



DigitalinxIP 2000 / 5000 Series Deployment Guide

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Introduction

This document is to assist with deploying the DigitalinxIP 2000 and 5000 series products.

With DigitalinxIP you can stream HDMI audio and video signals over a 1Gb network infrastructure. The 2000 series system is capable of streaming video resolutions up to 1080p and uses h.264 compression to allow thousands of endpoints to be deployed over a 1Gb network. The 5000 series is capable of streaming video resolutions up to 4K@60Hz 4:2:0 and USB 2.0 full speed and uses JPEG2000 which is a visually lossless compression codec that features low end to end latency (~1.5fps). Because JPEG2000 operates at a much higher data rate compared to h.264 the amount of streaming decoders in a system is limited to 100 total devices when using a 1Gb network infrastructure, however if utilizing a 10Gb network infrastructure, many more devices can be deployed on the same multi-switch network system.

There are multiple ways to control DigitalinIP systems once installation of the switching system is complete. The Digi IP Control APP for iPad and Windows can be used for simple video switching and display ON and OFF control, a third party control system can also communicate with and control all DigitalinxIP devices on the A/V LAN.

Installation Instructions - 2000 / 5000 Series

Installation Steps

1. Configure a managed 1Gb / 10Gb PoE network switch for DigitalinxIP system usage

NOTE: A network switch configuration guide has been built to assist with configuring network switches for a variety of switch manufacturers. The network switch configuration guides are located on the DigitalinxIP product pages on the Liberty website (www.libav.com) under the *DOCUMENTATION* tab
2. Once network switch is configured, turn off power to the configured network switch
3. Connect Category 5e or greater twisted pair cable with the TIA/EIA-568B crimp pattern between the LAN1 port on the IPEXCB and the configured network switch

NOTE: If the network switch cannot provide power or enough power to the IPEXCB, connect the included power supply to the 12V DC power input of the control box. If the network switch is not providing PoE power to the IPEXCB then disable the PoE function of the connected RJ45 port on the switch
4. Connect the DigitalinxIP encoder(s) and decoder(s) to the network switch using Category 5E or greater twisted pair cable with the TIA/EIA-568B crimp pattern and per the instructions for those device
5. Connect all sources and displays to the respective DigitalinxIP encoders and decoders
6. Apply power to the configured network switch
 - NOTE: The IPEXCB will fully boot after five minutes
7. Apply power to the connected audio/video devices
8. Use *DigitalinxIP Configurator Software* to configure the DigitalinxIP components

NOTE: The *Digitalinx Configurator Software* tool can be downloaded at www.libav.com under the IPEXCB product paged under *SOFTWARE* tab

To control the IPEXCB and DigitalinxIP system by a third party control system, connect a Category cable between the LAN2 port on the IPEXCB to an Ethernet based third party control system network or use the RS232 connection on the IPEXCB to connect to a third party serial based control system according to the manufacturers system instructions

For a comprehensive list of IP and serial system commands for the IPEXCB and DigitalinxIP systems, please refer to the *DigitalinxIP Programming Guide* which is located under the *DOCUMENTATION* tab on the IPEXCB product page online at www.libav.com

Pre-written control system drivers are also available online on the IPEXCB product page under the *DRIVERS* tab

Downloading DigitalinxIP Configurator Software

The Digi IP Configuration software tool can be found on the IPEXCB product page under the *SOFTWARE* tab at www.libav.com. Download the zip file and extract all files, then run the .exe setup file on the Windows PC that will be used to configure the IPEXCB and associated encoders and decoders.

Making a PC Connection

Connect a Windows PC to an open port on the A/V network switch with a Cat 5e patch cable.

Set a static IP address for the Windows PC that is within the IP range of the IPEXCB (169.254.1.xxx) and set the subnet mask to 255.255.0.0. See *Logging into the web browser Graphical User Interface (GUI)* on page 9.

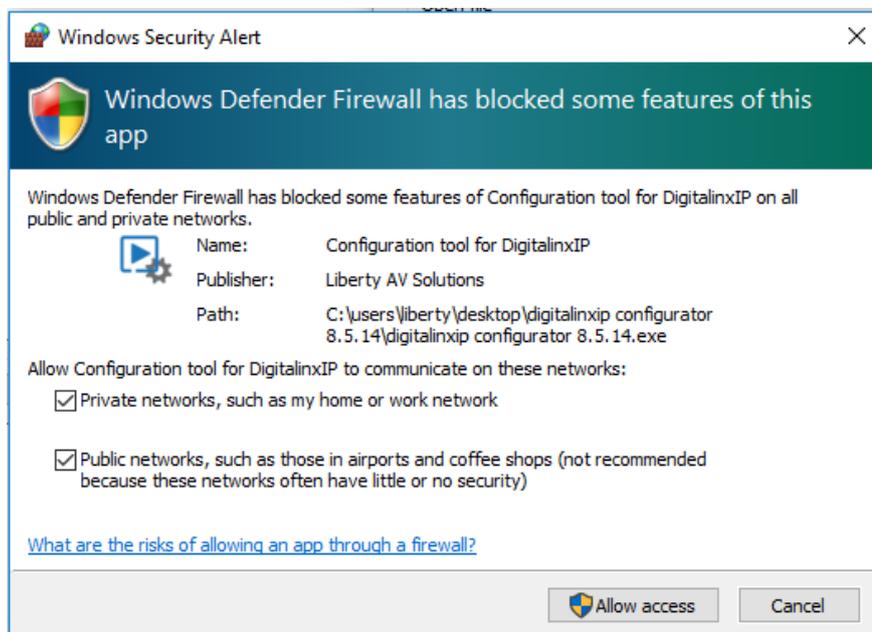
Please contact an IT administrator if the PC cannot be assigned a static IP address in this range.

Running Digi IP Configurator Software

Open the DigitalinxIP Configurator software. The link to the software can be found in the Windows Start menu or on the desktop if the option was enabled during setup.



