

## Connecting a K-Frame to vsmStudio

This document was created on 22/05/2013

vsmStudio Build 1926

K-Frame Simulator KSP v6.0.2.

This document will explain the three possible connections between vsmStudio and a GVG K-Frame.

1. Tally through the GVG Ethernet protocol
2. Aux bus routing through the S7000 protocol
3. Label transferring from vsmStudio to the K-Frame through the S7000 protocol.

### 1.1 Preparing vsmStudio to connect to the K-Frame Tally.

1.1.1 The first step needed would be to create the GPI's in vsmStudio that will be associated with up to three layers of Tally among vsmStudio and K-Frame.

Typically LSB internal use recommends starting at 10001 for the first Red Tally.

Because of the large potential number of ME's as well as the potential to have 192 physical inputs and then a great deal of Virtual inputs and internal sources (Test, Colour BG, DPM...) it is recommended that you leave enough headroom to allow for expansion. Even if not using these sources, these GPI slots need to be reserved otherwise they can be forced to true or False states by the protocol. (It is recommended to reserve 2000 GPI's for each Tally source)

Below is the recommended GPI allocation.

10 000 – 11 999 Red Tally for Suite 1

12 000 – 13 999 Green Tally for Suite 1

14 000 – 15 999 Yellow Tally for Suite 1

20 000 – 21 999 Red Tally for Suite 2

22 000 – 23 999 Green Tally for Suite 2

23 000 – 24 999 Yellow Tally for Suite 2

*Note that these recommendations can be changed to suit the end user but remember to leave the empty positions to avoid incorrect behavior.*

*The Following Iterators can be used but naming is up to the installation engineer.*

*Red Tally on K-Frame Input {1-192} Suite (1)*  
*Green Tally on K-Frame Input {1-192} Suite (1)*  
*Yellow Tally on K-Frame Input {1-192} Suite (1)*  
*Red Tally on K-Frame Input {1-192} Suite (2)*  
*Green Tally on K-Frame Input {1-192} Suite (2)*  
*Yellow Tally on K-Frame Input {1-192} Suite (2)*

1.1.2 Every Physical output of the K-Frame is a potential Tally source and to Enable or Disable these, vsmStudio uses GPO's.

These GPO's need to be created.

Below is the recommended GPO allocation.

401 – Enable Red Tally on the K-Frame source currently selected to Output 1.

402 – 496 will be Red Tallies for outputs 2 – 96

601 – Enable Red Tally on the K-Frame source currently selected to Output 1.

602 – 696 will be Red Tallies for outputs 2 - 96

801 – Enable Red Tally on the K-Frame source currently selected to Output 1.

802 – 896 will be Red Tallies for outputs 2 - 96

501 – Enable Red Tally on the K-Frame source currently selected to Output 1.

502 – 596 will be Red Tallies for outputs 2 - 96

701 – Enable Red Tally on the K-Frame source currently selected to Output 1.

702 – 796 will be Red Tallies for outputs 2 - 96

901 – Enable Red Tally on the K-Frame source currently selected to Output 1.

902 – 996 will be Red Tallies for outputs 2 - 96

*Note that these recommendations can be changed to suit the end user.*

*The Following Iterators can be used but naming is up to the installation engineer.*

*Enable Red Tally on K-Frame out {1-96} (Suite 1)*

*Enable Green Tally on K-Frame out {1-96} (Suite 1)*

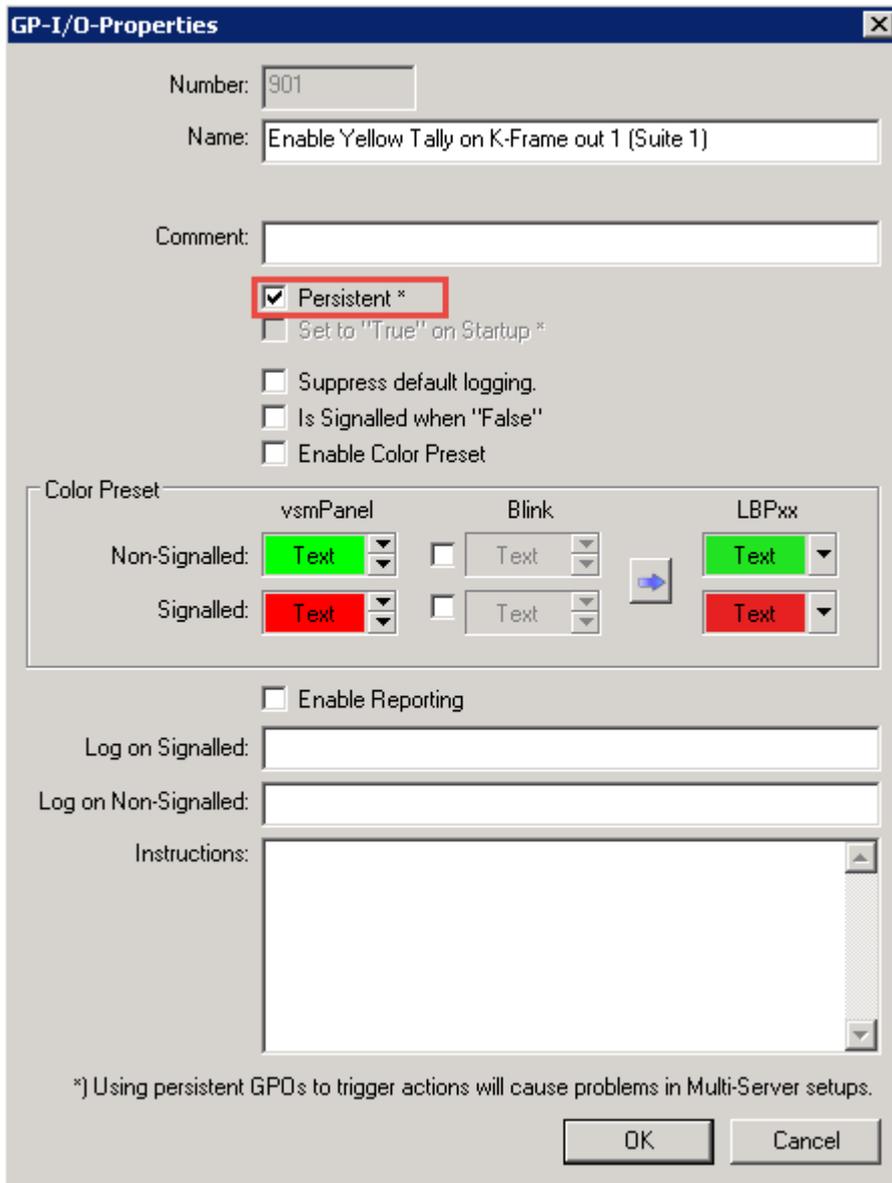
*Enable Yellow Tally on K-Frame out {1-96} (Suite 1)*

*Enable Red Tally on K-Frame out {1-96} (Suite 2)*

*Enable Green Tally on K-Frame out {1-96} (Suite 2)*

*Enable Yellow Tally on K-Frame out {1-96} (Suite 2)*

It is also recommended to set these GPO's to be Persistent (See Figure 1.1.2.1)  
 This means that GPO states are saved in the Storage folder and will resume in their previous state after a vsmStudio restart.



A Persistent GPO is indicated with a letter P in the GPO List

O-10202 Enable Red on K-Frame out 2

The parameter Set to "True" on Startup is also recommended in Static environments if the Program output is always used on the same Physical Connector. This will ensure that the GPO will always be in a true state after a restart of vsmStudio, even if it was turned off in a previous session.

A GPO with the Set to "True" on Startup is indicated by a little Square in the GPO List

O-10200 No Red Tally Enabled on K-Frame

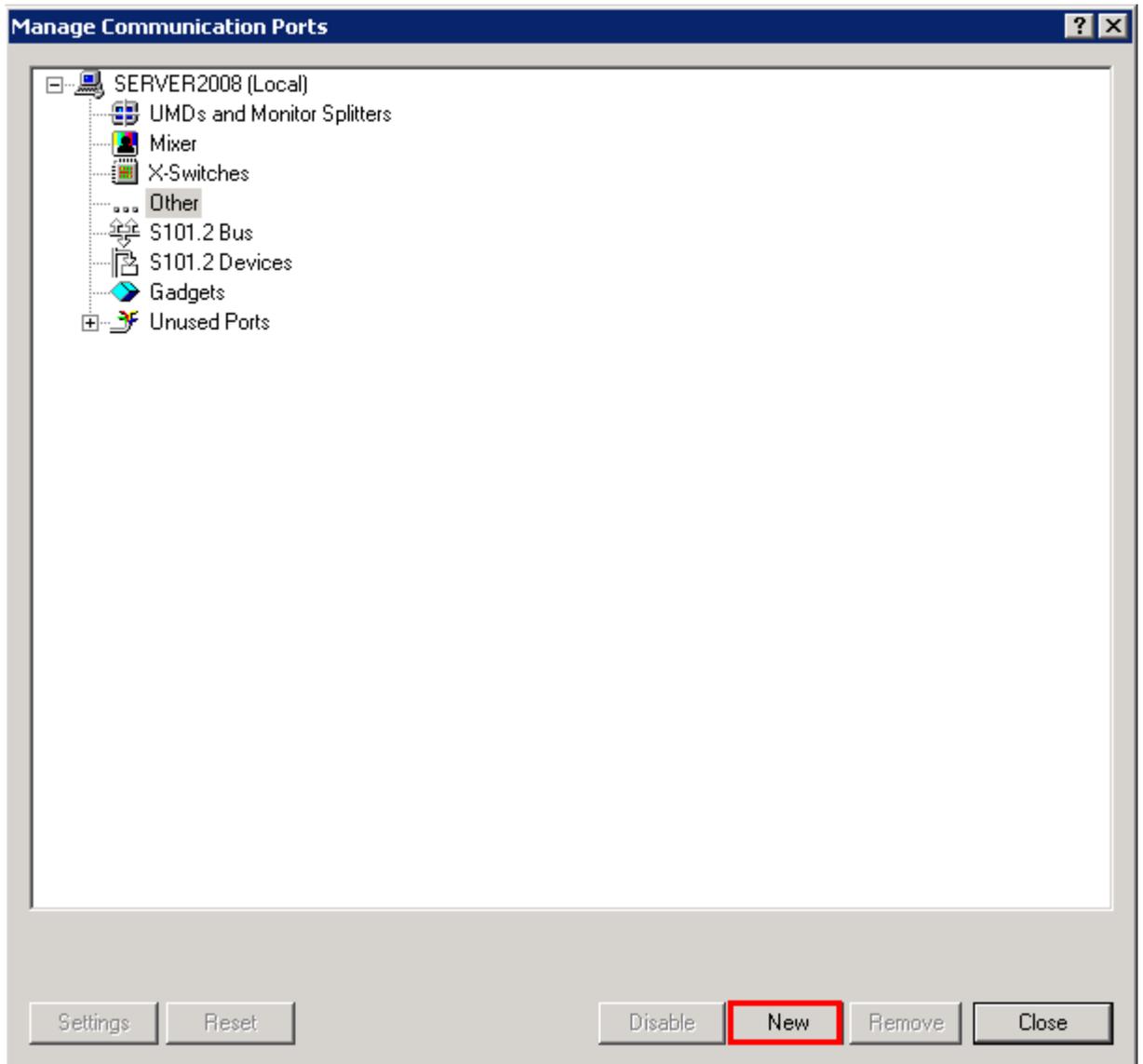
Note : These parameters are only Applicable for GPO and can't be used for GPI status.

## 1.2 Creating the connections on the vsmStudio Primary Server.

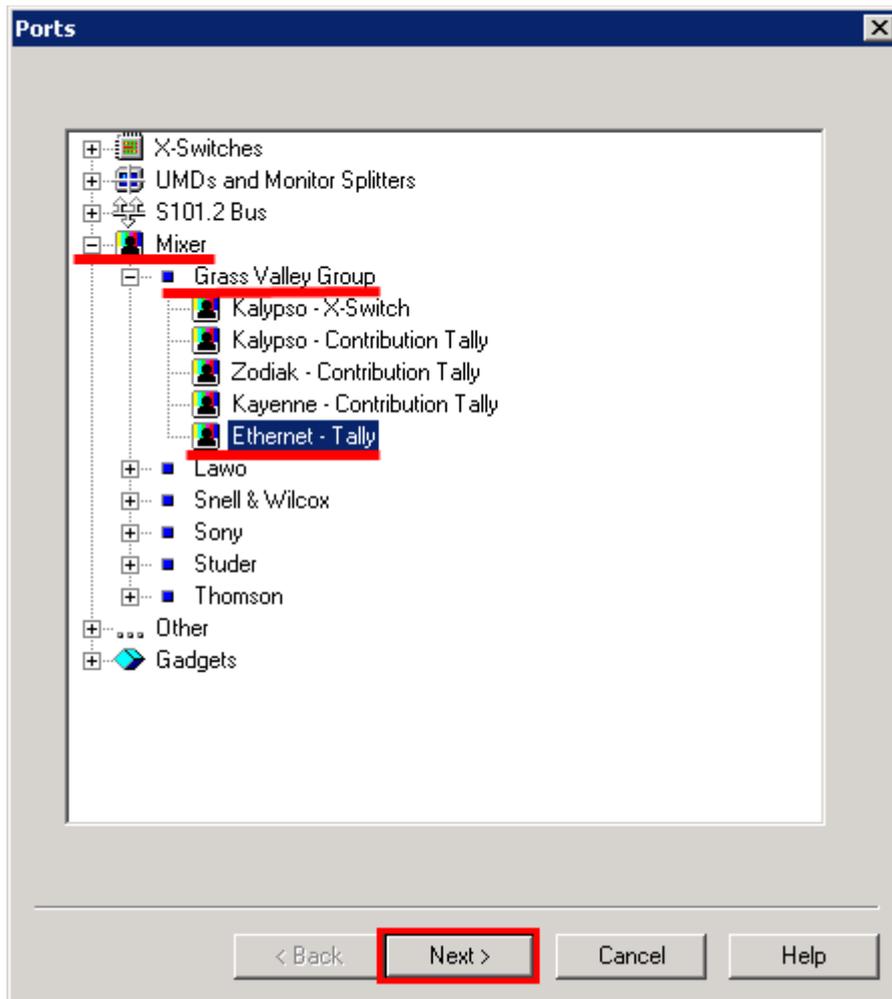
### 1.2.1 Open the Communication settings window.



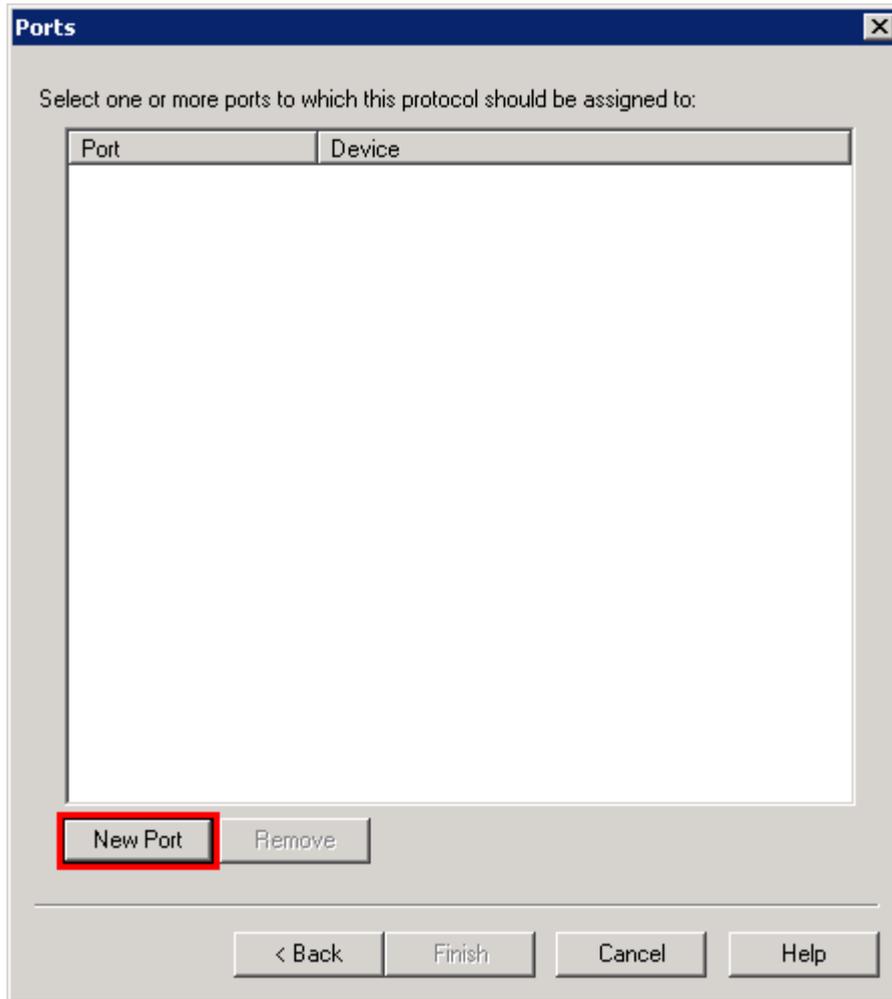
### 1.2.2 Select “New”



### 1.2.3 Expand Mixer, Grass Valley Group and select “Ethernet Tally” Click “Next.”



#### 1.2.4 Select "New Port"



#### 1.2.5 Create the TCP/IP Port. (See Figure 1.2.5.1)

1.2.5.1 Enter a description for the connected K-Frame.

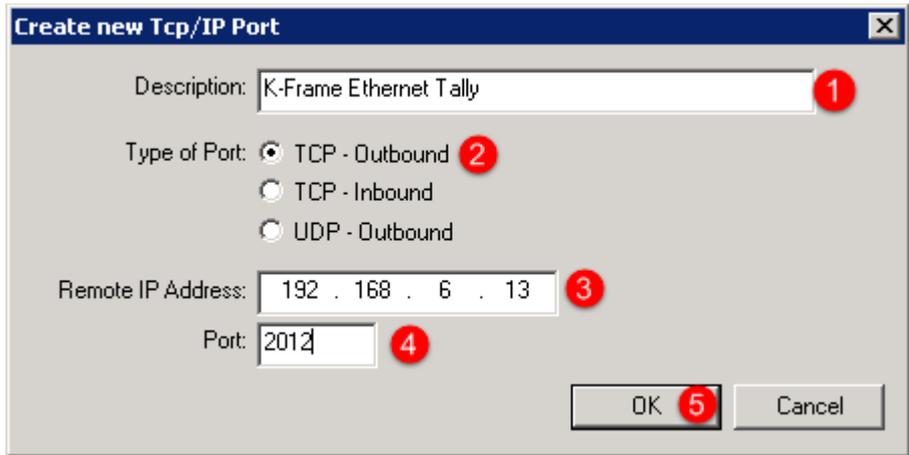
1.2.5.2 Ensure TCP – Oubound is selected (Default)

1.2.5.3 Enter the IP Adress of the K-Frame mainframe.

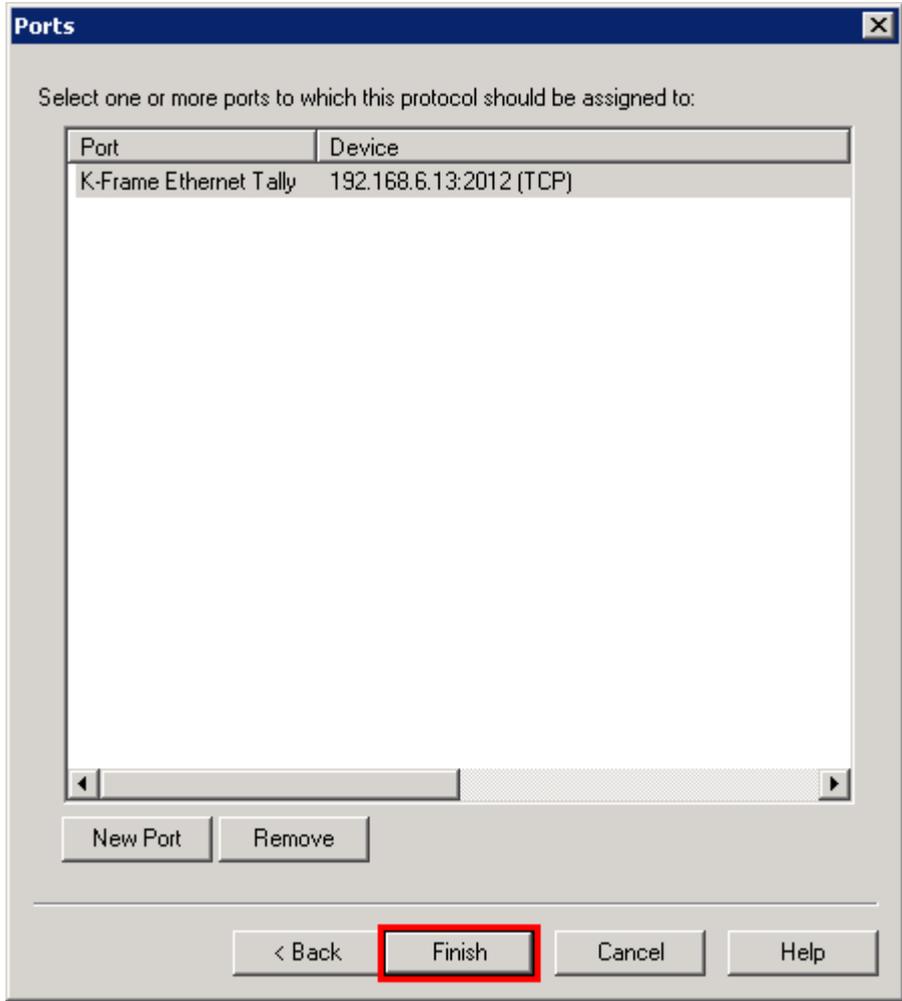
1.2.5.4 Enter the port used for the Tally connection (Manufacturer specifies port 2012)

1.2.5.5 Click "OK"

Figure 1.2.5.1



1.2.6 The newly created port will be selected by default. Click on Finish.



1.2.7 Enter the values that were specified in step 1.1.1 or the relevant values in case they are different.

Only the Base Value (First Input) needs to be specified. vsmStudio will continue counting from this base value.

