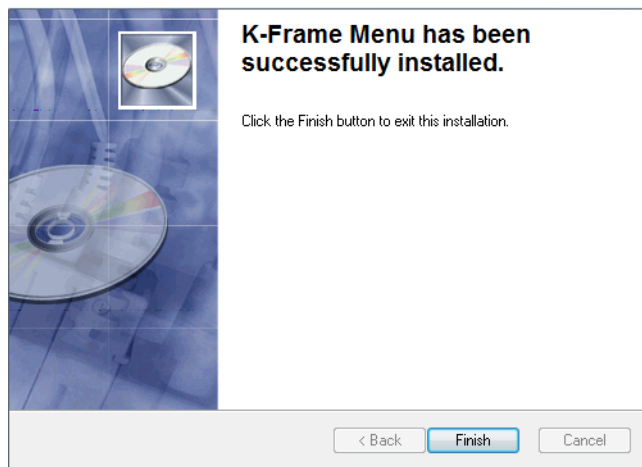


- 3 Select **Next**.
- 4 In either the Karrera, Kayenne, or GV Korona Control Panel area, choose either the Menu Platform (the Touch Screen Menu Panel) or User PC, and select **Next**.

- 5 Enter a name and organization in the User Information screen, leave the Anyone who uses this computer setting selected, and select **Next**.

Note: Selecting Only for me limits some settings to the currently logged in user. This may be appropriate if the Menu application is installed onto a PC shared by several users. However, this is not a foolproof security method and should not be relied on for mission critical applications.

- 6 Select **Next** to accept the default installation location. Alternatively, you can browse to a different location to install the application.
- 7 In the Ready to Install the Application menu, select **Next**.
- 8 When done, the Menu Successfully Installed screen appears, select **Finish**.
If you installed onto Menu hardware you will be prompted to reboot the computer.



- 9 Select **Exit** and answer **Yes** at the prompt to exit the K-Frame Installer.

Selecting the K-Frame Menu icon launches the new version of the Menu Panel application.

Soft Panel Installation

Selecting the Soft Panel button launches an individual installer for the KSP option. The Soft Panel installer is intended for a customer provided PC and the process is identical to the Menu on PC (see [Install the Menu Panel Application Update](#), on page 41). Install the menu and follow the prompts. See the *KSP Switcher Soft Panel Graphical User Interface Instruction Manual* for more information.

Soft Panel requirements:

- The installed menu software matches the K-Frame system
- 1920 x1080 display resolution
- Microsoft .NET Framework 4.5 Windows 7/Windows 10 (see [Run the Menu Auditor for Third Party Updates](#), on page 34)
- Microsoft Visual Studio 2010 redistributable is installed—(see [Run the Menu Auditor for Third Party Updates](#), on page 34)

Add the PC's Name and IP Address with the KSP software to the node list in the Eng Setup, Control Surfaces menu.

The KSP option is activated with a purchased license key.

About Updating the Host Address Decoder (HAD) FPGA

Each CPU or Image Store board installed in a Grass Valley K-Frame Video Processing Frame has a PCI Express endpoint for communication with the host processor. These PCI endpoints are governed by the HAD FPGA. Software updates can include firmware updates for these endpoint HADs.

For HAD FPGA update instructions, see the maintenance information in the *Kayenne/Karrera/GV Korona Installation & Service Manual*.

CAUTION: It is recommended that HAD (Host Address Decoder) FPGA (Field Programmable Gate Array) updates are performed by qualified personnel only, for example an EIC (Engineer In Charge).

About Updating the ARM Processor on the IP I/O and PTP Boards

For GV K-Frame X and V-series Frames, each 16x8 and 8x4 Video IP I/O (8x4 only for V-series) and PTP Mezzanine board (GV K-Frame X only) require an ARM processor software update as part of the software installation. For ARM processor update instructions, see the maintenance information in the *Kayenne/Karrera/GV Korona Installation & Service Manual*.