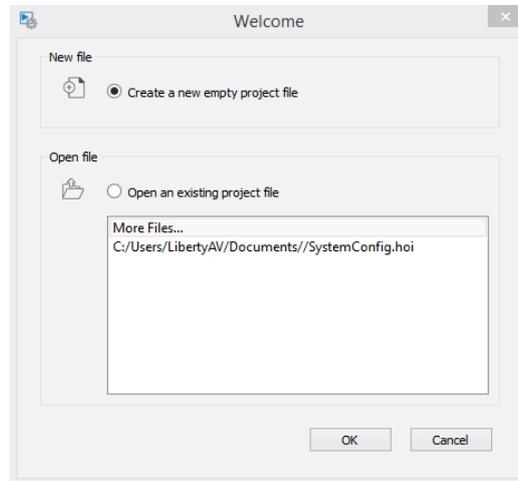
If a firewall warning pops up, tick the check boxes for private and public networks and click *ALLOW ACCESS*



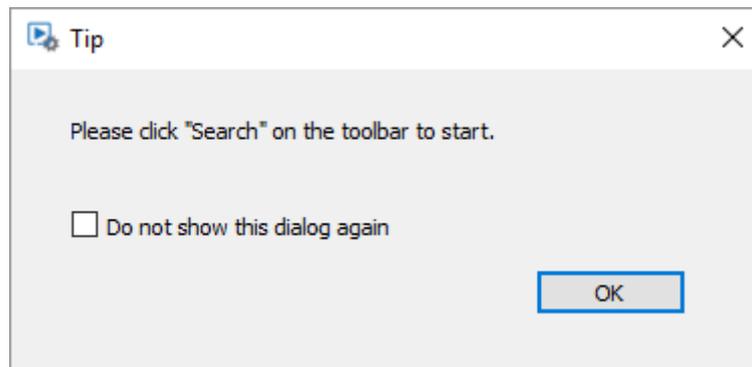
NOTE: DigitalinxIP Configurator cannot run in Windows 10 S Mode. If the PC used is running S Mode it must be switched out of S Mode.

DigitalinxIP Configurator Software Overview

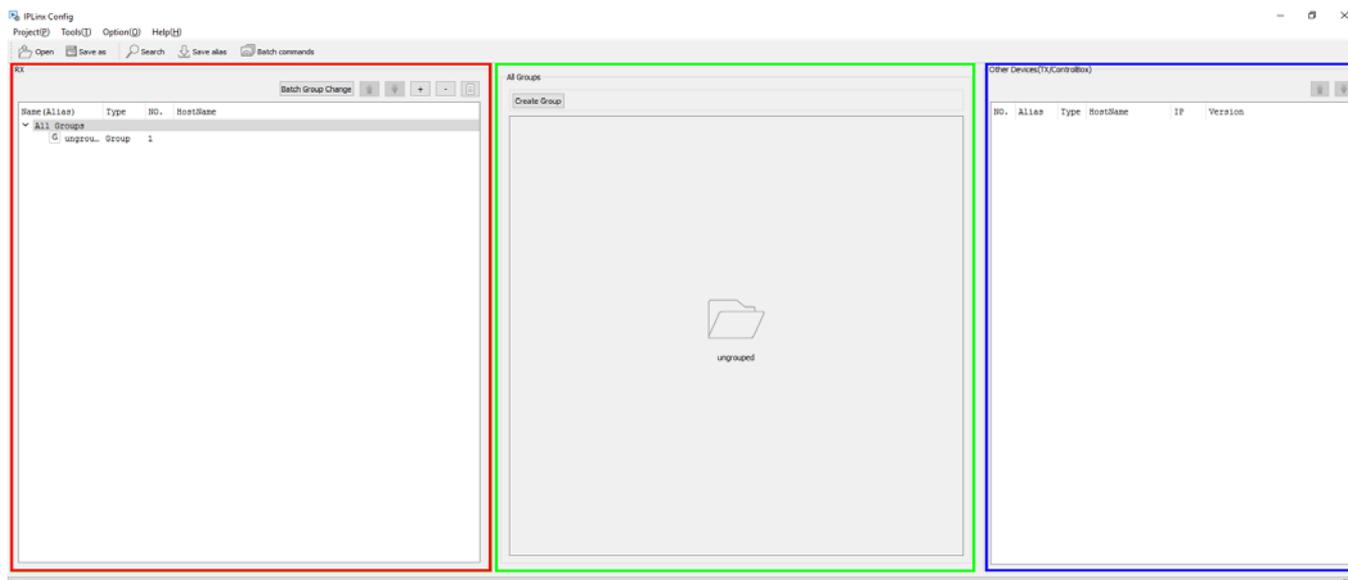
The DigitalinxIP Configurator software will typically present a 'Welcome' screen that will ask you to either open an existing file or create a new project file.



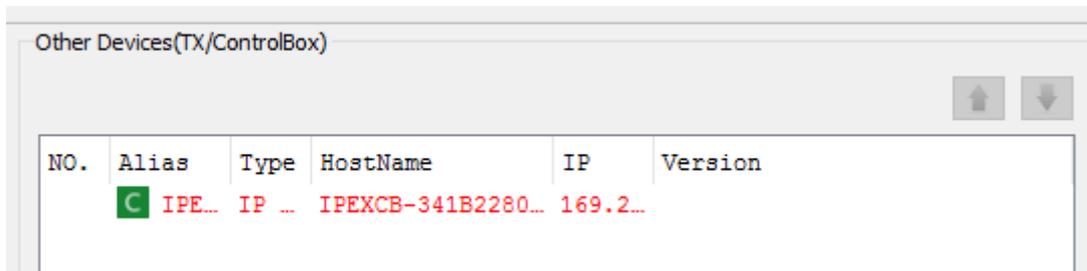
The DigitalinxIP Configurator software will then present a pop-up reminding the user to press the *Search* button to automatically recognize attached DigitalinxIP devices on the network. Ticking the check box will prevent this from opening in the future.



The DigitalixIP Configurator software screen is split into three primary zones: Decoders (RX) will be located on the left, encoders (TX) as well as the IPEXCB (C) will be located on the right and Groups will be located in the center.



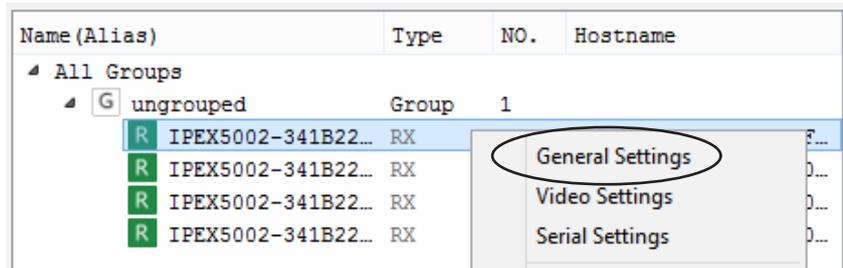
The IPEXCB should be the first device that is discovered by the software if the PC is correctly connected to the A/V network switch and within the IP range of the control box.