(Note : Because the protocol starts counting from Zero, there will be an offset of 1 between the values entered here and the GPI / GPO used by vsmStudio)

1. The GPO specified in vsmStudio to enable Red Tally to the source selected on Output 1 if used in Suite 1.

2. The Value of the First GPI that will be set to true if Mixer input 1 is selected to any output that has been selected to be a Red Tally source in Suite 1.

3. The GPO specified in vsmStudio to enable Green tally to the source selected on Output 1 if used in Suite 1.

4. The Value of the First GPI that will be set to true if Mixer input 1 is selected to any output that has been selected to be a Green Tally source in Suite 1.

5. The GPO specified in vsmStudio to enable Yellow Tally to the source selected on Output 1 if used in Suite 1.

6. The Value of the First GPI that will be set to true if Mixer input 1 is selected to any output that has been selected to be a Yellow tally source in Suite 1.

7. The GPO specified in vsmStudio to enable Red Tally to the source selected on Output 1 if used in Suite 2.

8. The Value of the First GPI that will be set to true if Mixer input 1 is selected to any output that has been selected to be a Red Tally source in Suite 2.

9. The GPO specified in vsmStudio to enable Green tally to the source selected on Output 1 if used in Suite 2.

10. The Value of the First GPI that will be set to true if Mixer input 1 is selected to any output that has been selected to be a Green Tally source in Suite 2.

11. The GPO specified in vsmStudio to enable Yellow Tally to the source selected on Output 1 if used in Suite 2.

12. The Value of the First GPI that will be set to true if Mixer input 1 is selected to any output that has been selected to be a Yellow tally source in Suite 2.

13. Optionally, enter a comment for this connection. This comment will also be used to identify the connection in the list. (See X.X.X)

14. Click on OK when done.

1.2.8 An Orange Dot indicates that there is a K-Frame mainframe already connected but not yet configured. (Figure 1.2.8.1)

A correctly configured K-Frame will be indicated by a Green Dot (Figure 1.2.8.2)

No connection will be indicated by alternating Red and White dots. (Figure 1.2.8.3)

Figure 1.2.8.1 (Connected but not configured correctly)

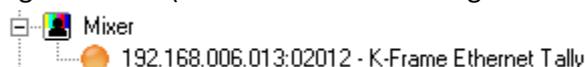


Figure 1.2.8.2 (Valid communication)

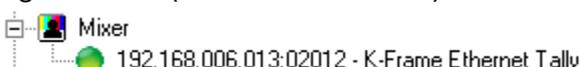
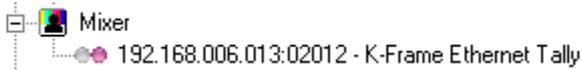
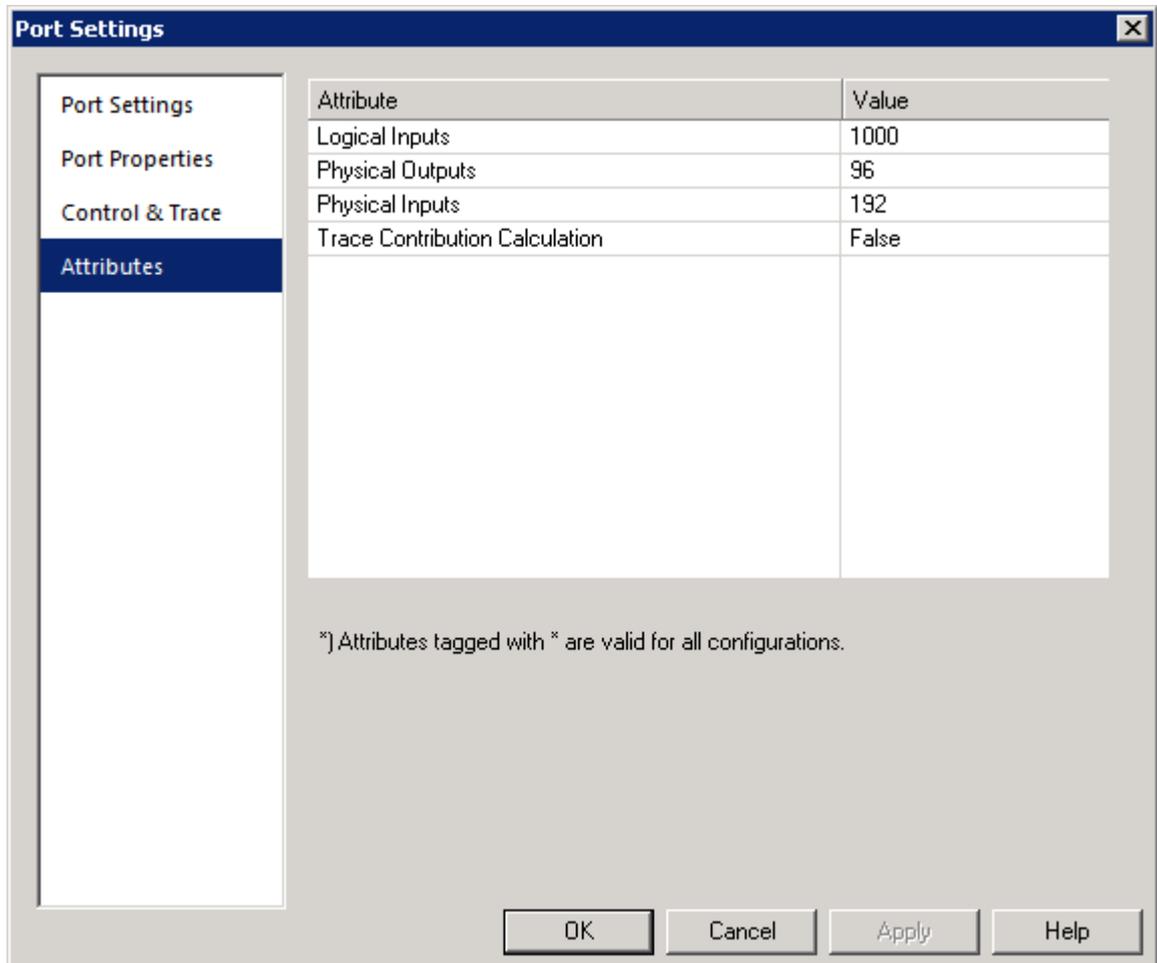


Figure 1.2.8.3 (No Communication)



1.2.9 Double Click on the connection to open the “Port Settings” Window



- 1.2.9.1 Enter the amount of Logical inputs in the system (Default = 1000)
- 1.2.9.2 Enter the amount of Physical outputs to the system (Default = 100)
- 1.2.9.3 Enter the amount of Physical Inputs to the system (Default = 200)
- 1.2.9.4 Ensure that the value for “Trace Contribution Calculation” is set to False unless you are debugging the connection.

### 1.3 Configuring the K-Frame Mixer (Switcher) to connect to vsmStudio through Ethernet Tally.

#### 1.3.1 In the K-Frame Panel Software, select (See Figure 1.3.1.1)

1. Eng Setup

2. Ports & Devices

3. Tally Ports

4. Ethernet Tally 1

Enter the IP Address of the Primary vsmStudio Server here

5. Ethernet Tally 2

Enter the IP address of the Second vsmStudio Server here

6. Ethernet Tally 3

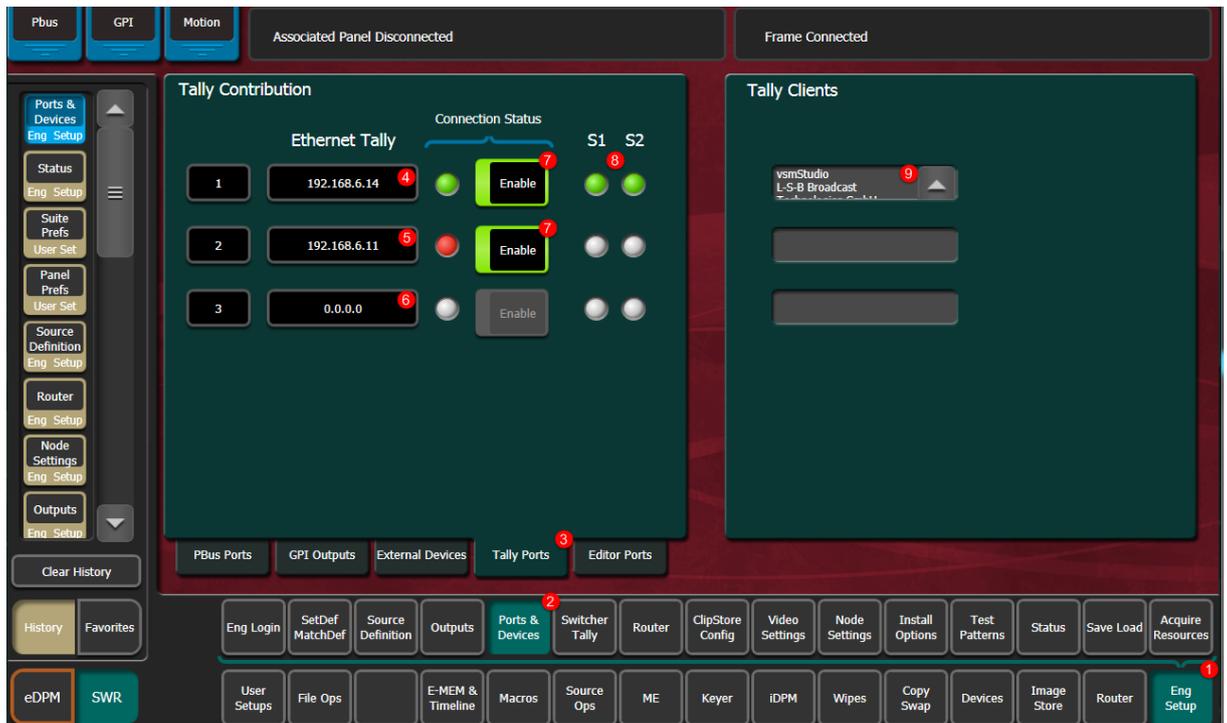
In case of a three server Cluster, you can enter the IP address of the third server here (not demonstrated in this manual)

7. Enable all relevant Connections.

8. S1 & S2 LED's will light up, indicating Valid Communication to Suite 1 and Suite 2..

9. The Authentication Identifier will be displayed in the Tally Clients Window.

Figure 1.3.1.1



#### 1.4 Setting up the vsmStudio Second Server

- 1.4.1 Repeat steps 1.2.1 to 1.2.6 in the second Server
- 1.4.2 Synchronize Servers
- 1.4.3 Repeat in Third Server (if Applicable)

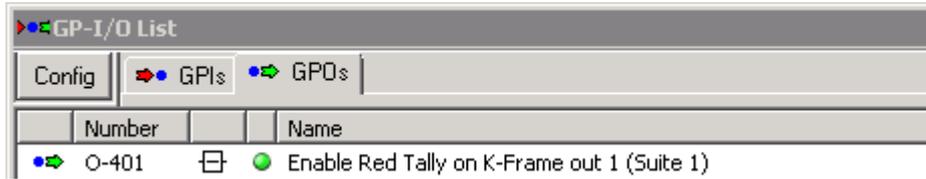
(Note : One K-Frame supports a maximum of three Tally Clients)

- 1.4.4 Verify connections in both Servers as well as in K-Frame Software

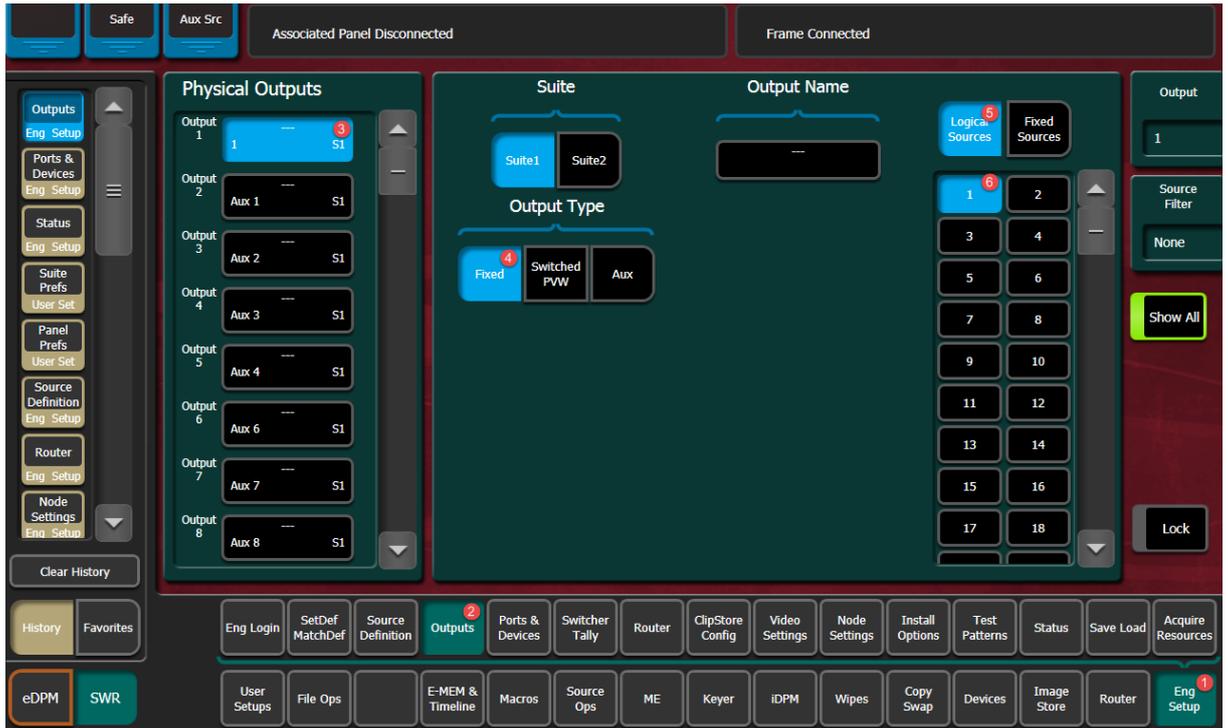


### 1.5 Testing the Tally Communications.

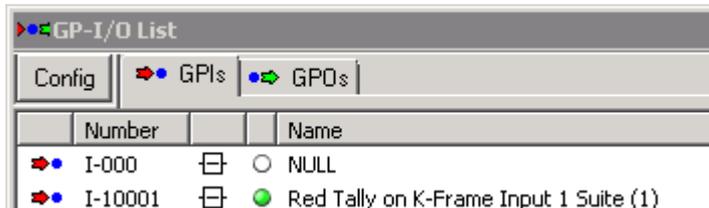
1.5.1 In vsmStudio, set the Value of GPO 401 (Created in step 1.1.1) or other GPO to Enable Red Tally on Suite 1 Output 1 to True.



1.5.2 In the K-Frame menu, Select Input 1 to Output 1.



1.5.3 GPO 10001 should now have a value of "True"



1.5.4 Repeat the above steps to test Red, Green and Yellow Tallies for Suite 1 and Suite 2.

## 1.6 Configuring Tally for K-Frame internal resources.

Various internal resources are also Tally Contributors. Examples are ME1, ME2, Internal Test generators, Internal Still stores and these will also be contributing Tally information to GPI's higher than the Physical inputs.

The Standard fixed source tallies can be derived by Adding 900 to the base input for every layer of Tally.