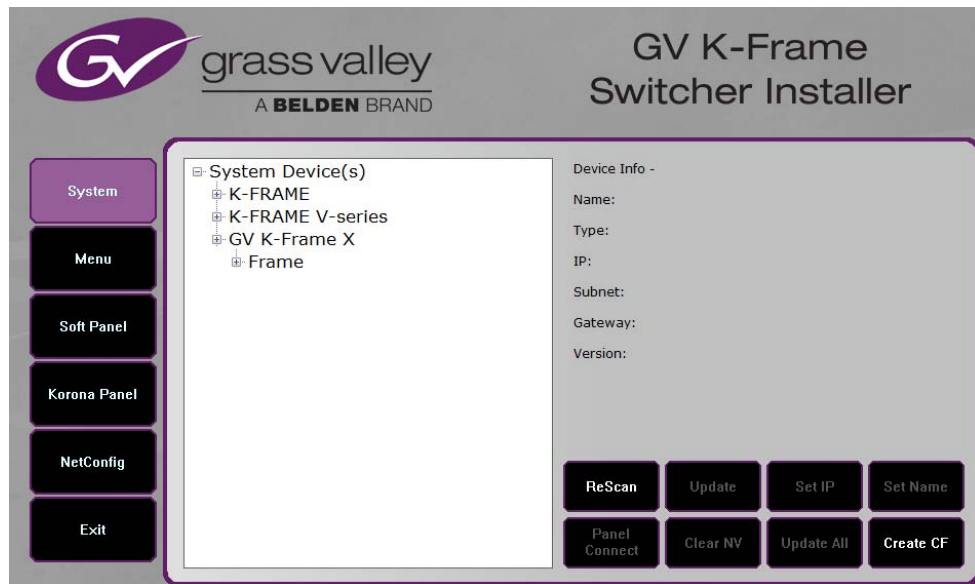
IMPORTANT: Board software updates are to be performed by qualified service personnel only.

Clear NV RAM for Control Panel and Frame

Use the following procedure on the Menu Panel or Menu on PC running the Menu Panel application that operates with the updated Video Processor Frame.

Note: A new Menu Panel or PC that has not been used with the switcher system will need to be configured as a Control Surface Node before it can operate with a switcher system. See the *K-Frame Installation & Service Manual* for specific instructions.

- 1 From the K-Frame Installer menu, select the **System** button.



- 2 Select the device to be cleared.
- 3 Select the **Clear NV** button. Repeat for Control Panel and Frame.



Sample Files and DPM Effects

Sample files or other elements and instructions for use are provided with an installer from the Grass Valley website. The K-Frame Sample Installer, available on the Software USB thumb drive that came with your system and from the Grass Valley website, can be used to place the K-Frame samples in the C:\K_Frame\user\Samples directory on the GV Switcher system.

IMPORTANT: When upgrading, install the samples after the initial software upgrade.

During installation, you can choose to install all (the default) sample effects or select specific effects, reducing installation times.

Sample DPM Effects

Starting with switcher software version 11.0, sample DPM effects are provided with the K-Frame Sample Installer. It is important to read the accompanying instructions on how to load and run the sample DPM effects.

Note: The C:/Images folder must be a shared folder on the network to use sample Image Store stills with sample DPM Effects.

About K-Frame V-series and S-series Samples and Effects

For K-Frame S-series and V-series Frames, samples that are built using more than four keyers will need some customization before incorporating those elements into a production.