Assigning Alias Names to DigitalixIP Encoders and Decoders

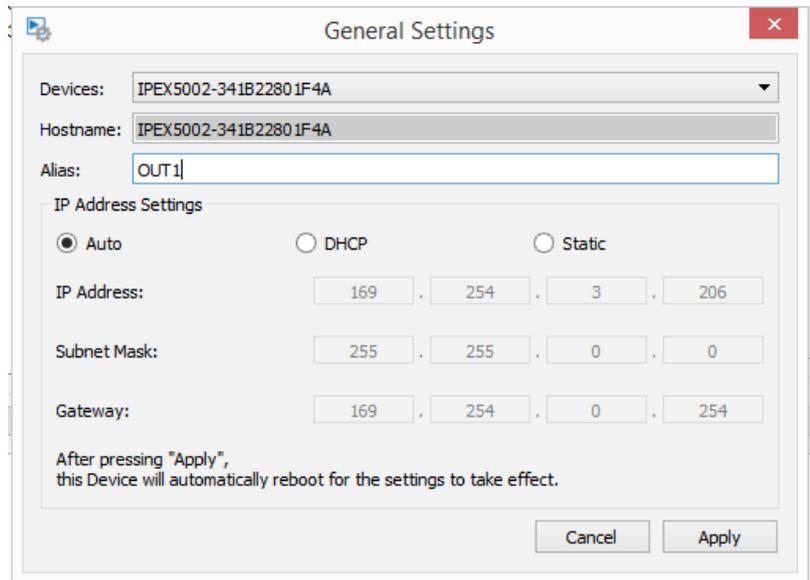
It may be important to assign an alias name to a device so the device can be associated and / or recognized with an A/V device more easily. This will also allow for faster programming when using the API for third party control of DigitalixIP devices.

To assign an alias to a device, except for the IPEXCB, right click the device and select *General Settings*.



The default Alias is the [MANUFACTURERS MODEL NUMBER - MAC ADDRESS OF THE DEVICE]. Enter the desired Alias for the device, then click *Apply*. Clicking the X will close the pop-up.

To prevent any switching issues, only alphanumeric characters and hyphen (-) are allowable characters, spaces are not allowed.



When the encoders and decoders have an Alias applied, the Alias will show up in the device listings.

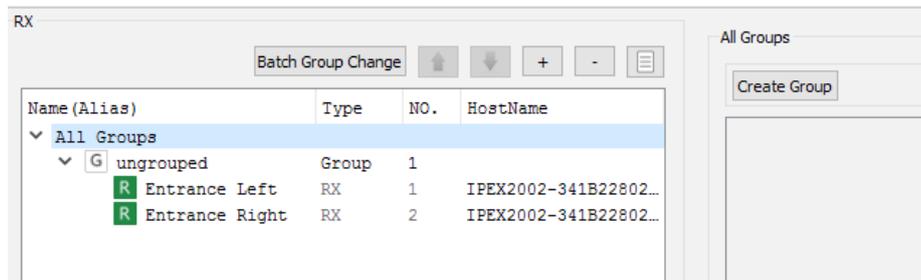
Name (Alias)	Type	NO.	Hostname
▲ All Groups			
▲ G ungrouped	Group	1	
R OUT1	RX	1	IPEX5002-341B22801F...
R OUT2	RX	2	IPEX5002-341B228030...
R OUT3	RX	3	IPEX5002-341B228030...
R OUT4	RX	4	IPEX5002-341B228030...

Creating Decoder Groups

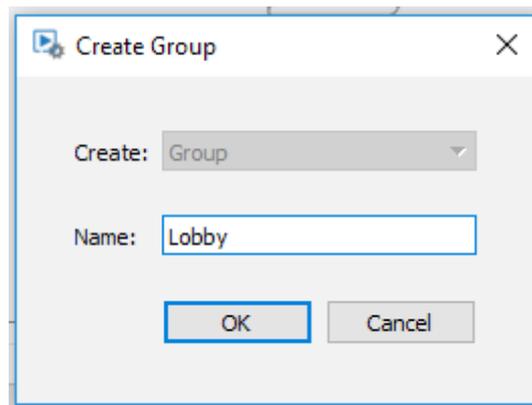
It may be useful to categorize decoders into groups so they can be identified more easily by their location. When using DigitalinxIP with a third party control system, it is not necessary to create and use groups however for servicing purposes it may be useful to do so. When using the DigitalinxIP iPad or Windows APP, groups are used to navigate to various locations with ease. See *Using iPad or Windows Control APP with IPEXCB* on page 55.

Create a New Group

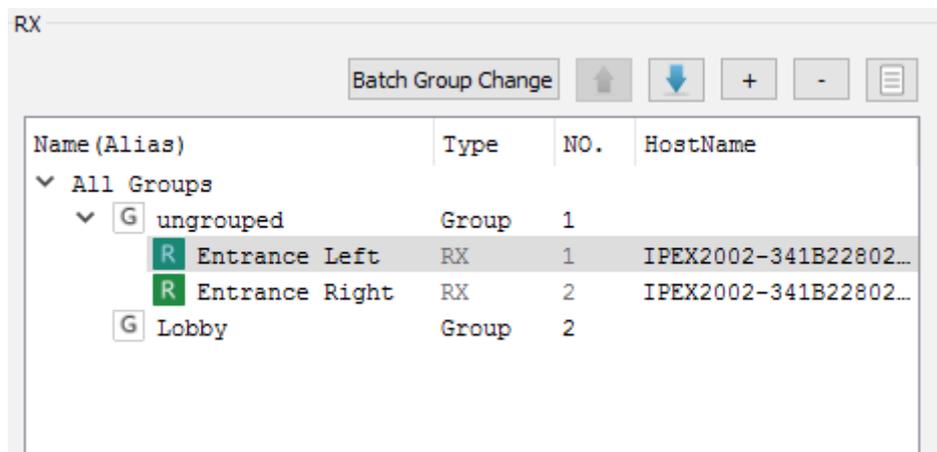
With *All Groups* selected on the left panel, click *Create Group* at the top of the middle panel.