Eg. (10001 + 900 = 10901) for Red Tally from internal resources when used in Suite 1

 I-10901  Red Tally (int.) M1 A (Suite 1)

*The Iterator below can be copied to assist in creating these GPI's easily.*

{M1 A,M1 B,M1 C,M1 D,M1 pA,M1 pC,M1 pM,M2 A,M2 B,M2 C,M2 D,M2 pA,M2 pC,M2 pM,M3 A,M3 B,M3 C,M3 D,M3 pA,M3 pC,M3 pM,M4 A,M4 B,M4 C,M4 D,M4 pA,M4 pC,M4 pM,Pg A,Pg B,Pg C,Pg D,Pg pA,Pg pC,Pg pM,eDA,eDAk,eDC,eDCk,Blk,Wht,Blk Key,Test 1,Test 2,Bg 1,Bg 2,IS 1A,IS 1B,IS 2A,IS 2B,IS 3A,IS 3B,IS 4A,IS 4B,IS 5A,IS 5B,IS 6A,IS 6B,IS 7A,IS 7B,IS 8A,IS 8B,IS 9A,IS 9B,IS 10A,IS 10B,TBD 1,TBD 2,TBD 3,TBD 4,TBD 5,TBD 6,TBD 7,TBD 8,TBD 9,TBD 10,TBD 11,TBD 12,TBD 13,TBD 14,TBD 15,TBD 16,TBD 17,TBD 18,TBD 19,TBD 20,TBD 21,TBD 22,TBD 23,TBD 24,TBD 25,TBD 26,TBD 27,TBD 28,TBD 29,TBD 30,TBD 31,TBD 32,TBD 33,TBD 34,TBD 35,TBD 36,TBD A,TBD B,TBD C,TBD D,TBD pA,TBD pC,TBD pM}

**This concludes the Tally Connection section.**

## 2. Aux bus routing through the S7000 protocol

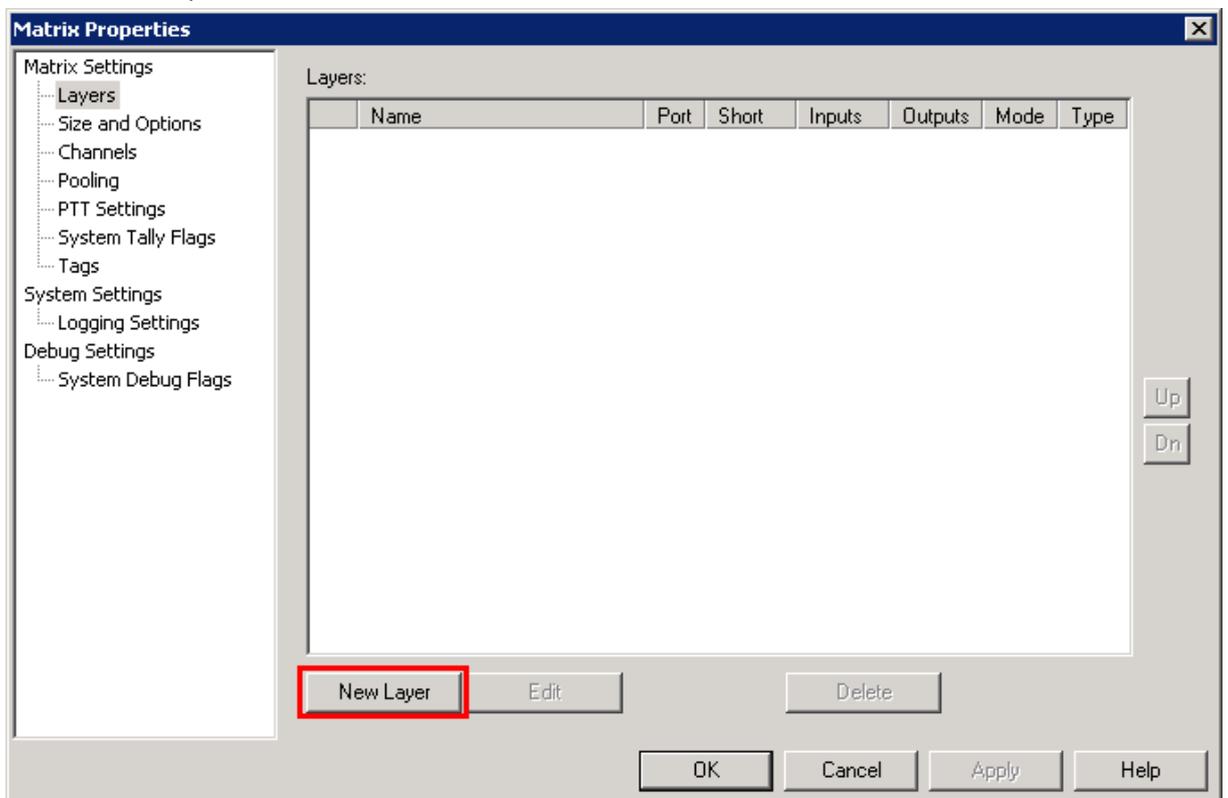
Note : In K-Frame as well as Kayenne Classic, Aux bus routing is allowed through the GVG SMS7000 Protocol. This routing supports the internal Aux busses and not the BNC outputs of the Mainframe.

2.1 Firstly we need to create a Layer in vsmStudio which will resemble the K-Frame eg. K-Frame Aux Bus.

### 2.1.1 Click on the Settings icon



### 2.1.2 Select "New Layer"



2.1.3 Enter the Layer Properties. (See Figure 2.1.3.1)

2.1.3.1 The name of the Connection eg. K-Frame Aux

2.1.3.2 An optional Comment

2.1.3.3 A short name (Recommended)

2.1.3.4 The amount of Inputs to the K-Frame

Note : If you wish to use internal Fixed Sources, Enter a Value of 1000 here.

2.1.3.5 The number of outputs (used Aux Busses)

2.1.3.6 Click OK.

Figure 2.1.3.1

**Layer Properties** [?] [X]

Name:  1

Switch behavior:

Comment:  2

Short:  3

Inputs:  4

Outputs:  5

Type:

Show as Tab in Master Matrix View

Virtual Layer

Automation Entry Point

Enable AutoFade Flag

Suppress pseudo device rules for inbound connects

Synchronize across Zone-Servers

No 3rd Party Control

6

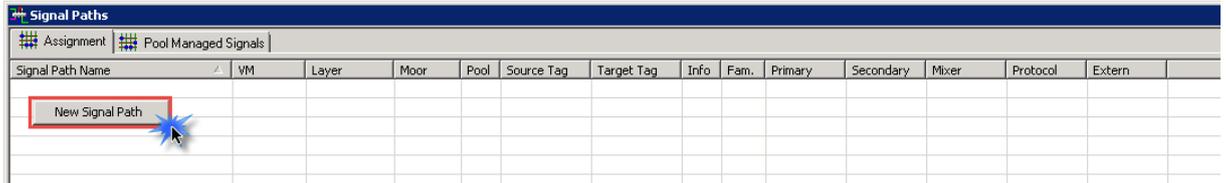
## 2.2 Create Signal paths for K-Frame Auxes.

These are destinations on the K-Frame Layer.

### 2.2.1 Open the signal paths list



### 2.2.2 Right Click anywhere in the Signal Path list and click on New Signal Path.



### 2.2.3 Add the information needed for these signal paths (See Figure 2.2.3.1)

2.2.3.1 Add a description. Using an iterator will create multiple (censecutive) signal paths simultaneously.

2.2.3.2 Optionally you can add a location, like the rack that houses the mainframe.

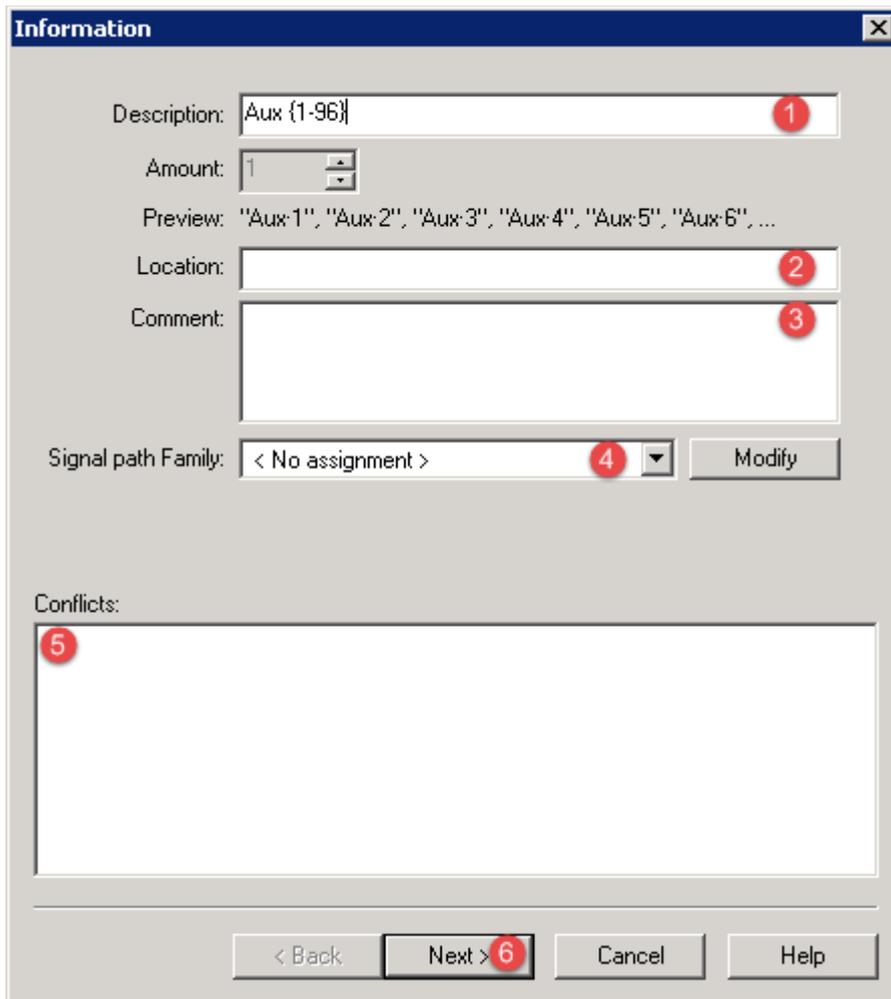
2.2.3.3 Optionally add a comment eg. Only active if enabled in K-Frame.

2.2.3.4 Optionally assign a signal path family.

2.2.3.5 Any conflicts (names already in use) will automatically be displayed here.

2.2.3.6 Click Next.

Figure 2.2.3.1

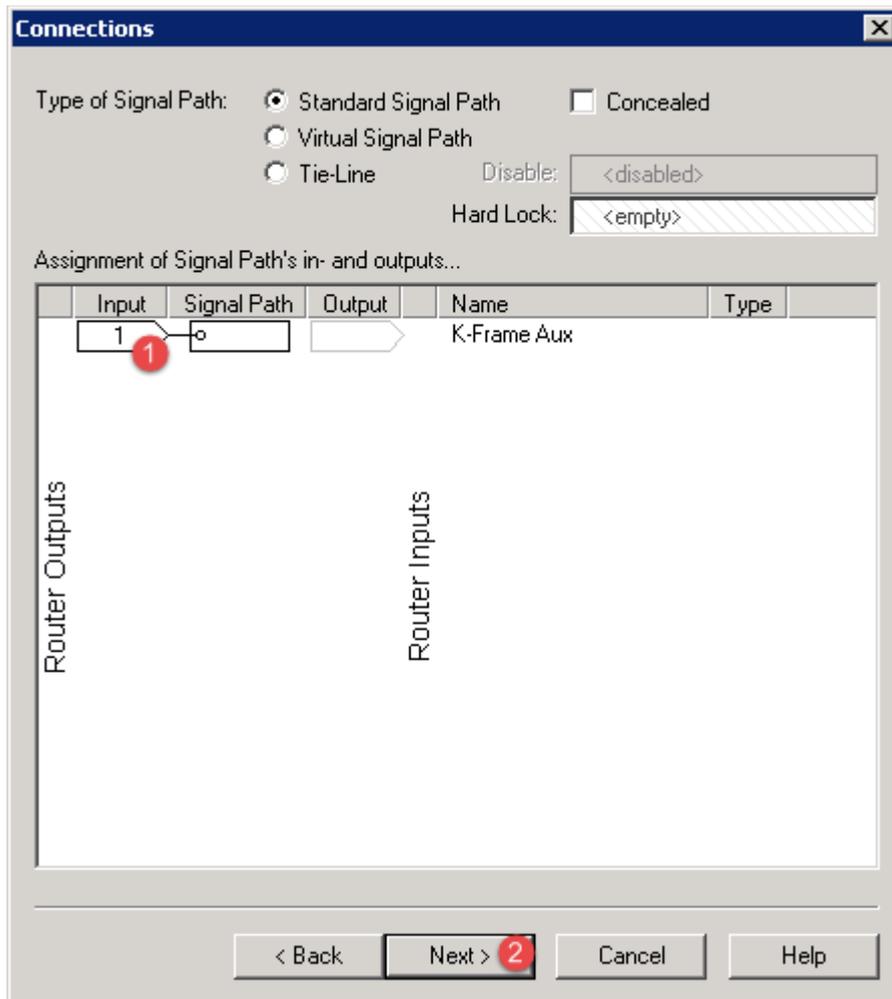


2.2.4 Select the connections. (See figure 2.2.4.1)

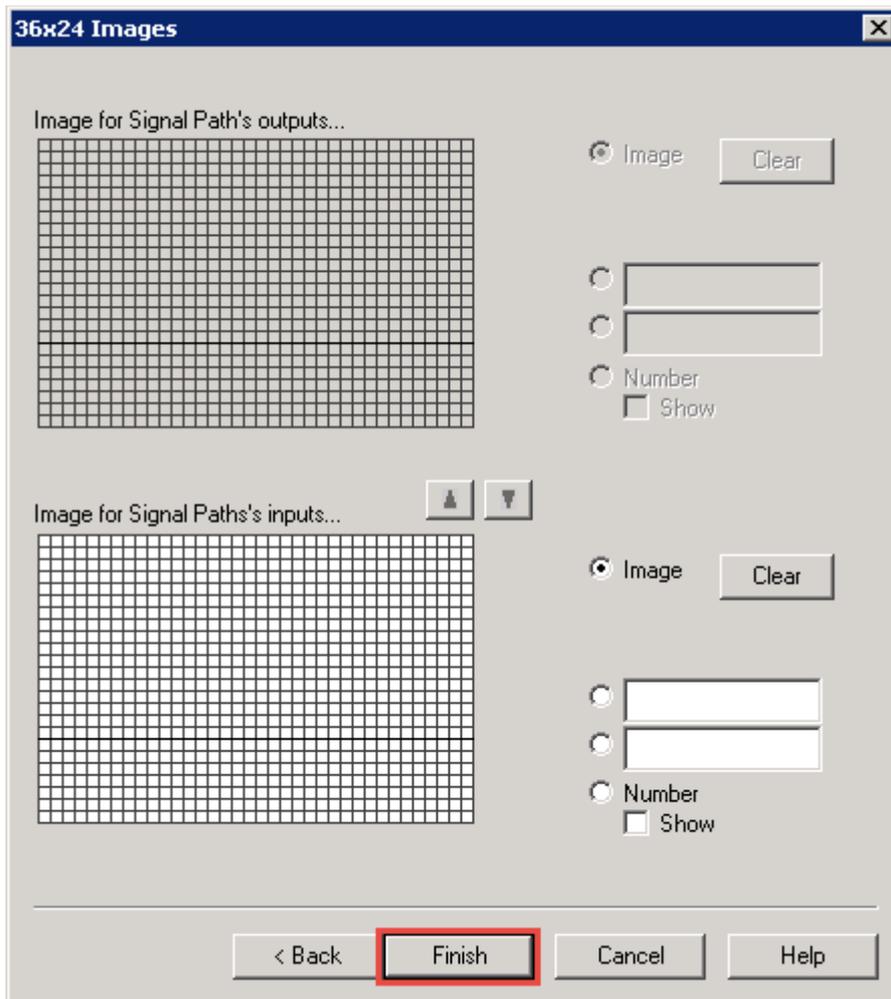
2.2.4.1 Click on the arrow that identifies the relevant router output. A Dropdown list will appear and if you used an iterator, the correct amount of connections will automatically be selected.

2.2.4.2 Click on Next (No Further handling is needed.)

Figure 2.2.4.1



- 2.2.5 Continue clicking next until you have a Finish Button.  
Select "Finish"



- 2.2.6 Repeat the steps above but this time Create the Sources to the K-Frame. (See figure 2.2.6.1)
- 2.2.6.1 Add the description for K-Frame inputs (These can be changed at a later stage)  
Note : If you wish to use internal sources, add 1000 sources)
- 2.2.6.2 Optionally add a Location.
- 2.2.6.3 Optionall add a Comment.
- 2.2.6.4 Optionally select a Signal path Family
- 2.2.6.5 Any conflicts (names already in use) will automatically be displayed here.
- 2.2.6.6 Click Next.

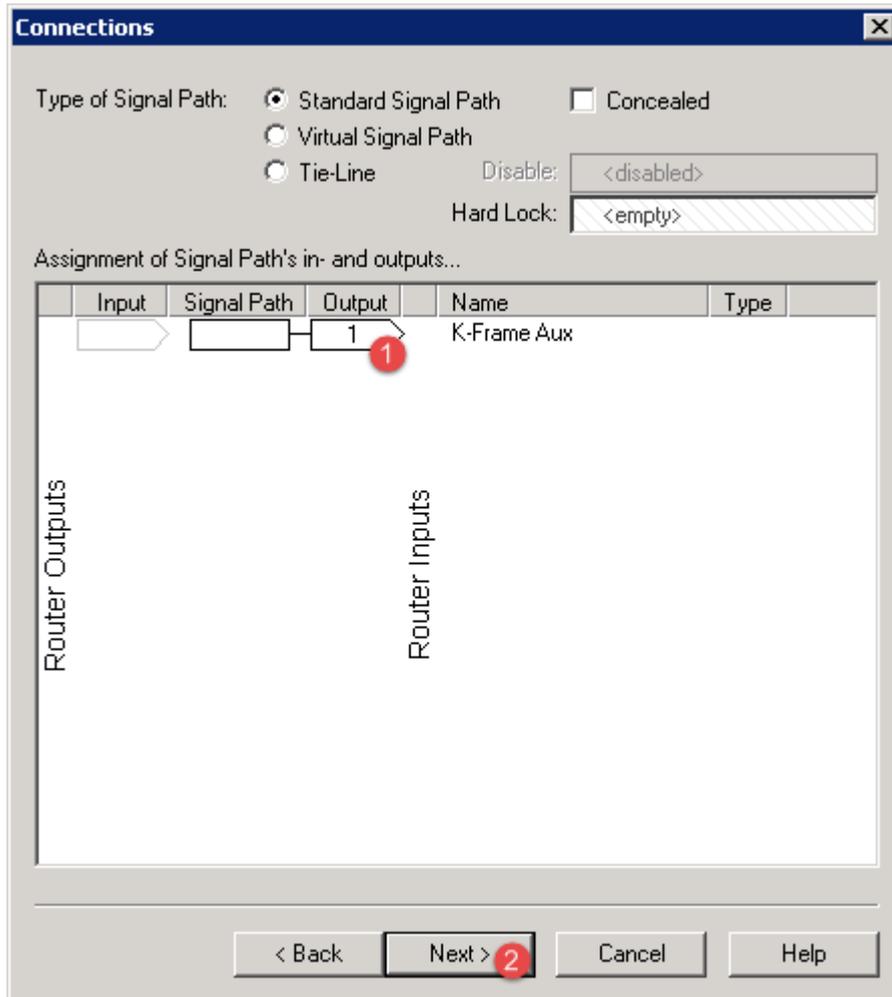
Figure 2.2.6.1

The image shows a software dialog box titled "Information" with a close button (X) in the top right corner. The dialog contains several input fields and buttons:

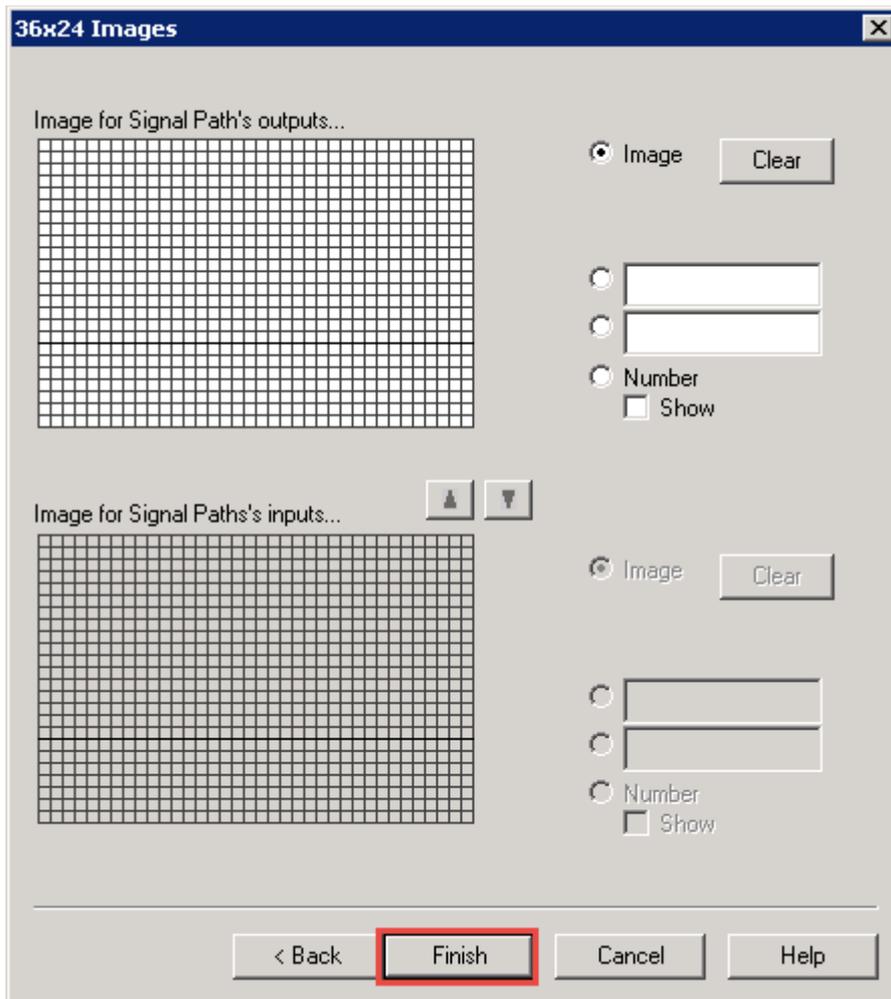
- Description:** A text box containing "K-Frame input {1-1000}" with a red callout "1" at its right end.
- Amount:** A spinner box showing the value "1".
- Preview:** A text box containing the string "K-Frame input-1", "K-Frame input-2", "K-Frame input-3", ...".
- Location:** An empty text box with a red callout "2" at its right end.
- Comment:** A large empty text area with a red callout "3" at its right end.
- Signal path Family:** A dropdown menu showing "< No assignment >" with a red callout "4" at its right end. To its right is a "Modify" button.
- Conflicts:** A large empty text area with a red callout "5" at its top left corner.
- Navigation:** At the bottom, there are four buttons: "< Back", "Next >" (with a red callout "6" at its right end), "Cancel", and "Help".