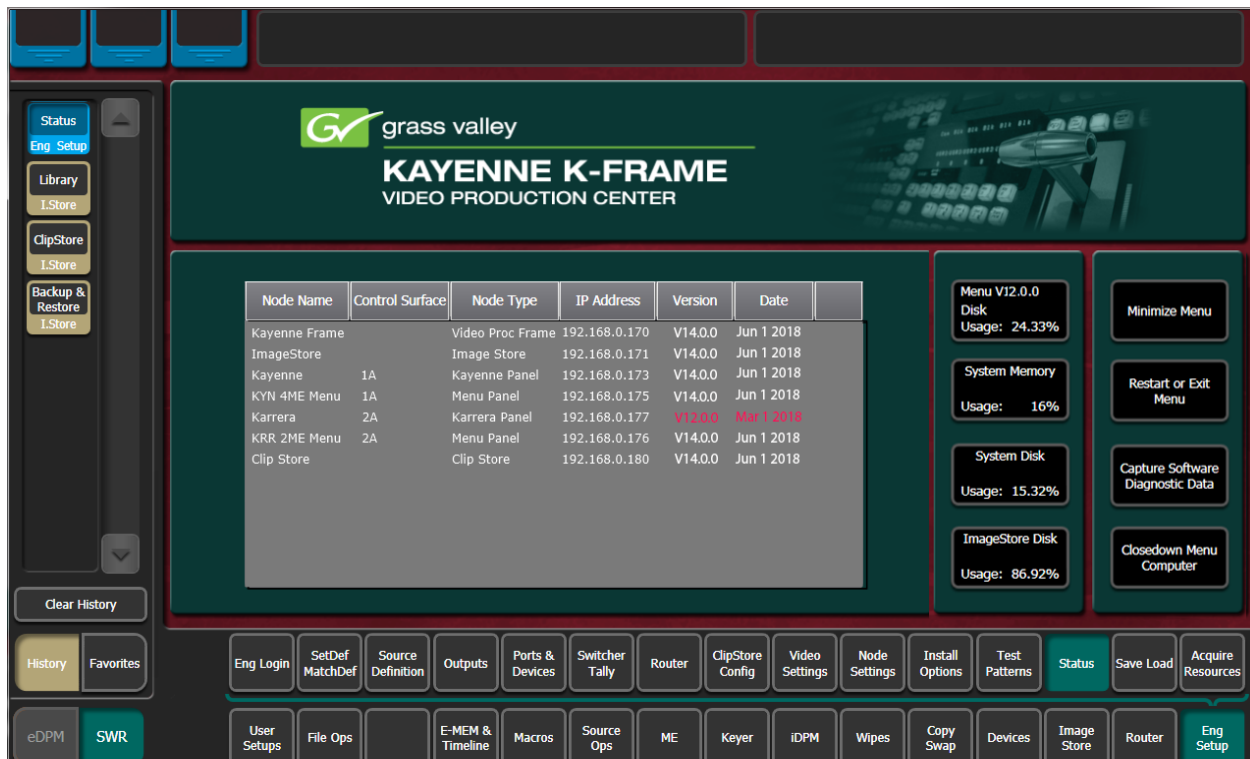
Install NetConfig and Newton Configurator (Optional)

Select the **NetConfig** button to launch the K-Frame NetConfig installer (similar to the Menu Panel installer). Both NetConfig and the Newton Configurator plug-in will be installed. Follow the directions displayed to install these applications onto that Menu Panel or PC.

Note: The K-Frame Installer Application and the separate NetConfig application cannot run simultaneously on the same Menu Panel or PC.

Check Software Versions

Launch the Menu application. The Status menu lists the switcher system devices. Ensure all the components are running the same software version. Mismatched versions will be reported with red text.



Confirm System Operation

- 1 Verify that all the installed MEs are operational. Select different crosspoints on the Control Panel and fly a key with an iDPM.
- 2 Ensure that any software enabled options operate correctly. Existing authorization codes should work with the new software.
- 3 Check that EMEMs run properly:
 - Older effects should work with the new software. If there are differences, however, you will need to edit or rebuild the effect with the new software version.
 - If older effects use iDPMs, it may require that you load, update, and save the show (see the *K-Frame User Manual* for more information).
- 4 Reload the Macros and check that they operate correctly.
- 5 Load some Image Store images and confirm they display correctly.

Back up New Configuration and Effects Files

- 1 When you are satisfied with system operation, save the new configuration files and effects as a Show file to a folder you've created on that version's K-Frame Software USB stick.
- 2 Label the media with the version and date and store it in a safe place.
- 3 Reactivate any virus protection on the Menu panel that may have been disabled at the start of this procedure.

This completes the standard switcher system software update procedure.

Update Other Grass Valley Switcher Systems Software

More than one switcher system (multiple Video Processor Frames) may reside on your network. Each system can operate simultaneously with different software versions, as long as all the components in each system run the same software version.