Provide a name for the new group, then click *OK*.

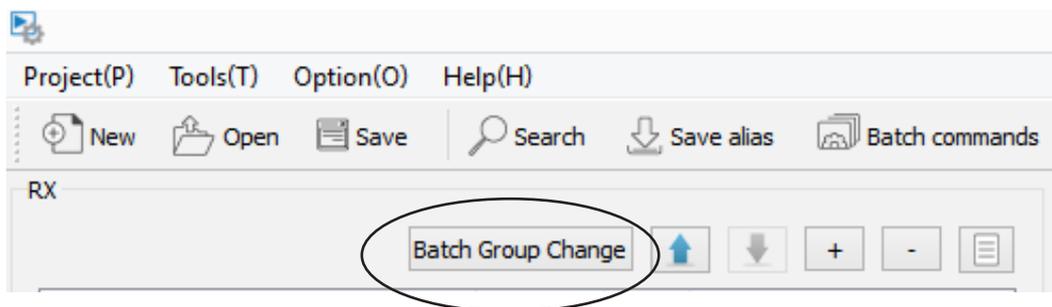


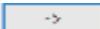
With the new group created you can now assign decoders to the group. To make this change click on *Batch Group Change* button.

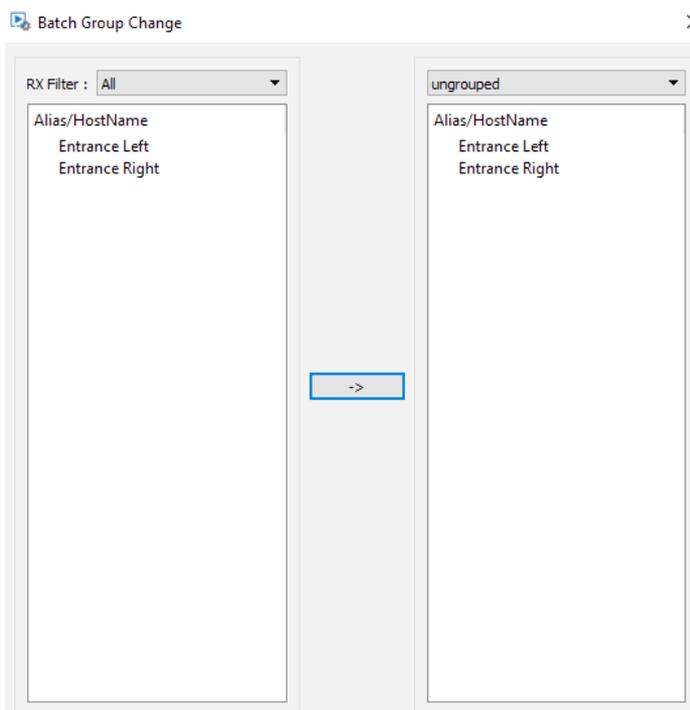


Assigning an DigitalinxIP Encoder or Decoder to a Group

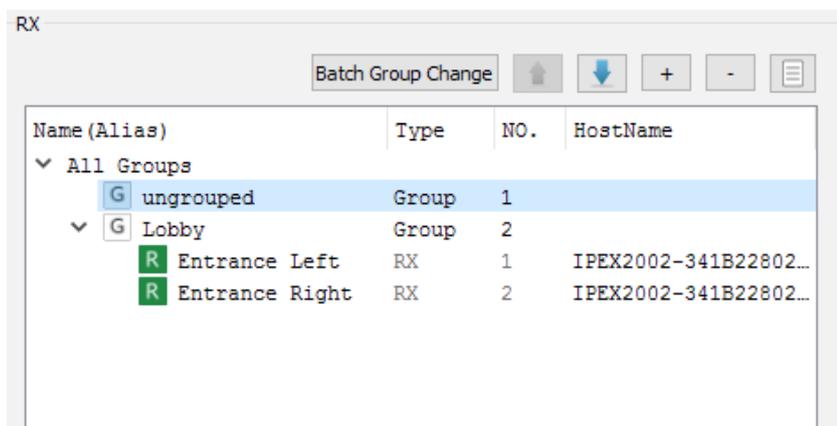
To assign decoders to the desired group location, click on 'Batch Group Change'



Choose the appropriate decoder group on either side of the Batch Group Change menu using the *RX Filter* drop down menus on either side. Selections will be adjusted from the left menu to the right. Use the  button to then send a decoder from one group to the next.

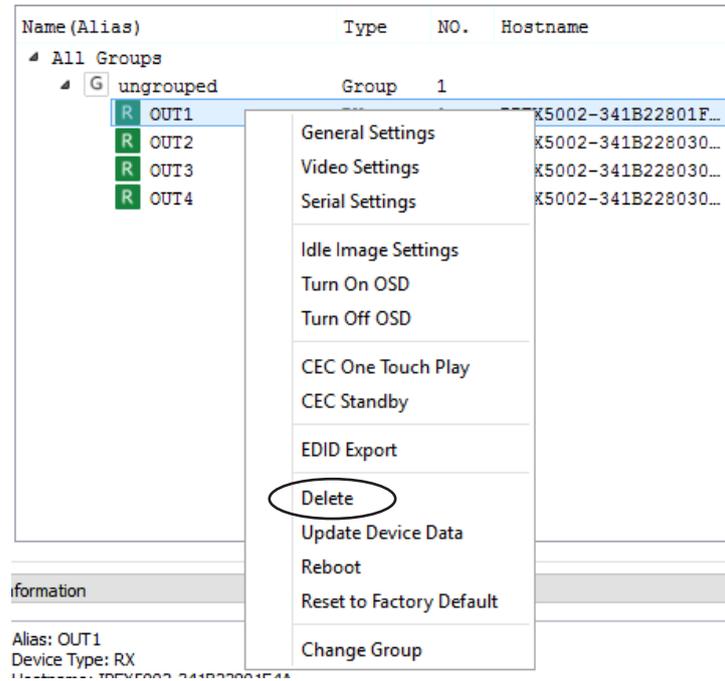


The decoders will now appear in the new group in the RX window.