2.2.6.7 Click on the arrow that identifies the relevant router input. A Dropdown list will appear and if you used an iterator, the correct amount of connections will automatically be selected.

2.2.6.8 Click on Next (No Further handling is needed.)



2.2.6.9 Continue clicking next until you have a Finish Button.  
Select "Finish"

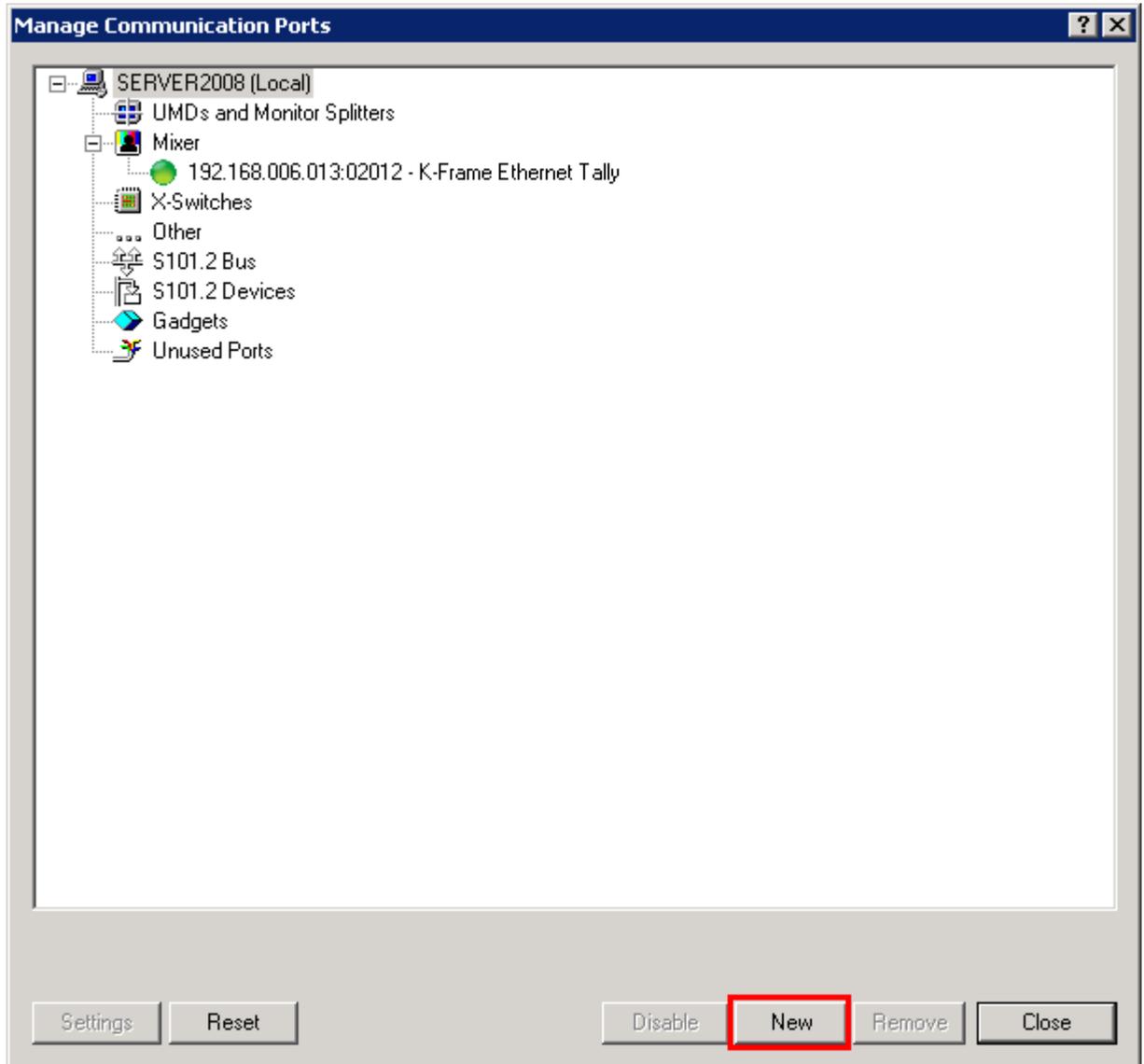


2.3 Create a connection Between K-Frame and vsmStudio for Aux Bus Routing.

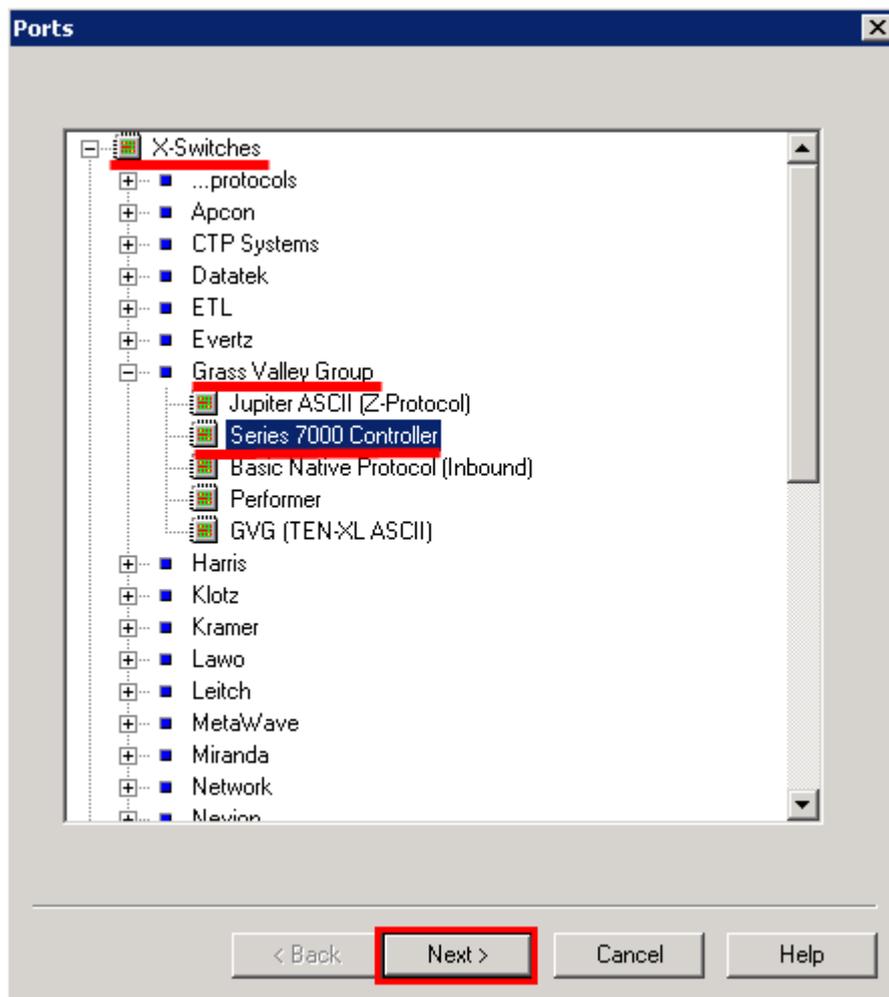
2.3.1 Open the “Manage Communications” Window



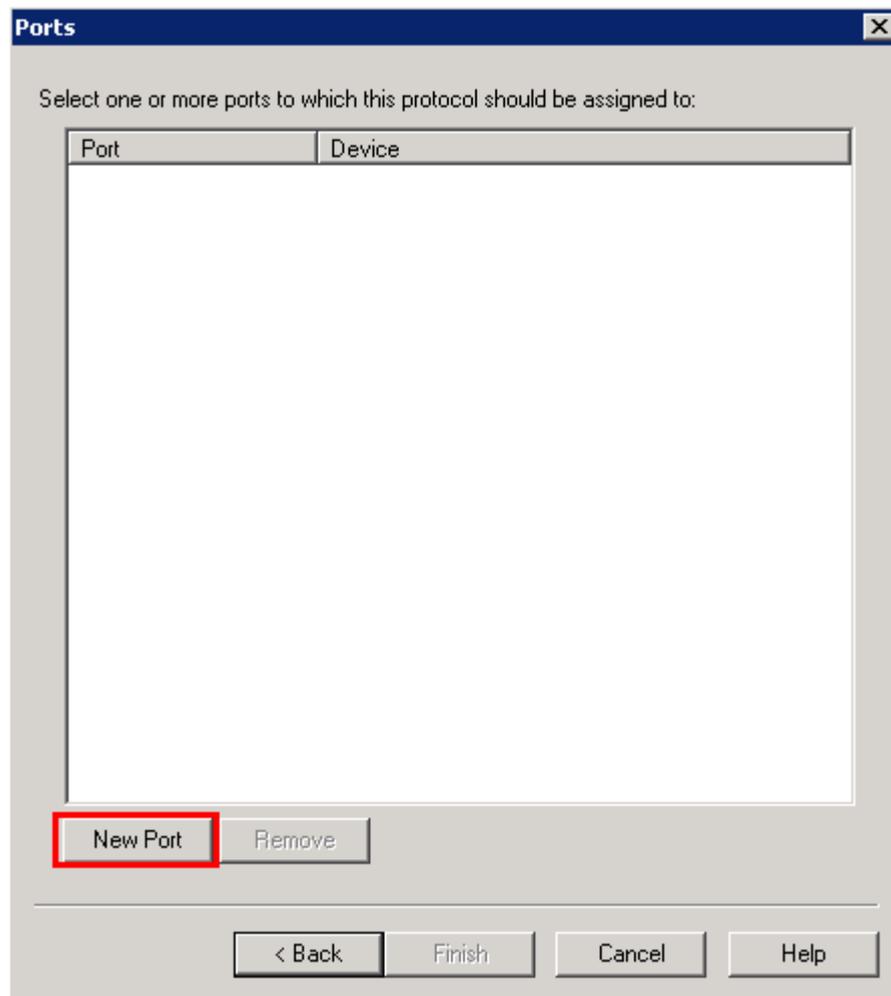
### 2.3.2 Select New



2.3.3 Expand X-Switches, Grass Valley Group, Series 7000 Controller.  
Click "Next"

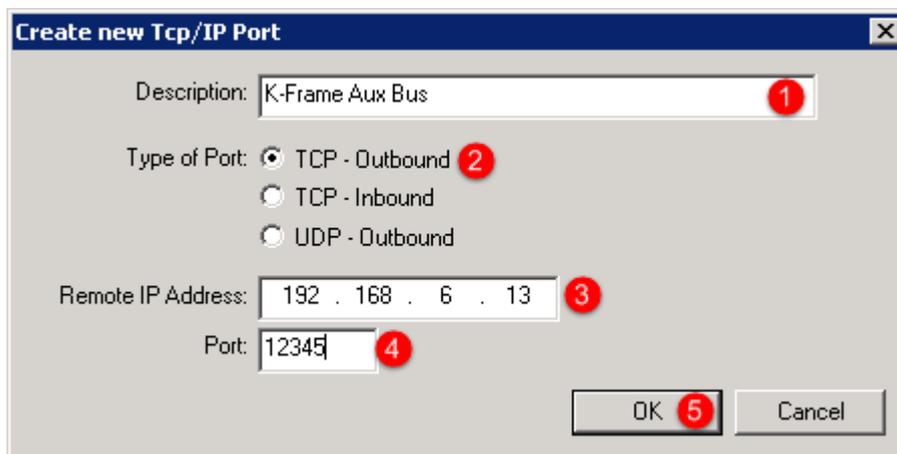


### 2.3.4 Select "New Port"

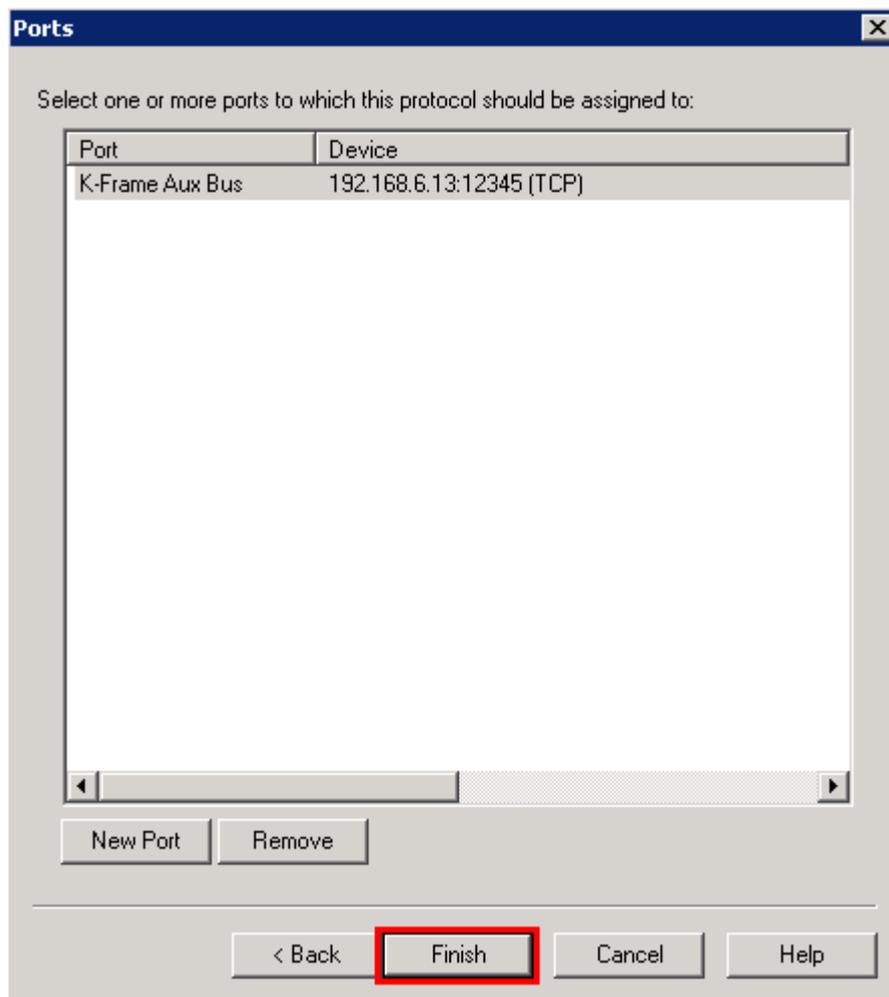


### 2.3.5 Create the TCP/IP Port. (See Figure 2.3.5.1)

- 2.3.5.1 Enter the Description for the Connection.
- 2.3.5.2 Select the Type of port to TCP – Outbound (Default)
- 2.3.5.3 Enter the IP Address of the K-Frame mainframe.
- 2.3.5.4 Enter the Port number. 12345 Specified by Manufacturer.
- 2.3.5.5 Click "OK"



- 2.3.6 The newly created port will be selected by default.  
Click on Finish.



2.3.7 Enter the Port Properties

- 2.3.7.1 Enter the name of the port in the Comment field.

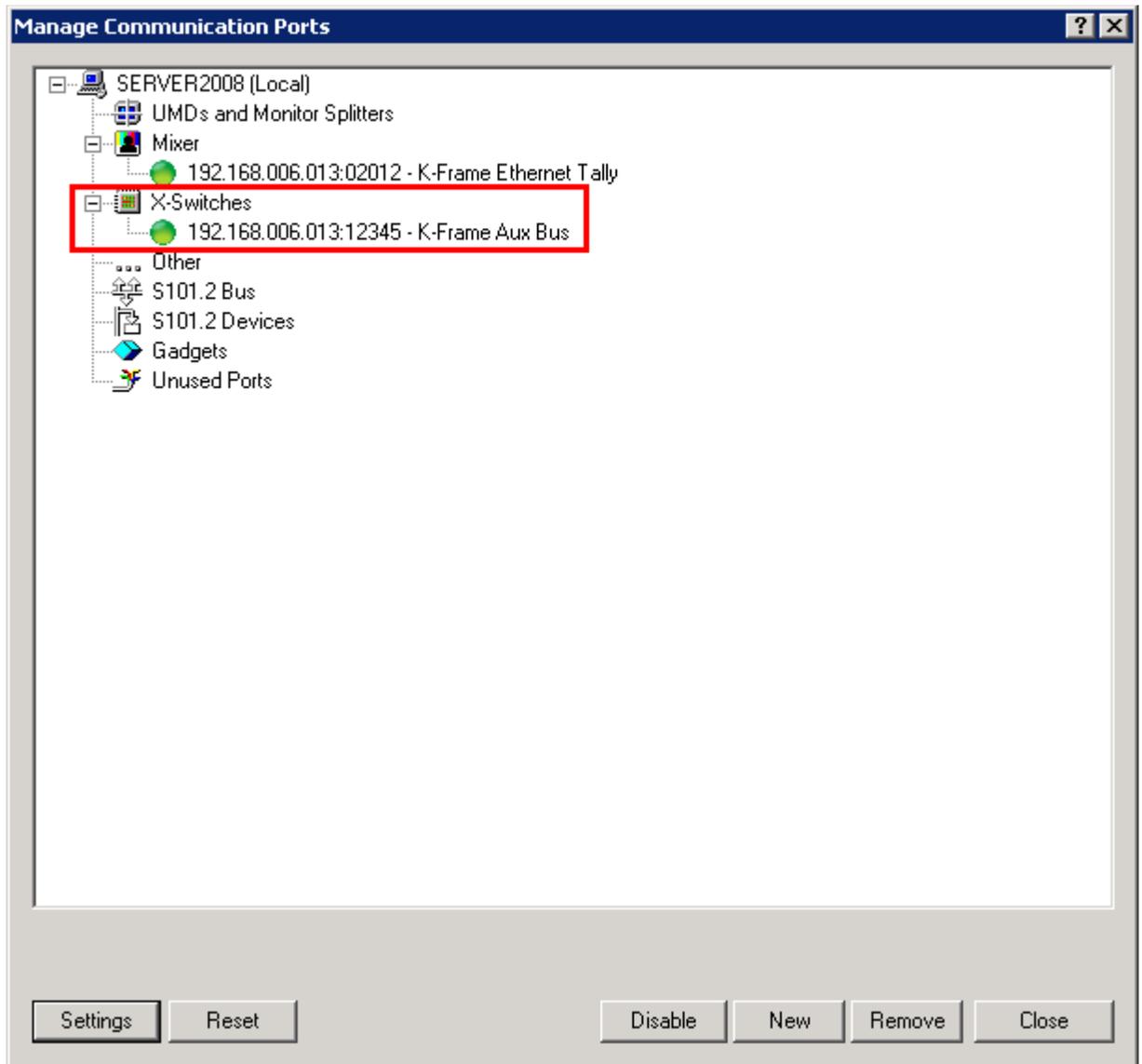
(This is optional but it will assist in the identification of the port later)

- 2.3.7.2 Select the relevant vsmStudio layer that will be used to switch the Aux busses on the K-Frame. This will be layer 1 and the value can be changed by double clicking on Layer 1 or selecting Modify on the right.