Additional switcher systems are updated using the same procedure as described.

- 1 Select the other switcher system on the K-Frame Installer Program System hierarchy screen, and choose Update All.
- 2 Insert the K-Frame Software USB stick into each Menu Panel or PC associated with that switcher system and choose the Menu software update button.

Individual Switcher System Component Update

Individual components can be selected for update (just the Video Processor Frame, optional Image Store, or just one Control Panel). However, all components of a switcher system must run the same software version. If updating components individually, make sure they all are at the same version before resuming K-Frame system operation.

CAUTION: Allow the Video Processor Frame and optional Image Store to completely finish rebooting before attempting to install Control Panel software. The Control Panel update process requires the Frame to be operational.

K-Frame Software Removal With Windows OS

K-Frame Deployment Tool versions and Menu Panel programs can be removed using standard Windows techniques (Setup/Add or Remove Programs/Uninstall or Change Programs, etc.).

Deployment Archive Files

When new software versions are installed with the K-Frame Deployment tool, older version deployment files are not automatically removed. Each K-Frame deployment creates its own software version folder. If the default installation location, or the same alternative destination, is always chosen, all the version folders will be listed together.

Note: All the components of a switcher system must run the same software version. If you want to return to an earlier version of software, you should back-down the software on the Video Processor Frame, all Control Panels, and all Menu Panel applications used with that switcher system.

Default destinations:

- C:\Program Files (x86)\Grass Valley\GV Switcher\ K_Frame_Switcher_VX.X for 32-bit
- C:\Program Files\Grass Valley\GV Switcher\ K_Frame_Switcher_VX.X for 64-bit systems.

Running the K_FrameInstaller.exe file in any version's folder will permit installation of that version's files.

CAUTION: Before installing an older version of the Menu Panel application, you must first remove the newer, currently installed Menu Panel version, either using that newer version's K-Frame Deploy Tool or Windows Add or remove programs.

Calibrate the Lever Arm and Joystick

See the Maintenance section of the *Kayenne/Karrera/GV Korona Installation & Service Manual*.

K-Frame System Suggested IP Addresses

K-Frame systems are shipped with default IP addresses, and it is suggested that you reserve several IP Address in sequence to configure Control Panel suites and additional devices. These default addresses can be used if the K-Frame system is operating on a dedicated network with no other devices present.

Note that these addresses can be changed during installation so your system may not be using these defaults.

K-Frame System Default IP Addresses

Device	IP Address
Video Processor Frame	192.168.0.170
Image Store	192.168.0.171
Control Panel Suite 1A	192.168.0.173
Touch Screen Menu Panel 1	192.168.0.175
ClipStore	192.168.0.180
All Subnet Masks)	255.255.255.0
All Gateways (except V1.6.5 software Remote Aux panel)	192.168.0.1
Reserved For Future Use	CAUTION: Do not connect any devices configured with the following IP addresses to a Karrera network.
Video Processor Frame Gigabit Ethernet	192.168.0.172
PCU Panel (Kayenne) Reserved LAN Port	192.168.0.174

Note: Customer orders with multiple Control Panels will be preconfigured to the listed IP addresses. However, if one of these additional Control Panels is reset to factory defaults, it will be given the standard 1A default 192.168.0.173 address.

IP Addresses and Single Control Surface Systems

A new Grass Valley system will operate on an isolated network with the default IP addresses configured at the factory (except for 32 Crosspoint Remote Aux panels). However, if you wish to integrate the system into an existing network, wish to use gateway communications, or wish to add more control surface components, then the IP addresses may need to be changed.

IP Addresses and Multiple Control Surfaces and Suites

If you plan to use multiple control surfaces (for example, more than one Control Panel or more than one Menu Panel) with the same Video Processor frame, you must make sure the IP addresses of the additional items are unique before connecting them to the network. Using default IP addresses will cause network conflicts and unpredictable system operation. See the *Kayenne/Karrera/GV Korona Installation & Service Manual* for network configuration information.



Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1 530 478 4148.

To obtain a local phone number for the support center nearest you, please consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An online form for e-mail contact is also available from the website.

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