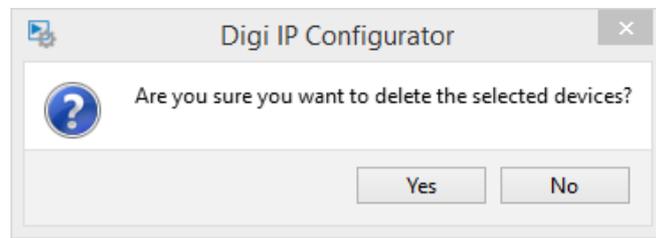


Removing an DigitalinxIP Encoder or Decoder

To remove an encoder or decoder from the configuration of the AV system, right click on the name of the encoder or decoder, then click *Delete*.



A confirmation window will open to confirm the deletion of the encoder or decoder.

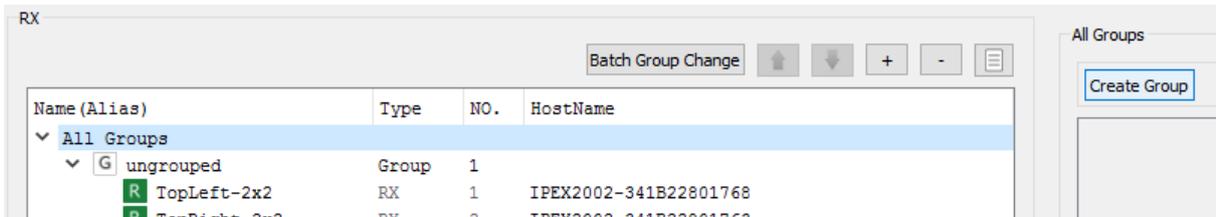


Create a Video Wall Group

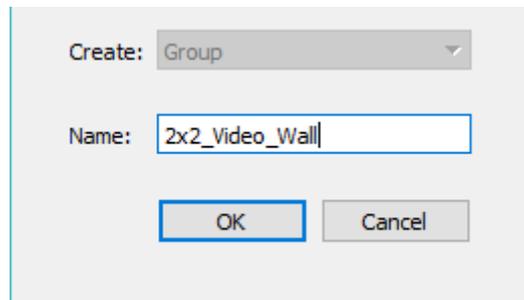
When building video wall systems, use proportional horizontal and vertical video wall system layout to avoid video stretching and image distortion. For example 2x2, 3x3, 4x4 etc.

Create a New Group

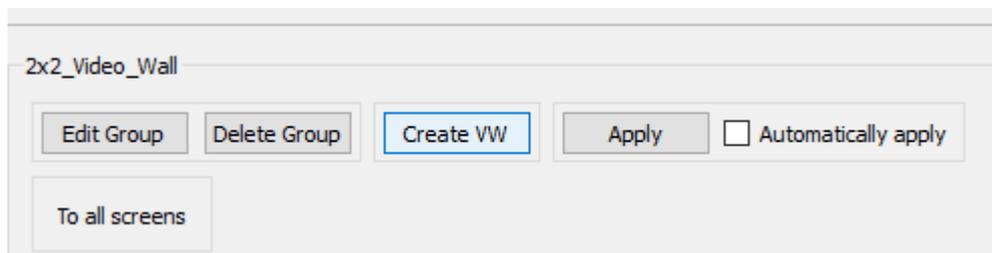
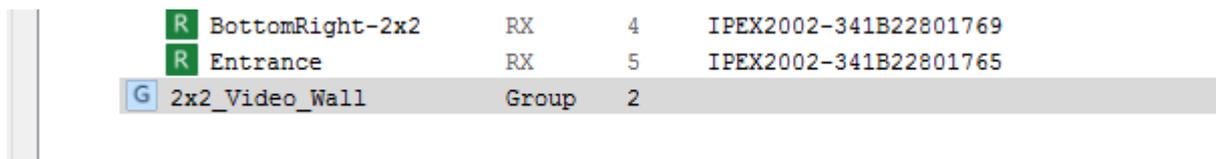
With *All Groups* selected on the left panel, click *Create Group* at the top of the middle panel.



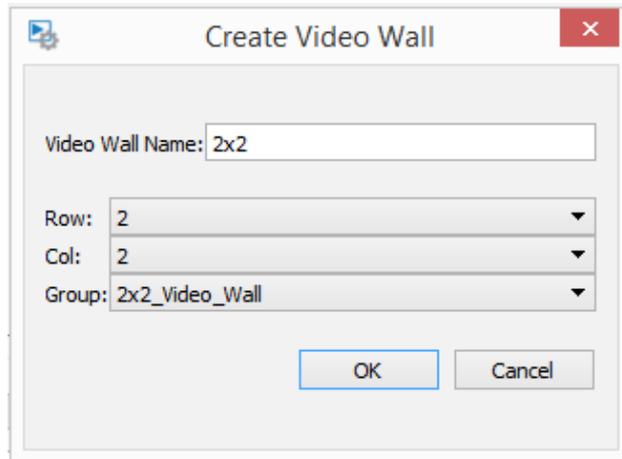
Provide a name for the new group, then click *OK*.



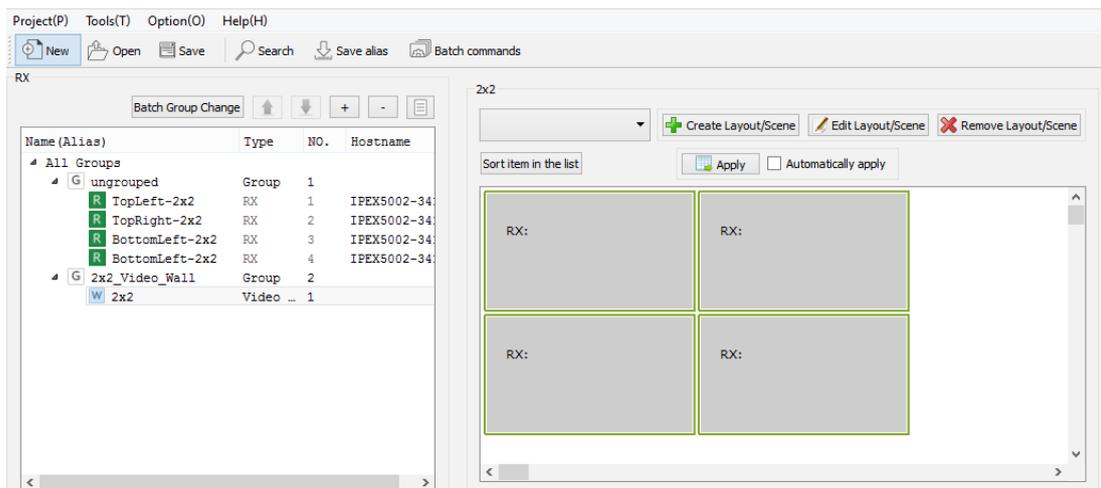
With the new group selected in the left panel, click the *Create VW* button at the top of the middle panel. This will create a new video wall configuration.