- 2.3.7.3 Click "OK"

- 2.3.8 A Green Dot in the Manage Communication Ports Window indicates a valid connection.

Note : If the K-Frame has not been configured yet, you will occasionally lose connection.



2.3.9 Double click on the Connections and in the Attributes tab, Ensure that the settings are correct.

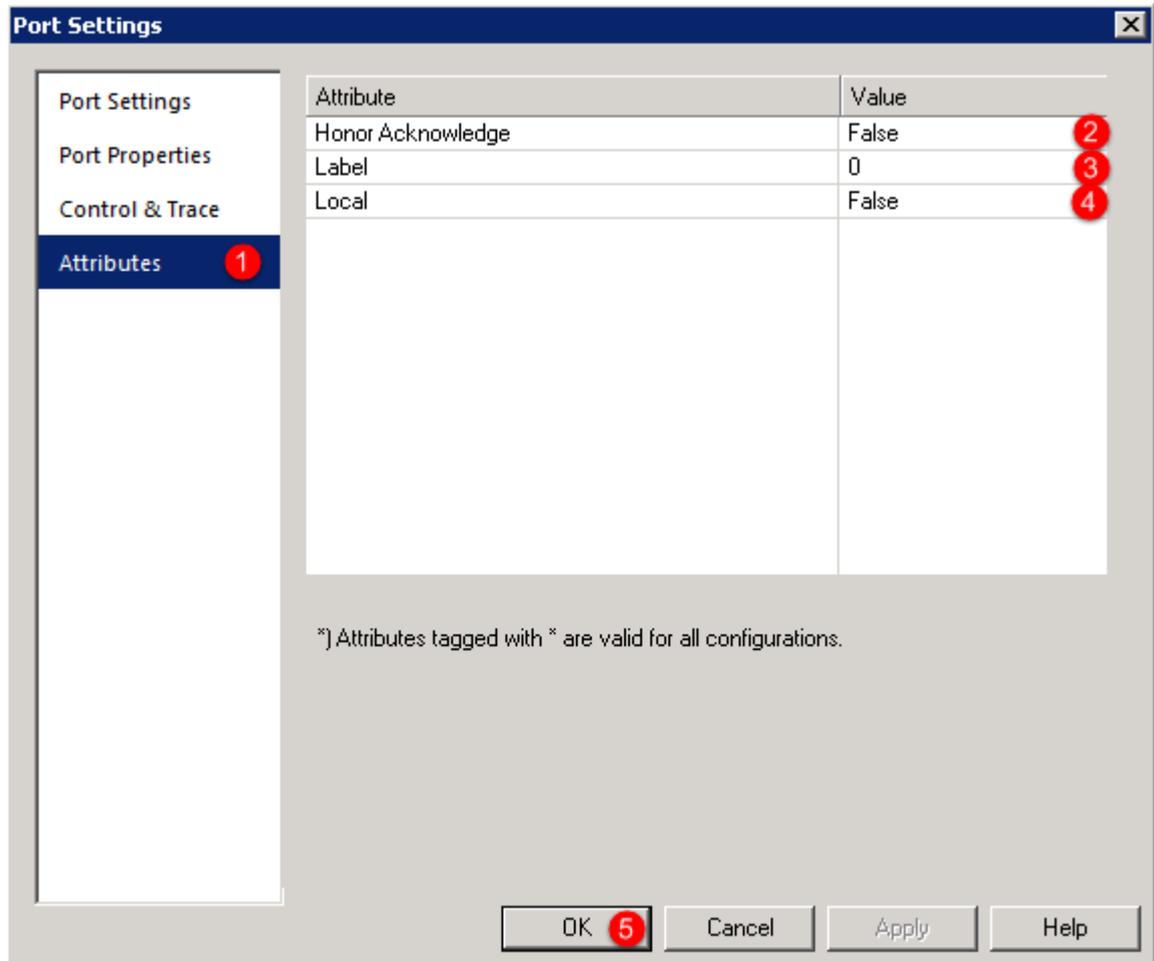
2.3.9.1 Select "Attributes"

2.3.9.2 Ensure "Honor Acknowledge" is set to False (Default state)

2.3.9.3 Label Layer is Zero, not used for Aux Bus

2.3.9.4 Local is False

### 2.3.9.5 Click "OK"



### 2.3.10 Set up the K-Frame to allow Aux Bus control. (See Figure 2.3.10.1)

Note : Only Aux busses that have been enabled will allow control from vsmStudio

2.3.10.1 Select Eng Setup.

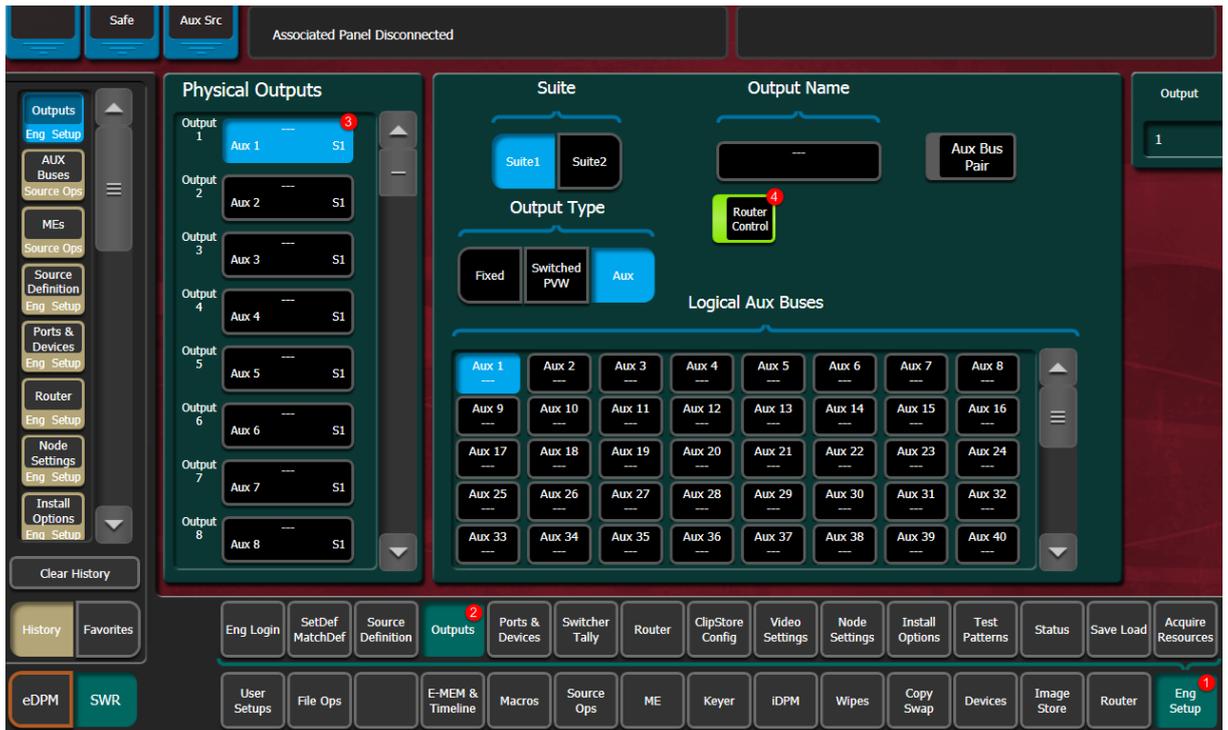
2.3.10.2 Select Outputs.

2.3.10.3 Find the Aux Bus that you wish to control in the Physical outputs list.

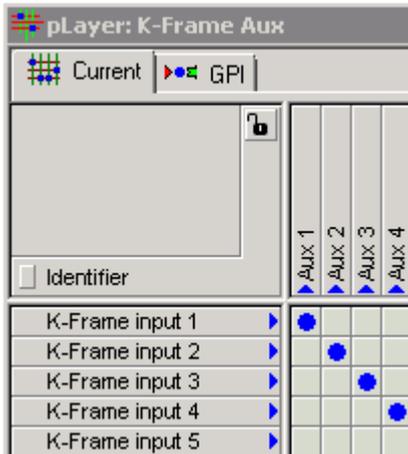
Note, an Aux Bus will still be controlled, even if it is not routed to a Physical output.

2.3.10.4 Ensure that Router Control is enabled for this Aux Bus.

Figure 2.3.10.1



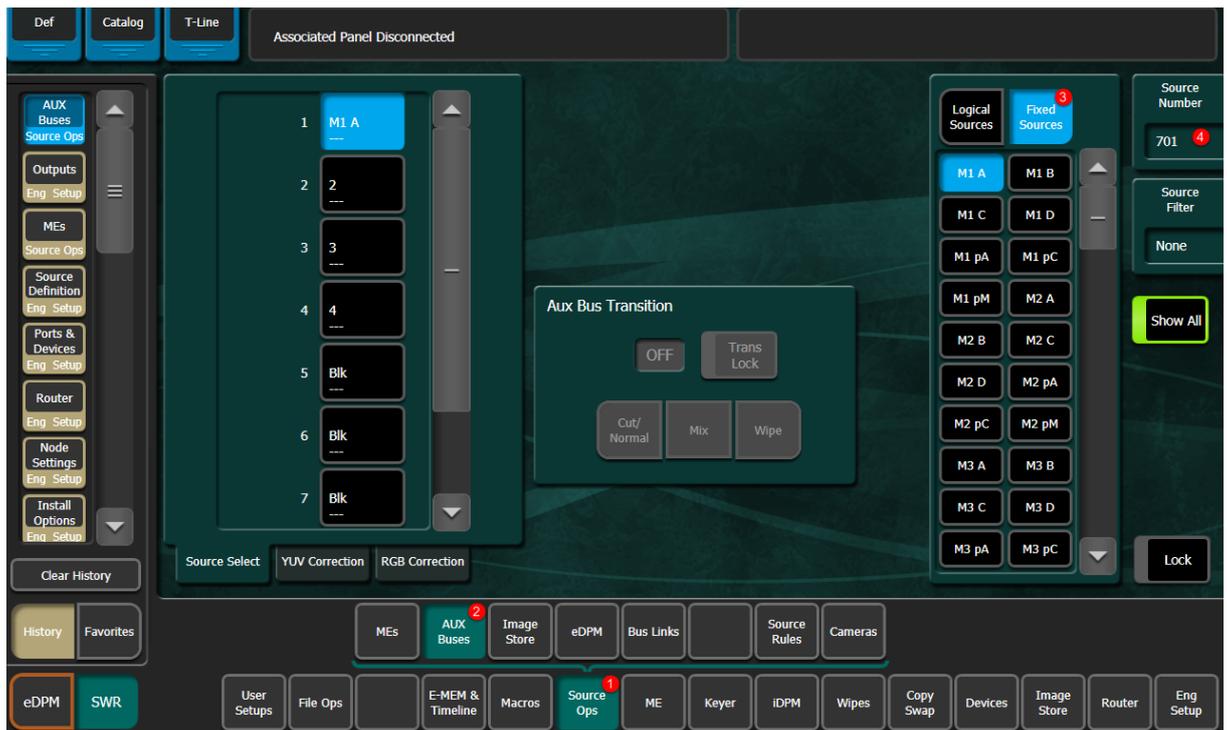
2.3.11 You are now able to Route all enabled Aux Busses from vsmStudio.



2.3.12 If you wish to use K-Frame internal sources, these can be identified by selecting them in K-Frame and looking at the selected input. (See Figure 2.3.12.1)

- 2.3.12.1 Select Source Ops
- 2.3.12.2 Select AUX Busses
- 2.3.12.3 Select Fixed Sources
- 2.3.12.4 Source number is displayed.

Figure 2.3.12.1



2.4 The Fixed Sources start counting from 701 upwards and the Iterator below can help to easily create all these Signal paths.

{M1 A,M1 B,M1 C,M1 D,M1 pA,M1 pC,M1 pM,M2 A,M2 B,M2 C,M2 D,M2 pA,M2 pC,M2 pM,M3 A,M3 B,M3 C,M3 D,M3 pA,M3 pC,M3 pM,M4 A,M4 B,M4 C,M4 D,M4 pA,M4 pC,M4 pM,Pg A,Pg B,Pg C,Pg D,Pg pA,Pg pC,Pg pM,eDA,eDAk,eDC,eDCk,Blk,Wht,Blk Key,Test 1,Test 2,Bg 1,Bg 2,IS 1A,IS 1B,IS 2A,IS 2B,IS 3A,IS 3B,IS 4A,IS 4B,IS 5A,IS 5B,IS 6A,IS 6B,IS 7A,IS 7B,IS 8A,IS 8B,IS 9A,IS 9B,IS 10A,IS 10B,TBD 1,TBD 2,TBD 3,TBD 4,TBD 5,TBD 6,TBD 7,TBD 8,TBD 9,TBD 10,TBD 11,TBD 12,TBD 13,TBD 14,TBD 15,TBD 16,TBD 17,TBD 18,TBD 19,TBD 20,TBD 21,TBD 22,TBD 23,TBD 24,TBD 25,TBD 26,TBD 27,TBD 28,TBD 29,TBD 30,TBD 31,TBD 32,TBD 33,TBD 34,TBD 35,TBD 36,TBD A,TBD B,TBD C,TBD D,TBD pA,TBD pC,TBD pM}

Note that Created Logical sources can be switched too.

**This concludes the Aux Bus Connection section.**

3. Label transferring from vsmStudio to the K-Frame through the S7000 protocol.

Note : Labels can be transferred from vsmStudio to a K-Frame or Kayenne Classic with the SMS7000 protocol. There are however a few limitations both on the vsmStudio side as well as on the GVG side.

A Video Router needs to Exist with Physical, Virtual or both sources available.

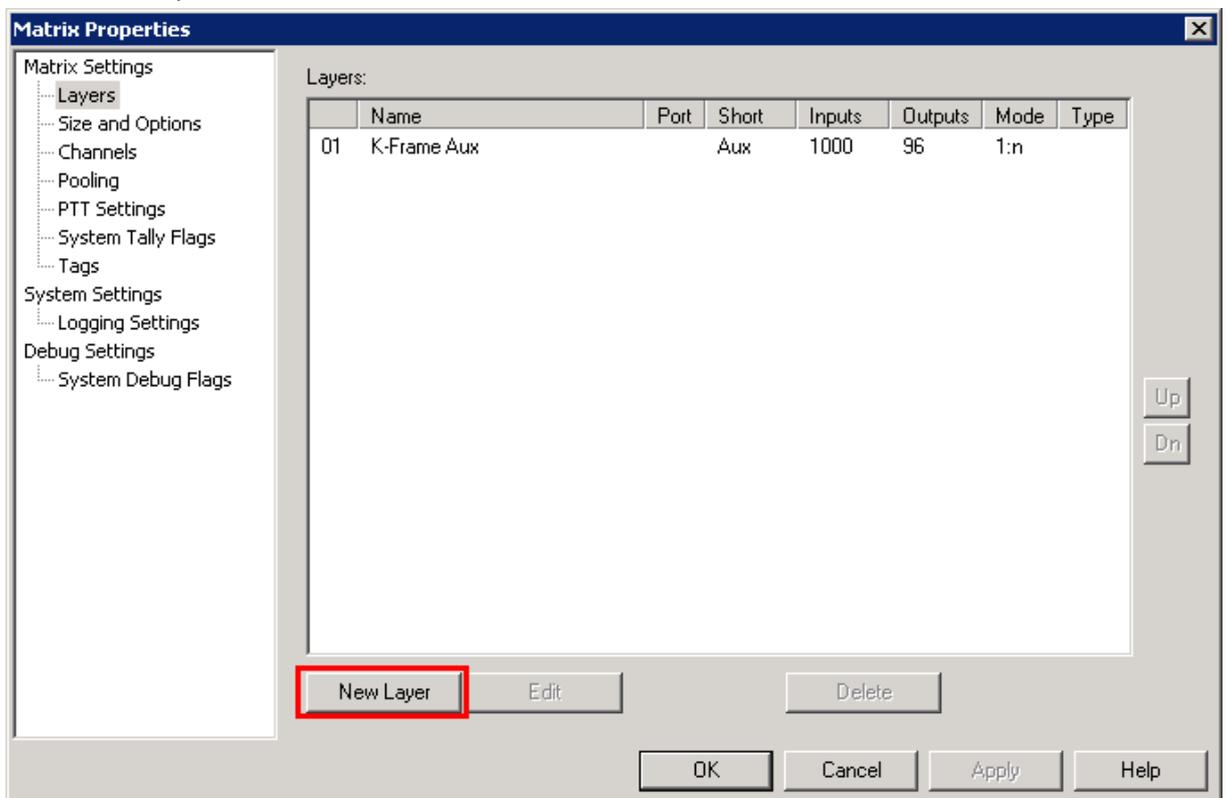
These source will forward their labels to the K-Frame when routed.

3.1 Firstly configure vsmStudio to create labels to be sent to the K-Frame.

3.1.1 Open the Settings menu.



3.1.2 Select New Layer



3.1.3 In Layer Properties, enter the information as below. (See Figure 3.1.3.1)

3.1.3.1 Enter a Name for the Virtual Layer

3.1.3.2 Optionally, enter a description for later troubleshooting.

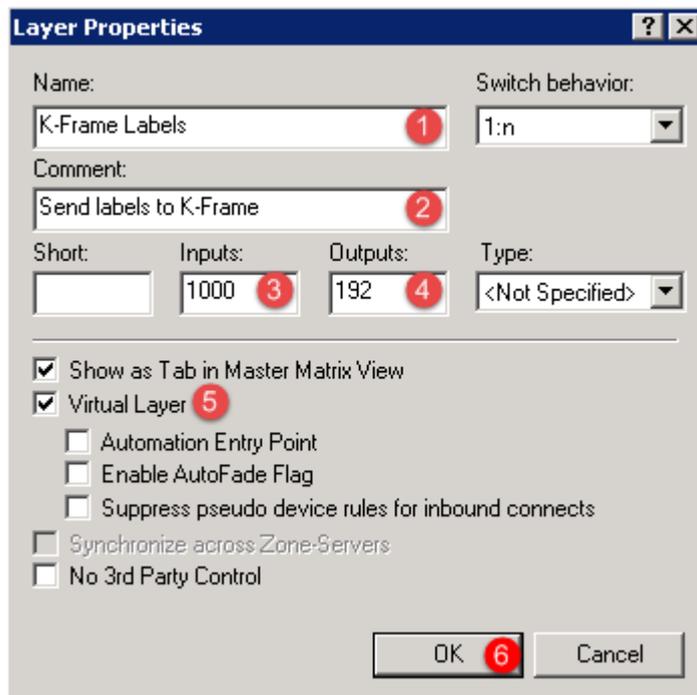
3.1.3.3 Enter the amount of inputs. This is the number of Router inputs that could potentially be routed to the K-Frame and not the Physical number of K-Frame inputs. Normally this would be the amount of sources on the Video Router (both Physical and Virtual)

3.1.3.4 Enter the number of outputs. This would be the number of Routable inputs of the K-Frame (Virtual or Physical) Normally this would be the number of Physical K-Frame inputs.