Select the number of rows and columns to be used in the matrix output or video wall configuration. There is a maximum of 16 rows and 16 columns per group. When naming the video wall, spaces and special characters are not allowed.

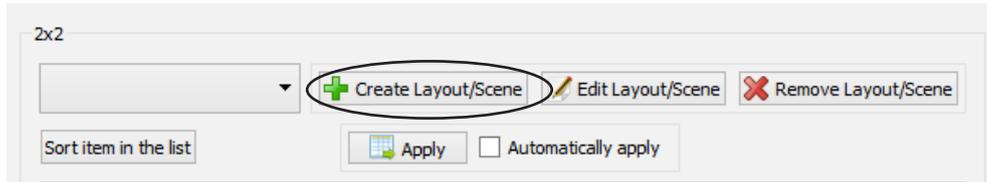


Click *OK* to create the video wall. The configuration will show up beneath the group that was just created and a visual representation will appear in the middle section of the Digi IP Configurator software.



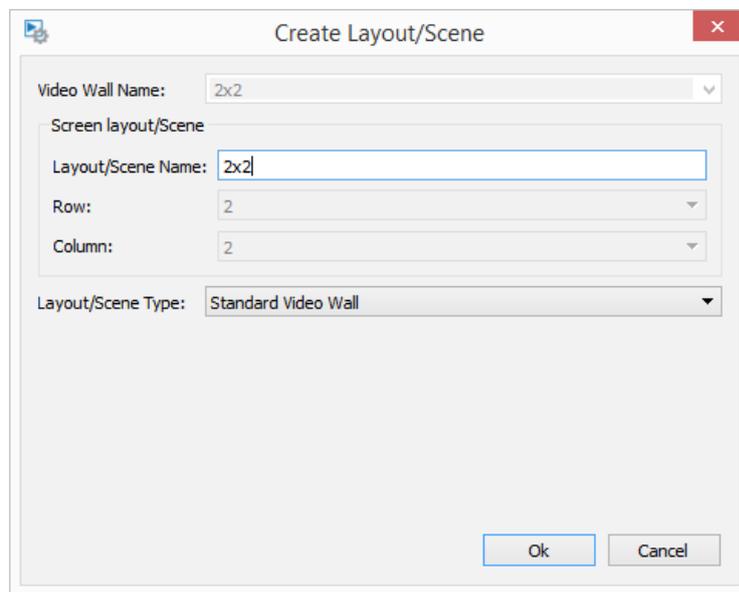
Create a Video Wall Layout

With the newly created video wall sub-group selected on the left panel, click *Create Layout/Scene* at the top of the middle panel.

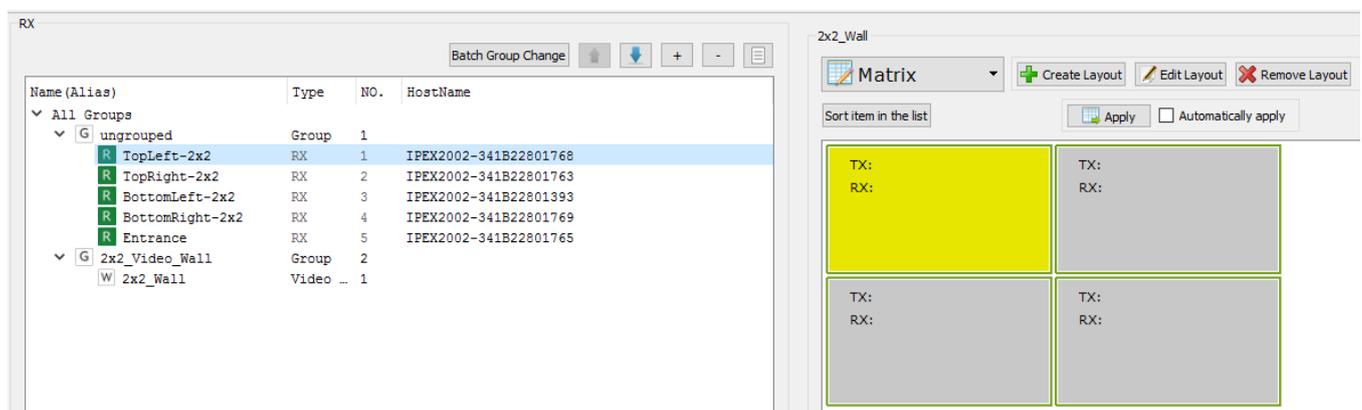


Enter a name for the layout under *Layout/Scene Name*, such as 2x2. Spaces and special characters are not allowed.

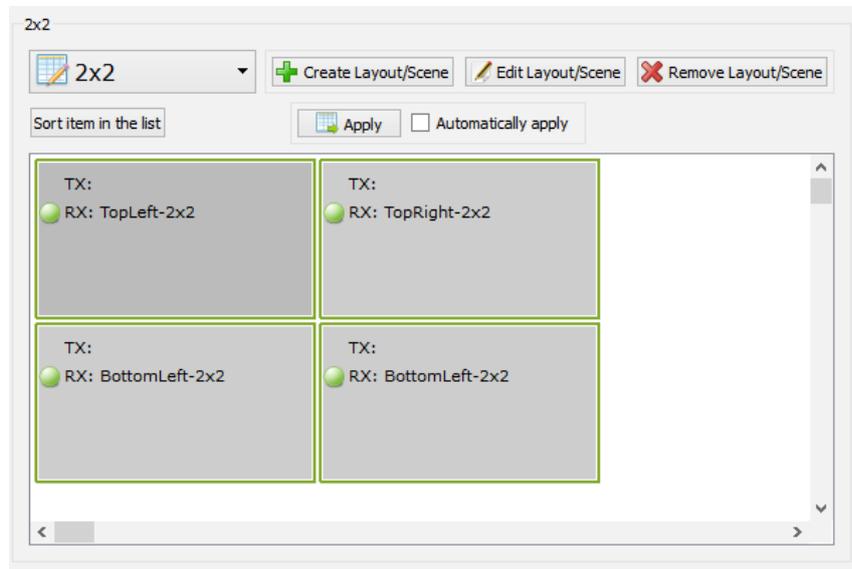
Make sure you are using the 'Standard Video Wall' option under 'Layout/Scene Type' then click *OK*.



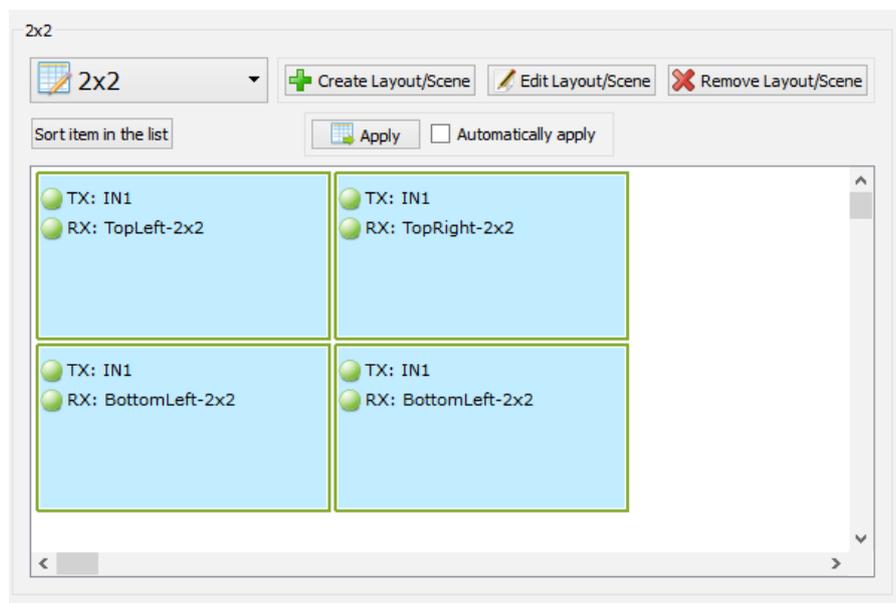
Drag and drop the decoders in the ungrouped section of the left panel to the respective display locations within the matrix layout by holding down left click on your mouse. As each decoder is assigned to a location, it will disappear from the ungrouped section and will then be re-assigned to the video wall group.



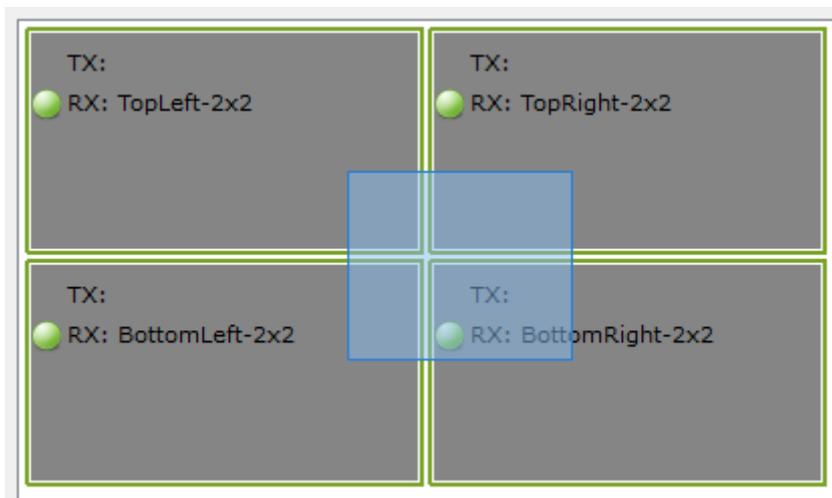
The RX portion of the visual representation will show the assigned decoders in each display slot.



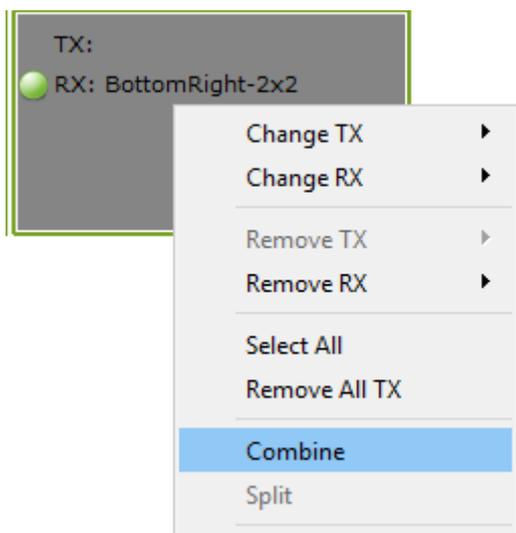
Repeat the process with the encoders to assign a predefined AV route whenever the current layout is selected. This step is optional and would not be used if dynamic video switching will be used.



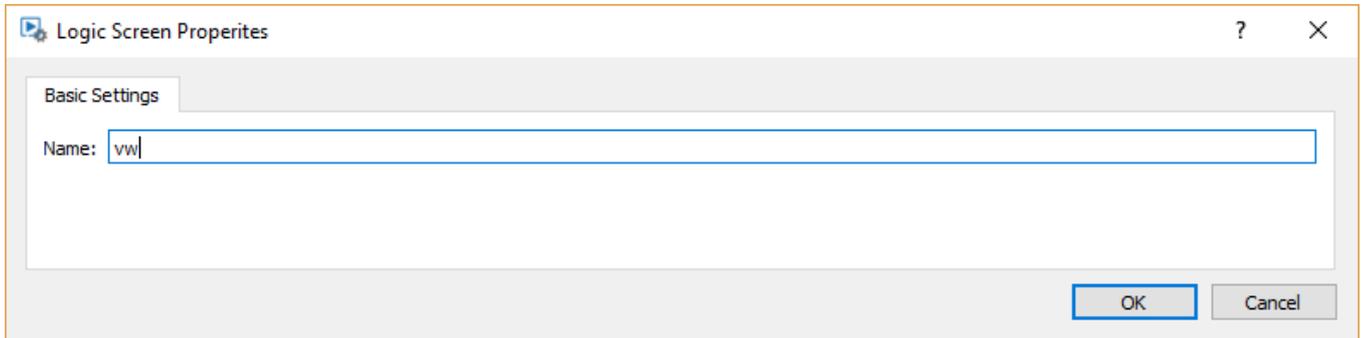
To adjoin the video wall display so one image will be displayed proportionally across the video wall, click and hold down the right mouse button over the upper far left display in the groups section and drag it to the bottom right display quadrant of the video wall.