3.1.3.5 Select Virtual layer

### 3.1.3.6 Click "OK"

Figure 3.1.3.1

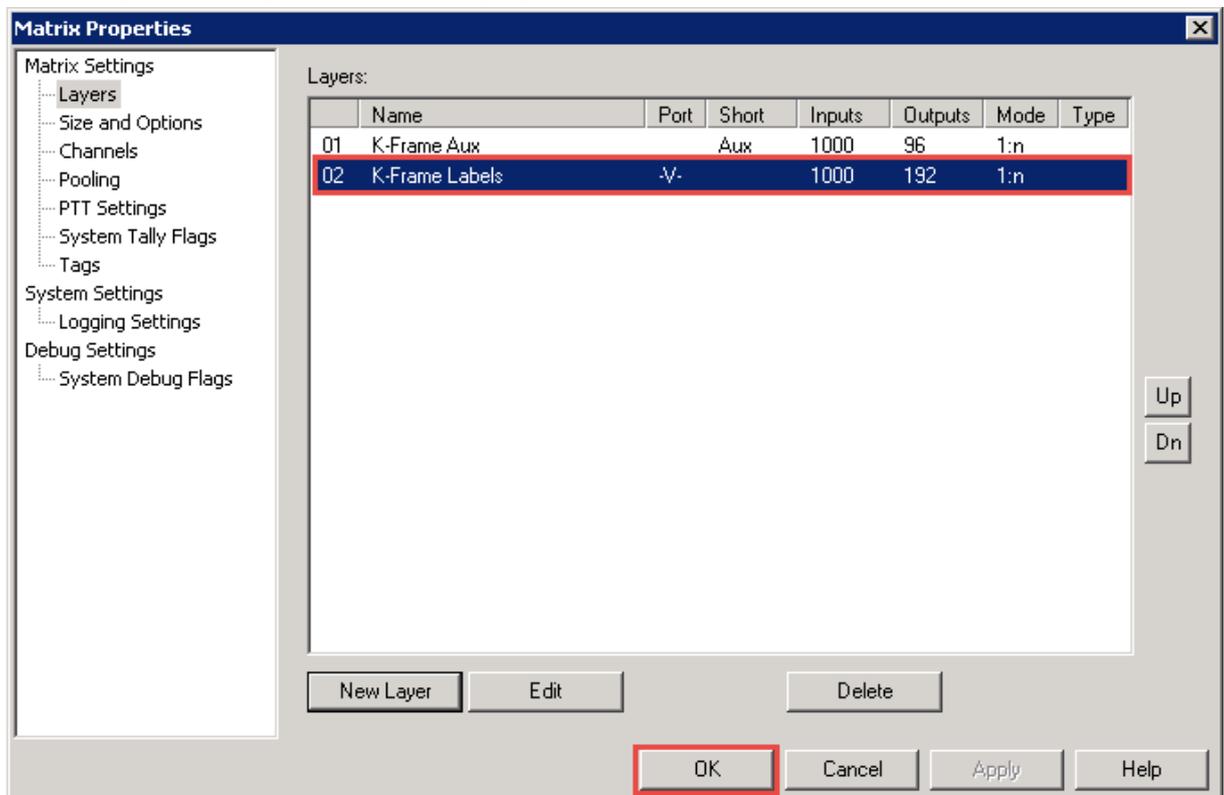


The Layer Properties dialog box is shown with the following fields and options:

- Name: K-Frame Labels (1)
- Switch behavior: 1:n
- Comment: Send labels to K-Frame (2)
- Short: (empty)
- Inputs: 1000 (3)
- Outputs: 192 (4)
- Type: <Not Specified>
- Show as Tab in Master Matrix View
- Virtual Layer (5)
  - Automation Entry Point
  - Enable AutoFade Flag
  - Suppress pseudo device rules for inbound connects
- Synchronize across Zone-Servers
- No 3rd Party Control

Buttons: OK (6), Cancel

### 3.1.4 The newly created Layer will now be displayed.



The Matrix Properties dialog box shows the Layers table with the following data:

	Name	Port	Short	Inputs	Outputs	Mode	Type
01	K-Frame Aux		Aux	1000	96	1:n	
02	K-Frame Labels	-V-		1000	192	1:n	

Buttons: New Layer, Edit, Delete, OK, Cancel, Apply, Help

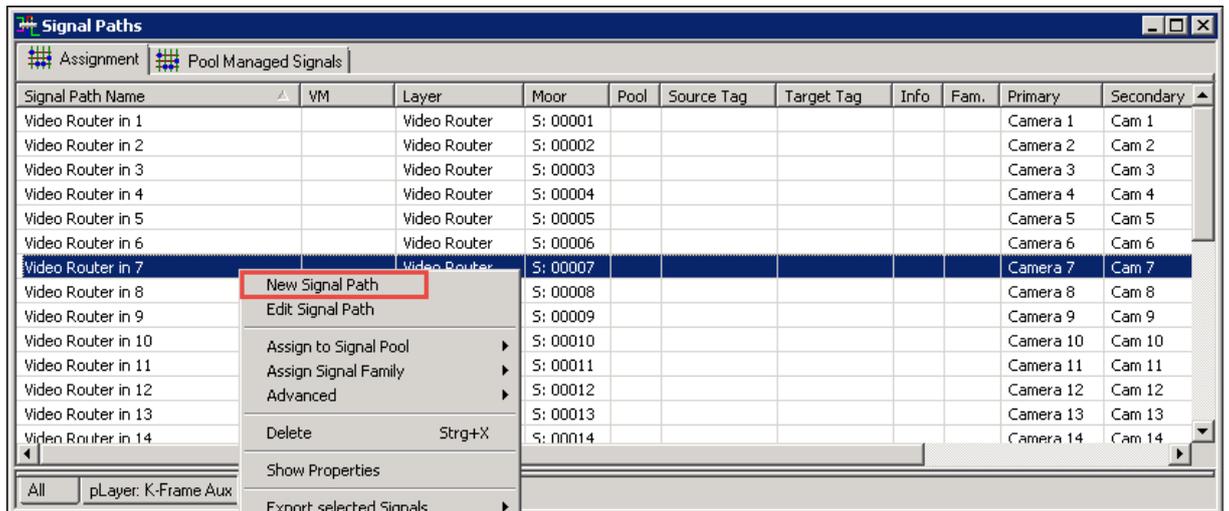
### Click "OK"

### 3.2 Create the Signal paths that will feed the K-Frame Labels.

#### 3.2.1 Select the Signal paths Icon



#### 3.2.2 Right Click anywhere on the Signal paths window, select “New Signal Path”



#### 3.2.3 Enter a Description, ensuring that your Total amount of Characters, including spaces can never exceed 8 Characters. (These will become the K-Frame inputs) All other entries are optional.

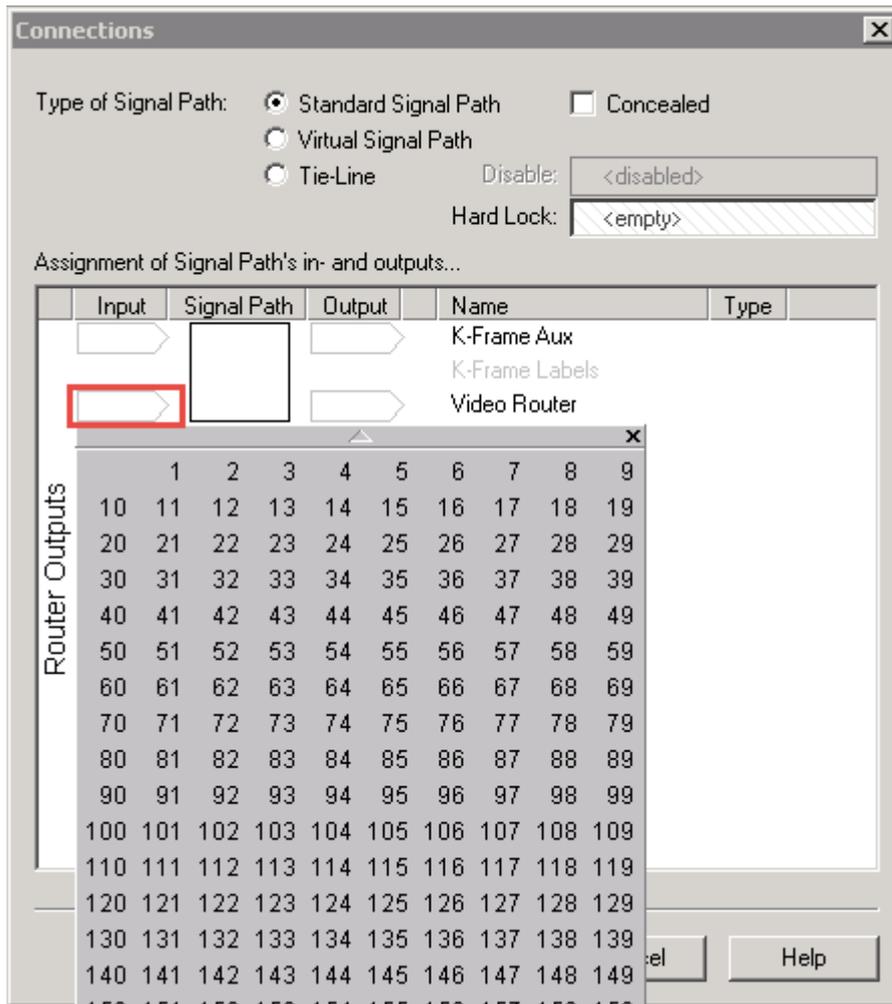
The image shows a software dialog box titled "Information" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Description:** A text input field containing "KI {1-196}"
- Amount:** A spinner control set to the value "1".
- Preview:** A text field containing the string "KI-1", "KI-2", "KI-3", "KI-4", "KI-5", "KI-6", "KI-7", "KI-8", ...
- Location:** An empty text input field.
- Comment:** A large empty text area.
- Signal path Family:** A dropdown menu currently showing "< No assignment >" and a "Modify" button to its right.
- Conflicts:** A large empty text area.

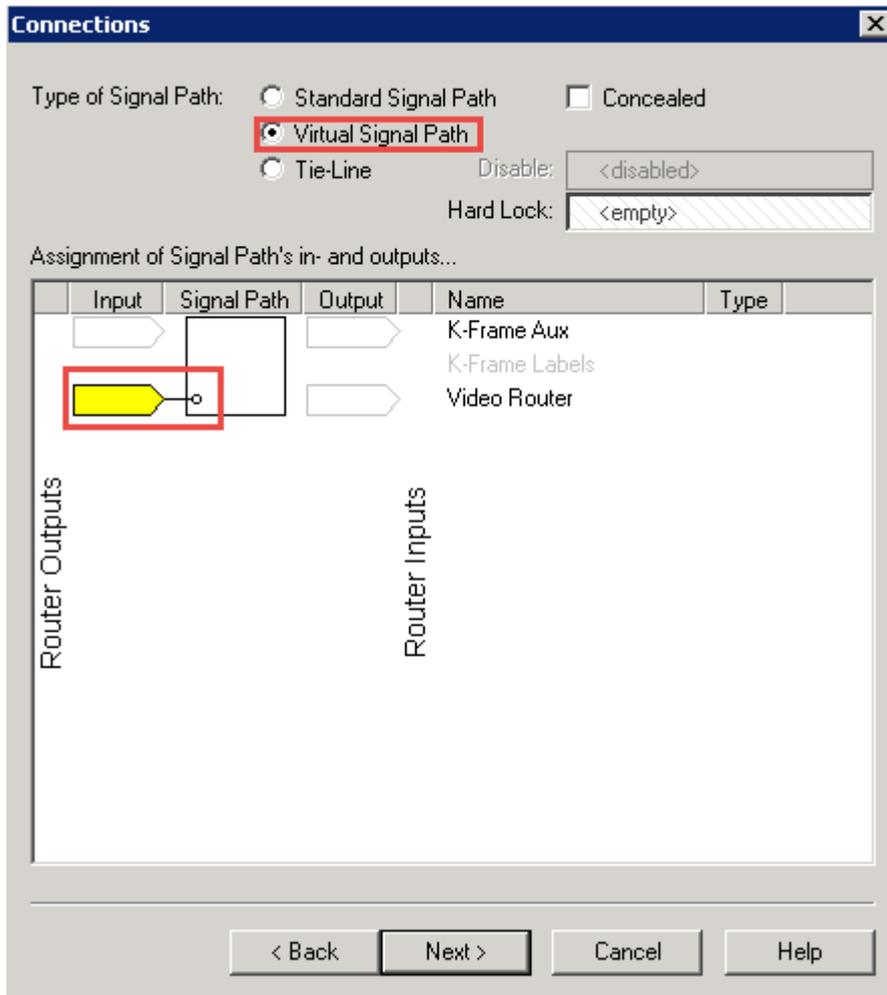
At the bottom of the dialog, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

Click "Next"

- 3.2.4 Select the Router outputs that will feed the K-Frame Video Inputs. When using an Iterator, these would have to be consecutive outputs.



In Case the K-Frame is not fed by a Physical Video Router, Select "Virtual Signal Path" (As in this example)



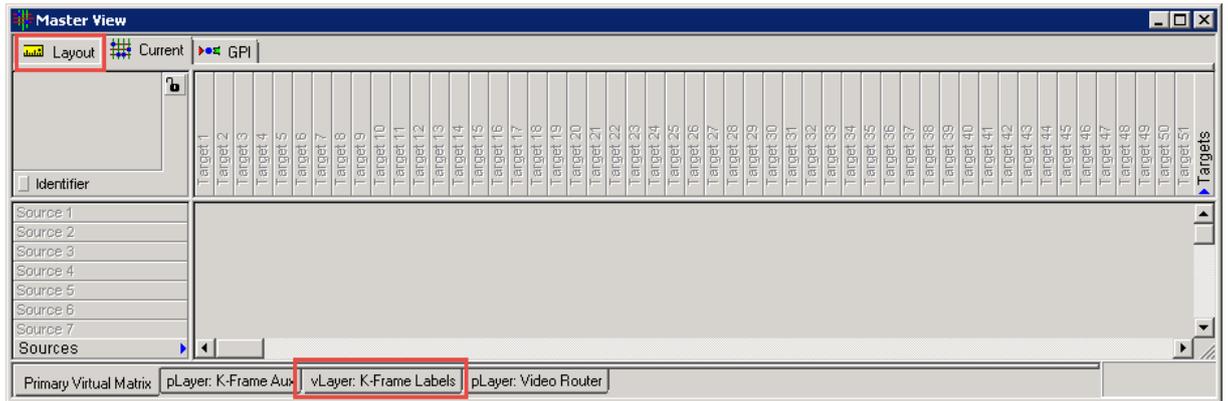
3.2.5 This is all that is needed here, Click on next repeatedly until it becomes a “Finish” button. Click “Finish”

3.3 Next we need to connect the newly created signal paths to the Virtual Router.

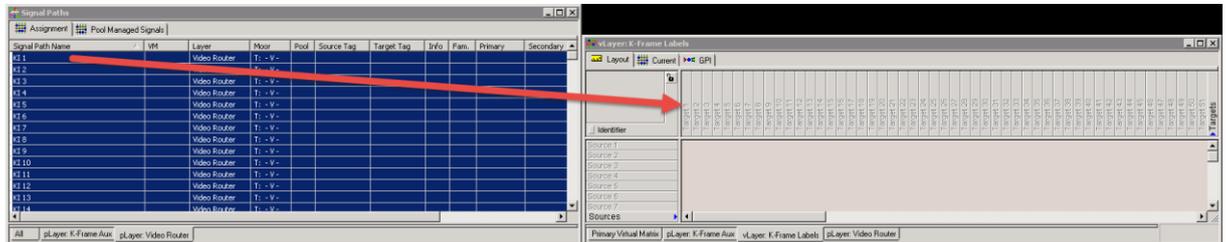
3.3.1 Open the Primary Virtual Matrix.



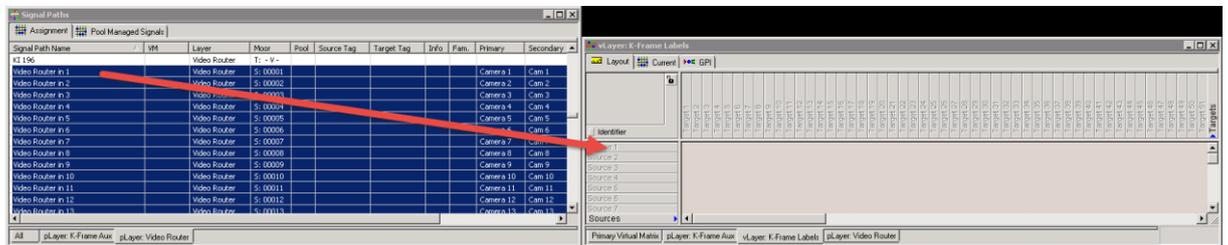
3.3.2 Select the Tabs “Layout” and vLayer K\_frame Labels (or the relevant name)



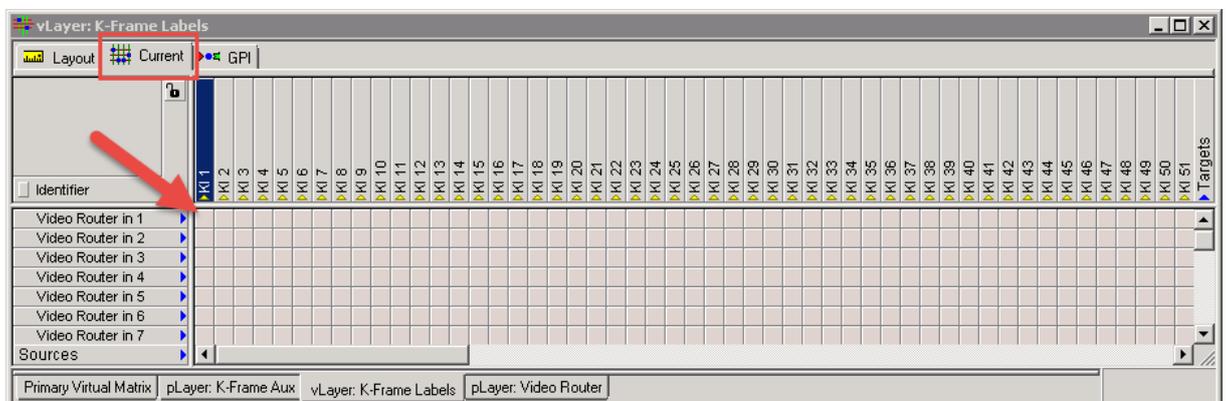
3.3.3 Select all Router Targets that are K-Frame inputs (Virtual or Physical) and Drag and drop them into the Target Columns, Starting from Target 1.



3.3.4 Do the Same for all Router Sources that could potentially be routed to the K-Frame inputs.



3.3.5 Select the “Current” Tab



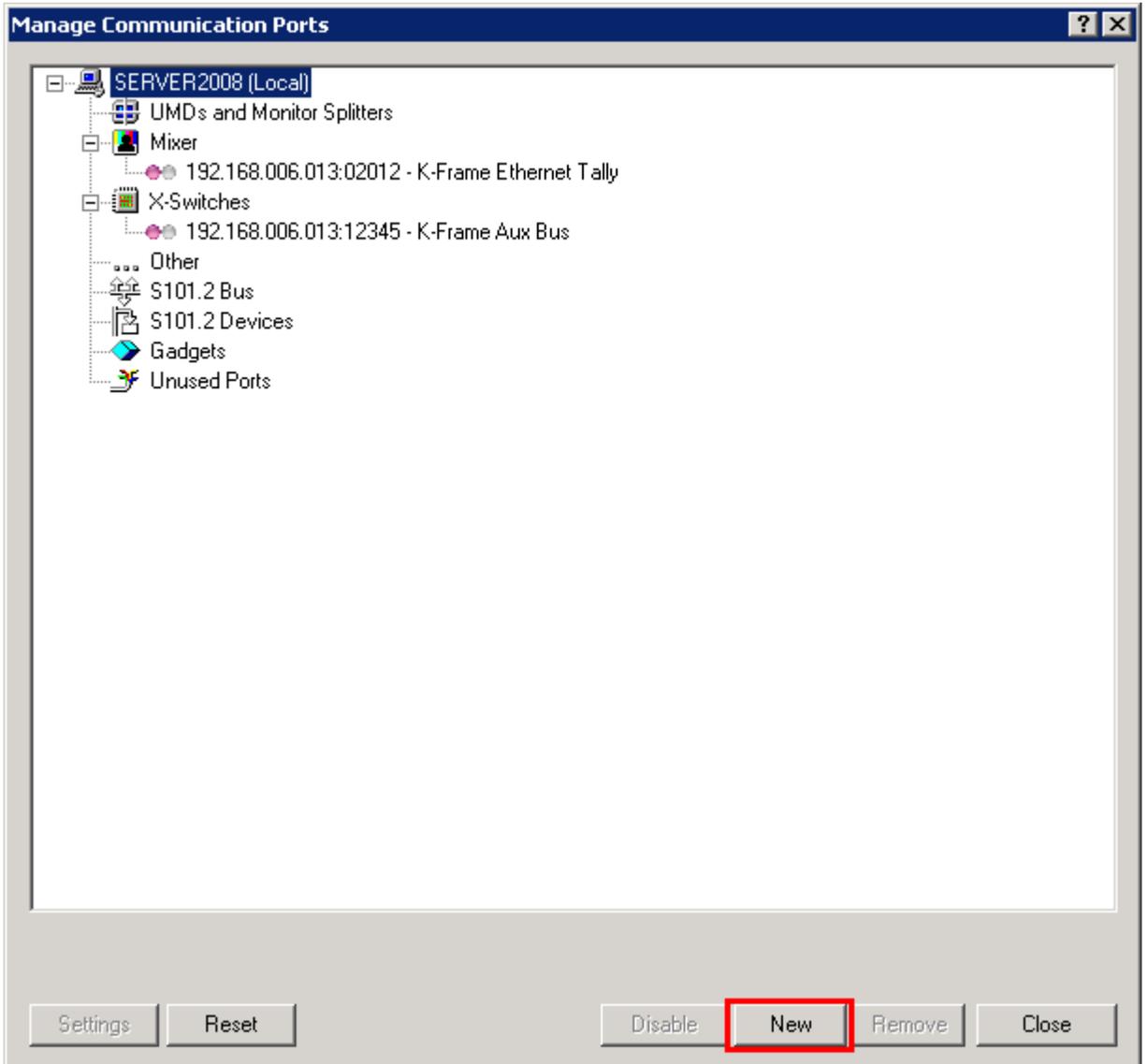
Try Clicking on the Crosspoints. You should now be able to route.

### 3.4 Create a Connection to the K-Frame.

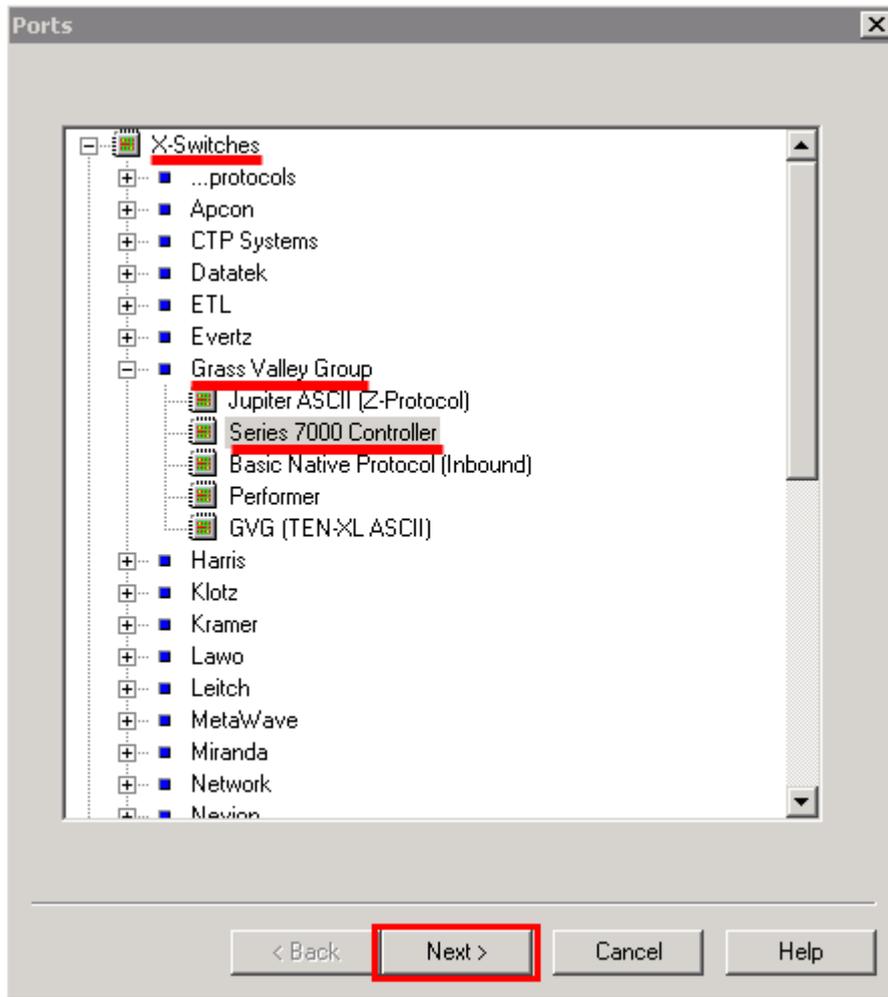
#### 3.4.1 Open the “Manage Communication Settings” window



#### 3.4.2 Select “New”

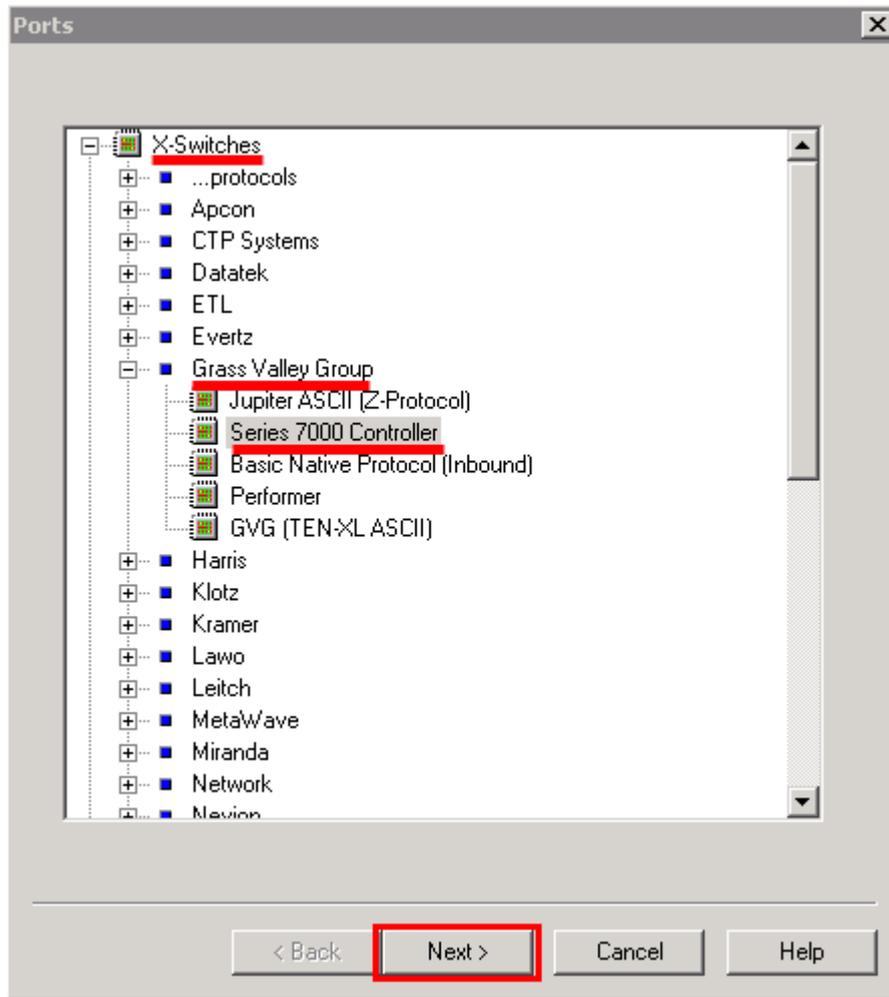


3.4.3 Expand the Tree X-Switches -> Grass Valley Group -> Series 7000 Controller



Click "Next"

### 3.4.4 Select “New Port”



### 3.4.5 Create the TCP/IP Port (See diagram 3.4.5.1)

3.4.5.1 Enter a Description for the connection

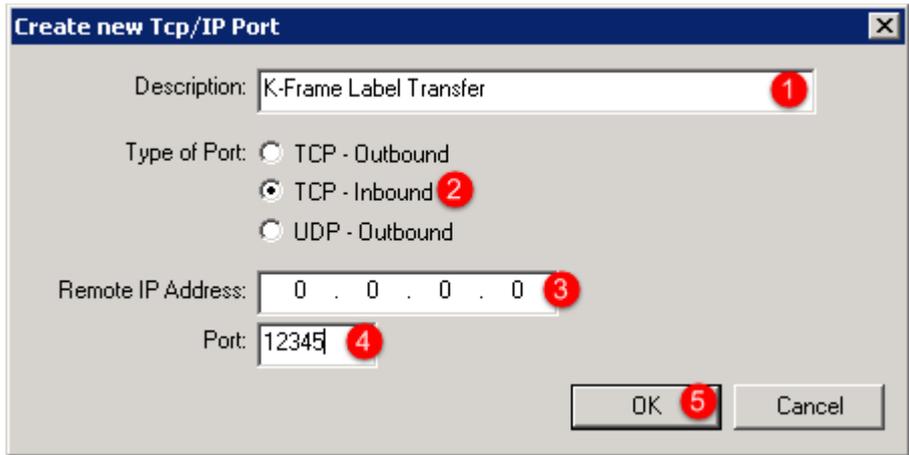
3.4.5.2 Select TCP – Inbound

3.4.5.3 Do not enter an IP address (Because the Type of Port is inbound)

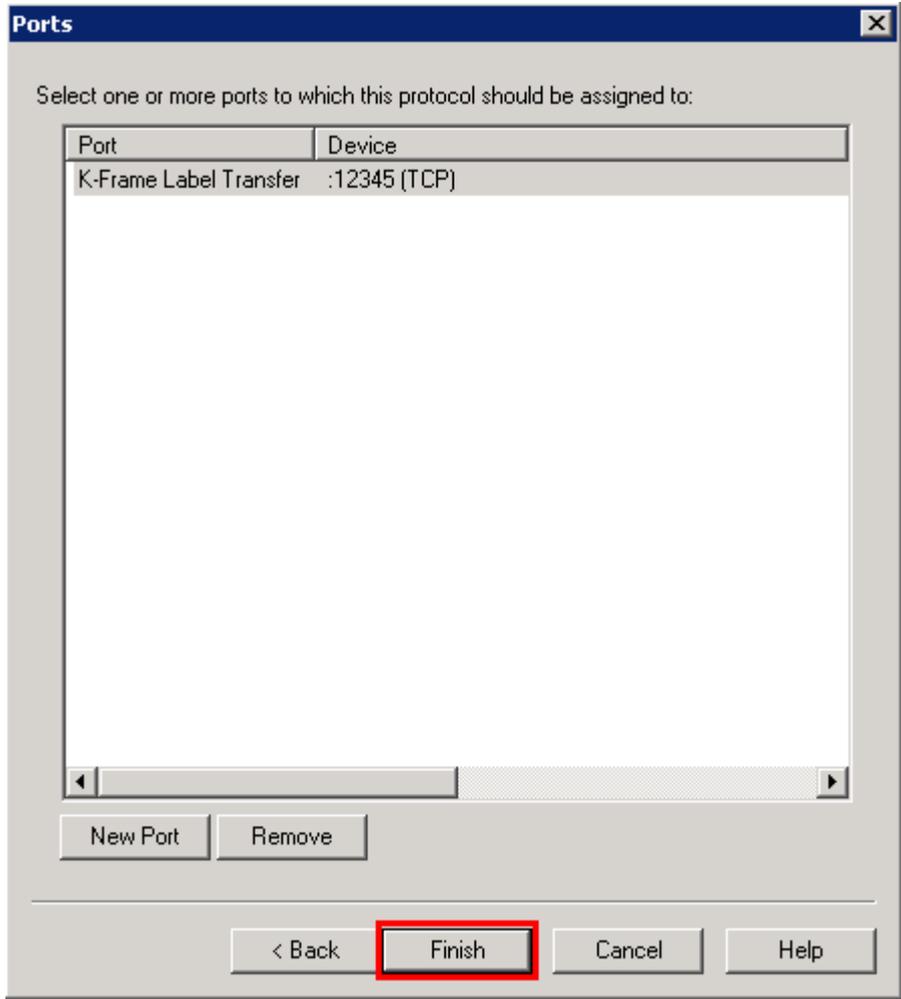
3.4.5.4 Enter the Port Number (12345 Specified by Manufacturer)

3.4.5.5 Click “OK”

Figure 3.4.5.1



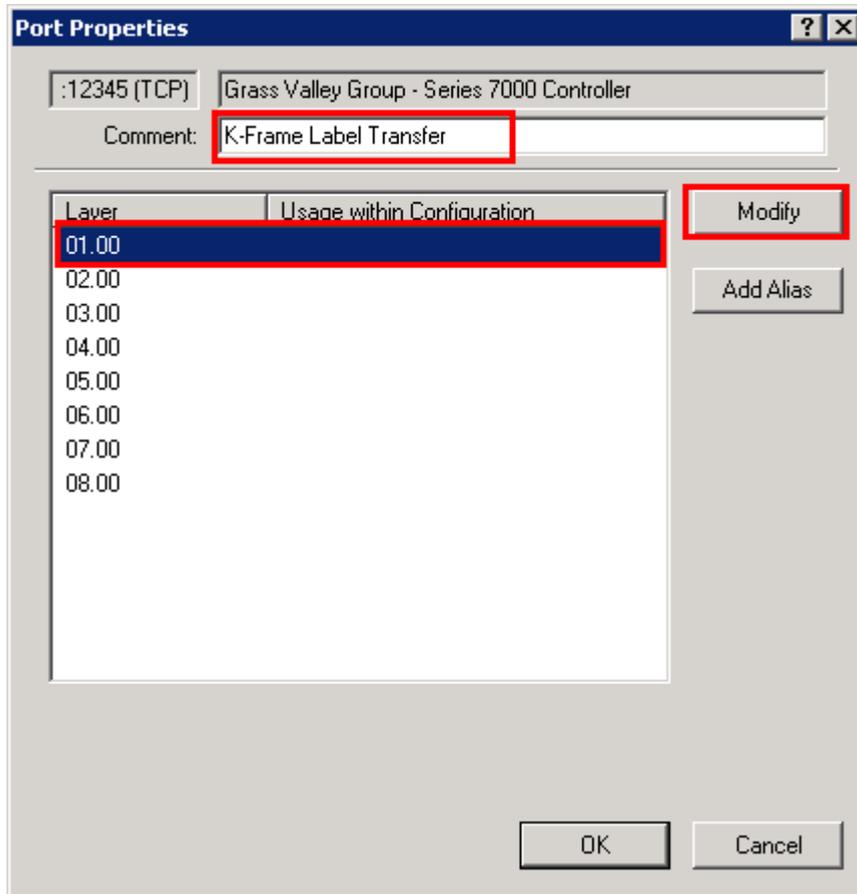
3.4.6 The newly created port will automatically be selected.  
Click "Finish"



3.4.7 Enter the port Properties (See Figure 3.4.7.1)

3.4.7.1 Enter a Comment (This comment will also be displayed in the “Manage Communications” Window.)

Double Click on “Layer 1” or select it and click “Modify”.



3.4.7.2 Enter the Layer Assignment parameters (See Figure 3.4.7.2.1)

3.4.7.2.1 Select the Layer Created in Section 3.1 as the layer to be used.

3.4.7.2.2 Select “The Attached Device is a Control-System”

3.4.7.2.3 Click “OK”

Figure 3.4.7.2.1

**Layer Assignment** [X]

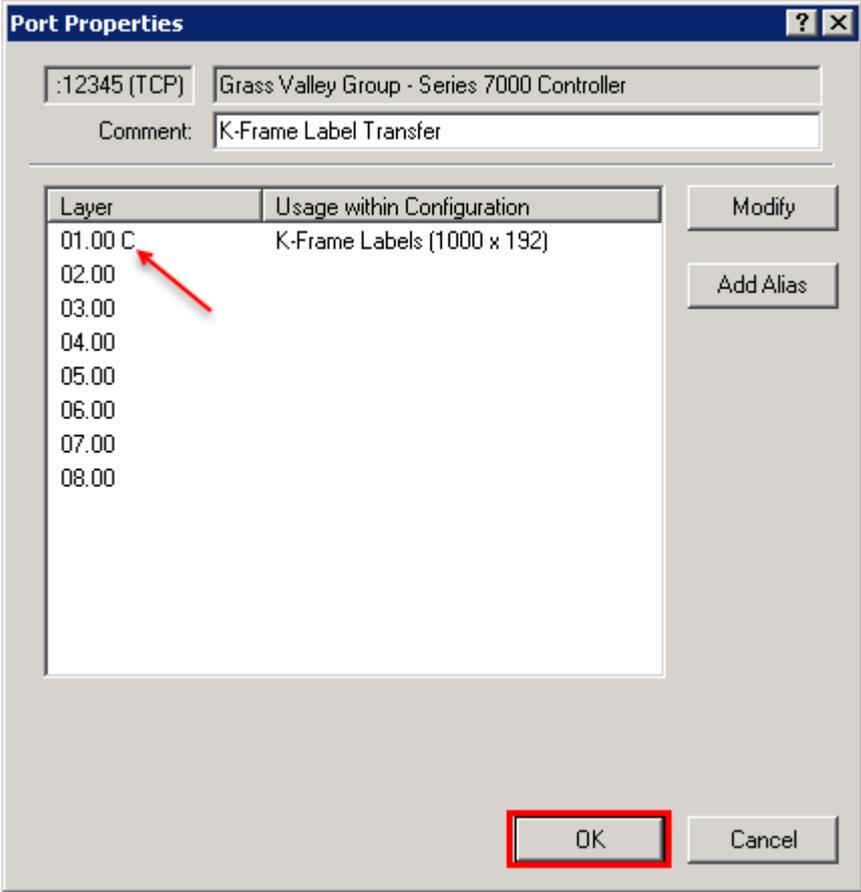
Layer:  Controlling VM Layer:

Direction:  The Attached Device is a Router  
 The Attached Device is a Control-System

Offsets

	Minimum:	Maximum:	Offsets:	NOTE:
Sources:	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Zeros indicate default behavior, do not change without reason.
Targets:	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	

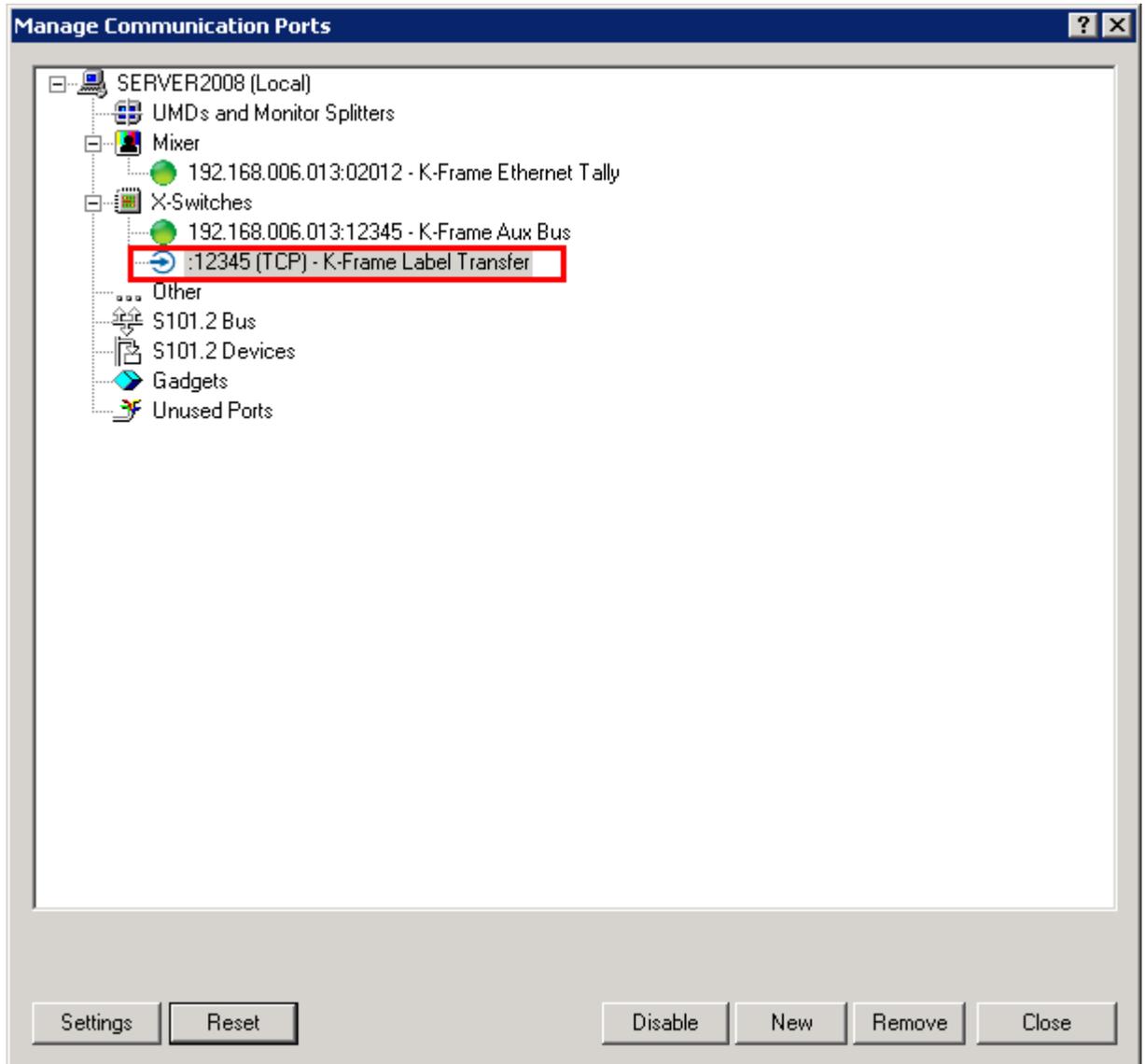
3.4.7.3 The letter "C" indicates that this port is connected to a Control System



Click "OK"

3.4.7.4 The Manage Communications Window will now display the newly created connection and the Symbol displayed indicates that vsmStudio is listening on Port 12345. Because the connection is inbound, vsmStudio will open this port but wait for a connection from the K-Frame.

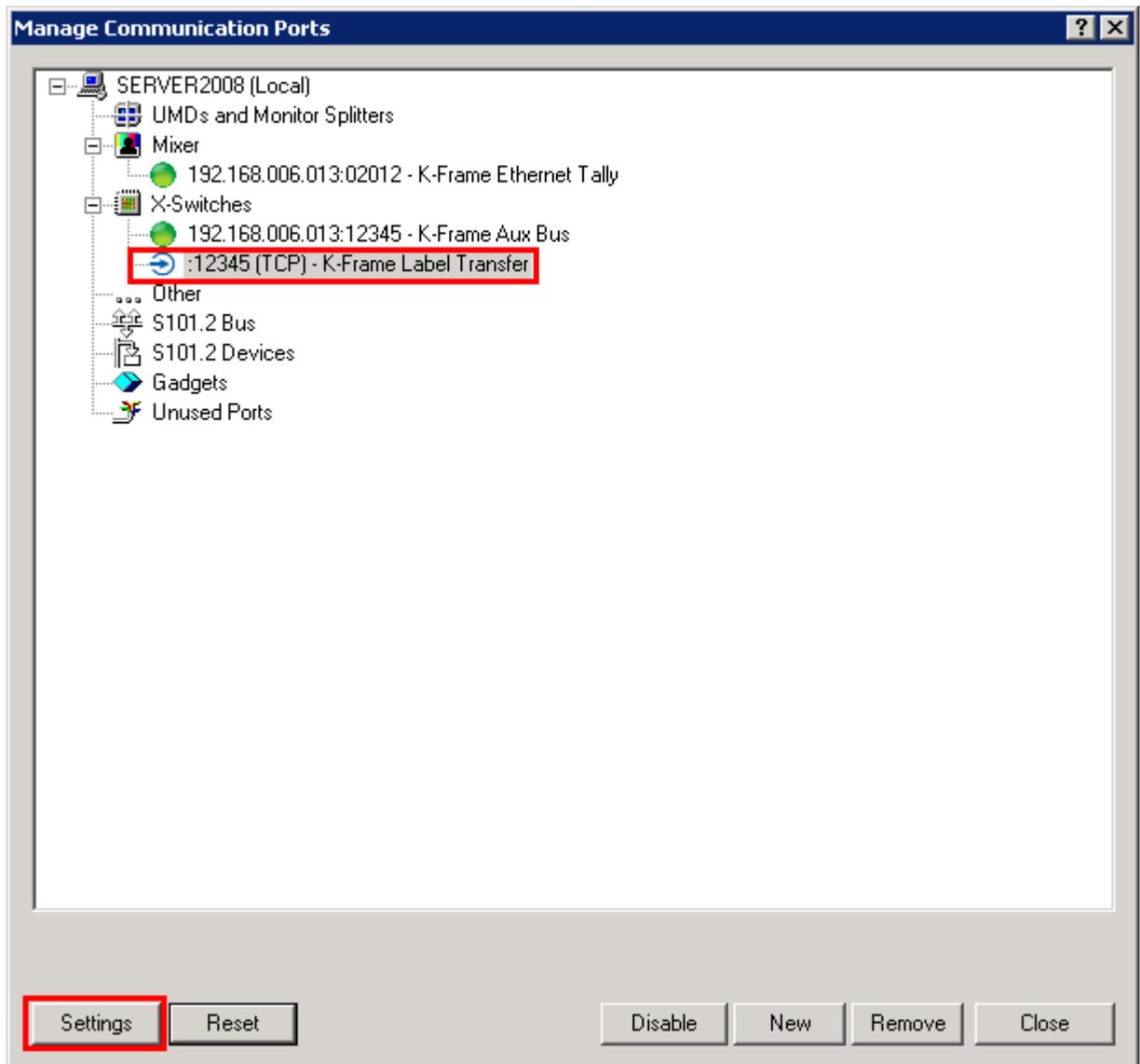
Once the K-Frame initiates communication, this communication will be bi-directional and vsmStudio can send label information to the KFrame.



Note : You won't get a confirmation with a green dot for an inbound connection.

3.5 Set the Attributes for the connection.

3.5.1 Select the Label transfer connection. Click on settings or Doubleclick on the connection.



3.5.2 Select "Attributes. (See Figure 3.5.2.1)

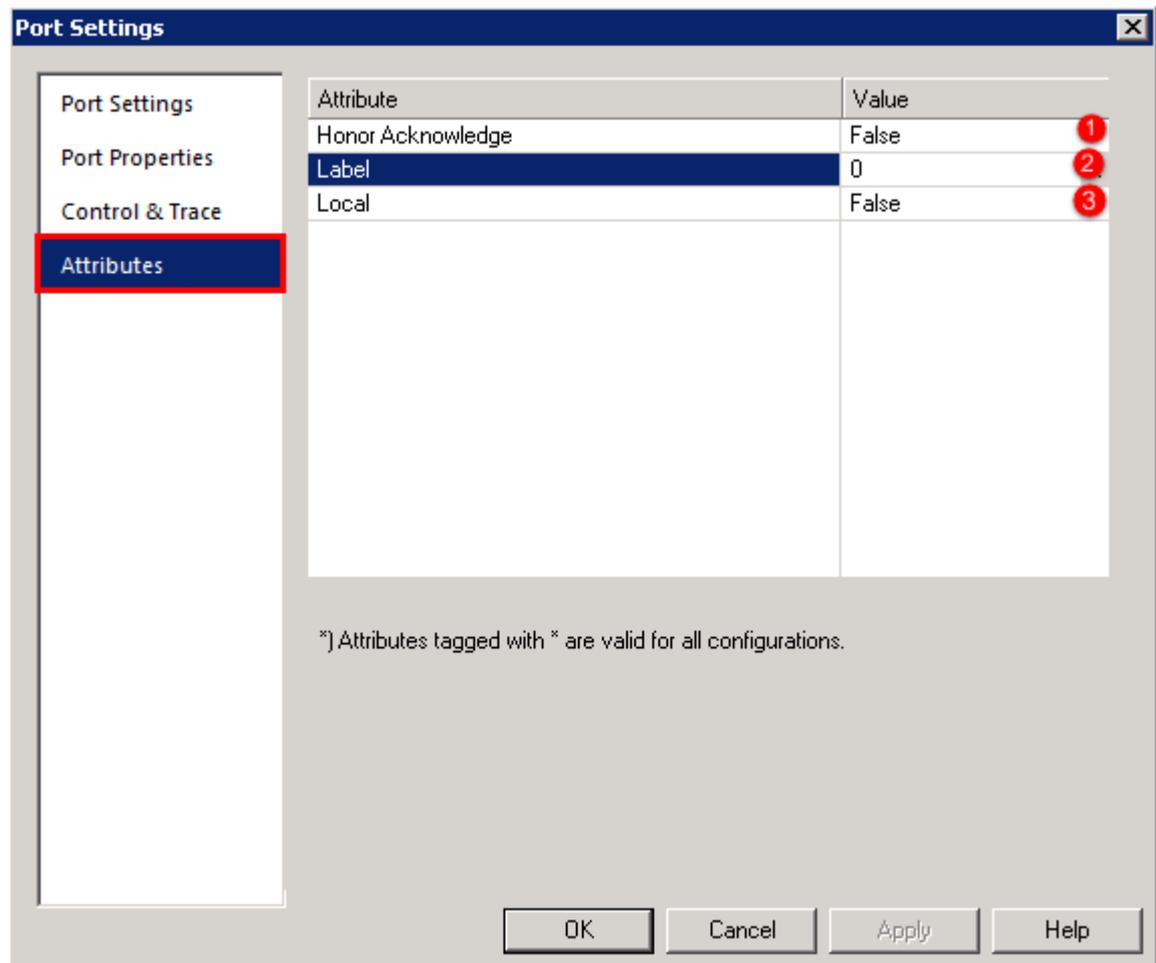
3.5.2.1 Ensure Honor Acknowledge is set to False

3.5.2.2 The label setting selects the layer of labels that you wish to forward to the K-Frame

Note : DO not use layer 4 (Mixer) because this layer is limited to 4 characters for older mixer types with 4 character limit.

3.5.2.3 Ensure the Local setting is set to "False"

3.5.2.4 Click "OK"



3.5.2.5 Repeat these steps on all servers in the cluster.

Note : K-Frame supports label transfer only on 2 connections at the same time.

### 3.6 Setting up the K-Frame to accept incoming labels from vsmStudio

Use the K-Frame menu screen. (See Figure 3.6.1.1)

3.6.1 Select “Eng Setup”

3.6.2 Select “Router”

3.6.3 Enter the IP Address of the vsmStudio Primary Server

A Green Dot indicates valid communication.

3.6.4 Enter the IP address of the vsmStudio Secondary Server

A Green dot indicates Valid Communication.

Note : Only one server will connect and display a Green Dot.

3.6.5 Click on Add

3.6.6 A list of Names sent from vsmStudio will populate the Router Sources Section.

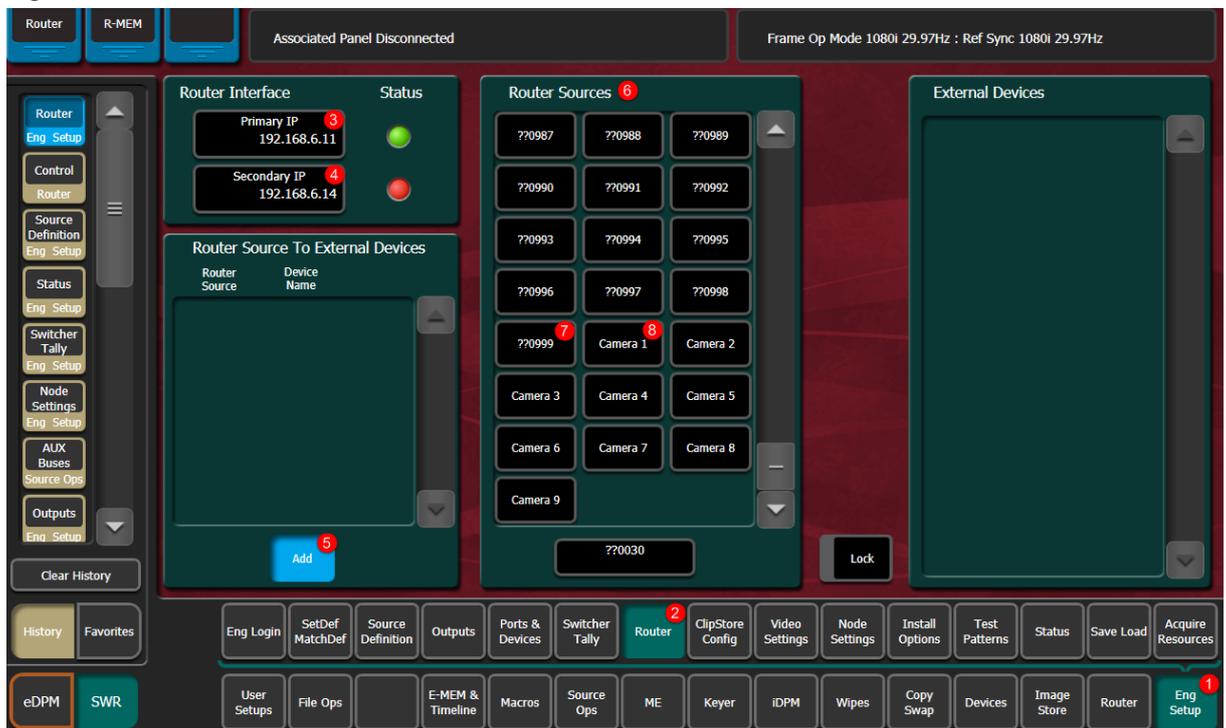
These are the names of the vsmStudio Router sources that are available on the relevant K-Frame Labels Layer.

3.6.7 Note : Empty router Sources will be displayed as ??and 4 Digits with an offset of 1.

3.6.8 Note : Only Labels that are 8 Characters or less will be displayed here (Camera 1, Camera 10, Camera 11 will all be displayed as Camera 1 and displayed a single time only. They are, however available to be used in the protocol and can be renamed at a later stage)

This list is populated and updated at initial connection only and will not be updated until the connection is broken and fully restarted.

Figure 3.6.1.1.



### 3.7 Associating vsmStudio Targets (Router out) to K-Frame inputs.

Use the K-Frame menu screen. (See Figure 3.7.1.1)

3.7.1 Select Eng Setup

3.7.2 Select Source Definition

3.7.3 In the Source List, select the First Routable K-Frame input (or Virtual if doing Label Transfer only)

3.7.4 In "Source Type", select Router

3.7.5 Click on Router Destination. A list of Router Destinations (sent from vsmStudio) will appear.

3.7.6 Select the relevant Router Destination from the list. (Figure 3.7.5.1)

Repeat the above steps for all routable inputs.

Figure 3.7.1.1

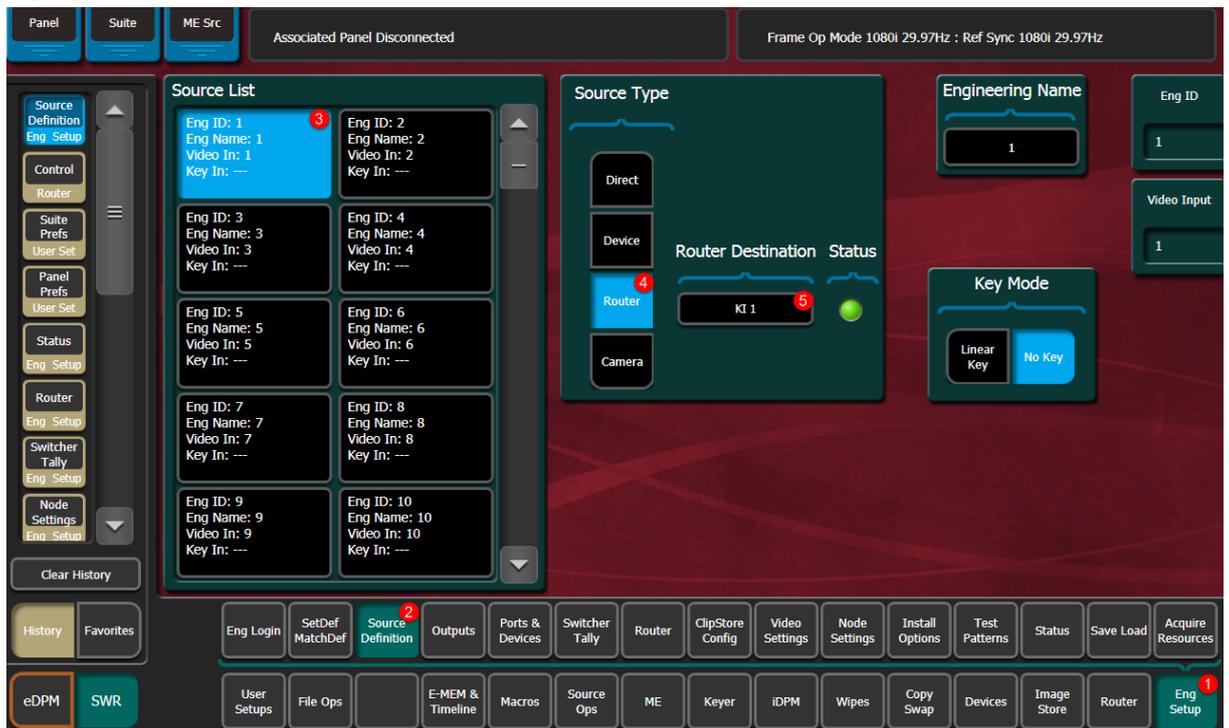


Figure 3.7.5.1



### 3.8 Verify Valid Name Transfers

Use the K-Frame menu screen (See Figure 3.8.1.1)

#### 3.8.1 Select Router

3.8.2 The Router Sources list will Populate with all accepted names that have been transferred from vsmStudio.

3.8.3 All K-Frame Sources that have valid Router connections will be displayed in the Router Destinations section.

Figure 3.8.1.1



NOTE : All name changes require routing of the destination to change in vsmStudio. The connection will only be made from K-Frame to update names after the status of the routed crosspoint has been changed.