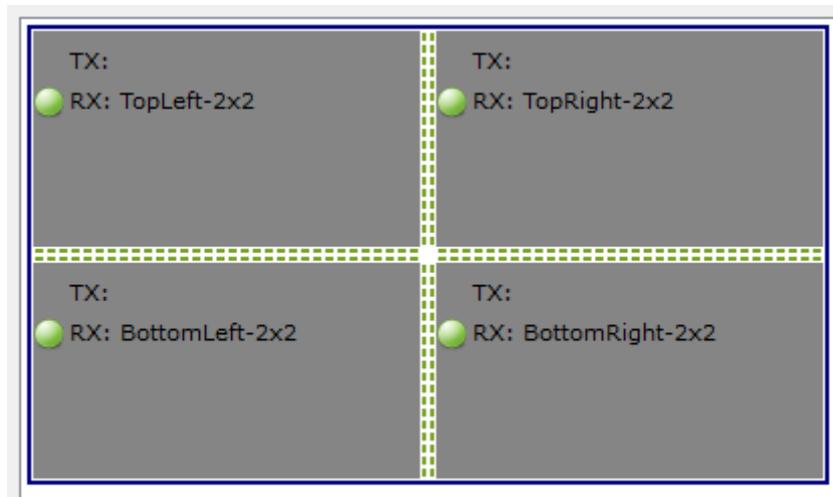
Release the right mouse button and click *Combine*.



Provide a simple name, such as *vw*, in the *Logic Properties* window, then click *OK*.

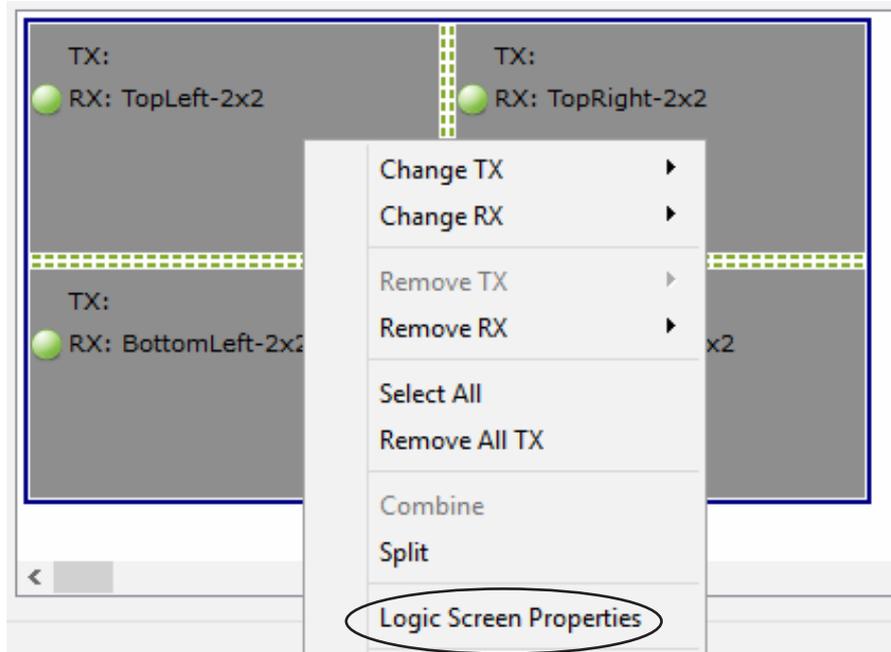


A blue line will surround the visual representation of the displays and a dotted line will separate each display, which indicates the configuration is a logical video wall.



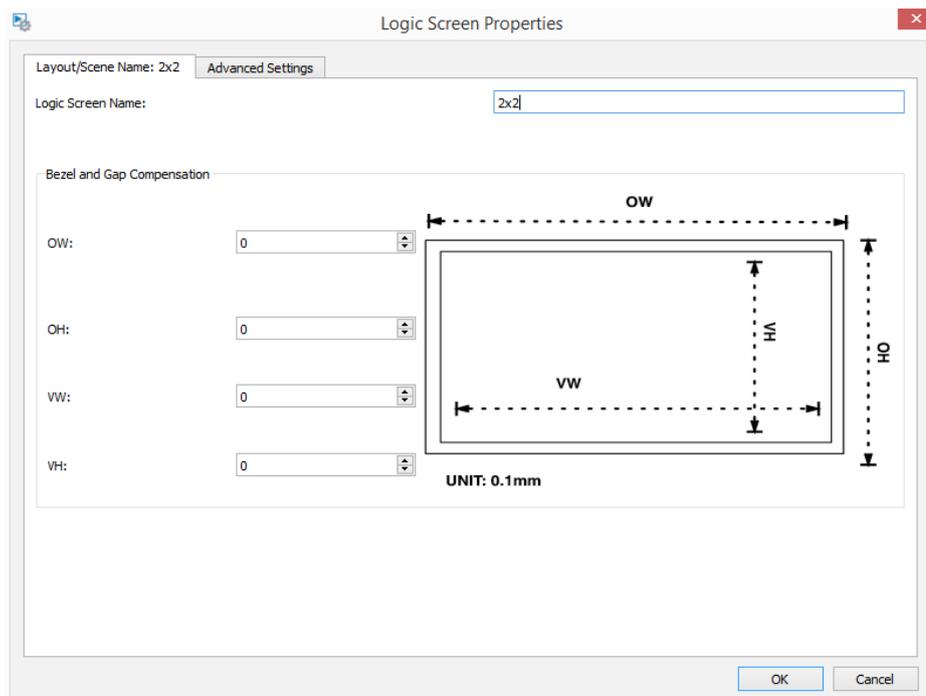
Video Wall Bezel Compensation (5000 series only)

To compensate for bezel size in a video wall, right click on the video wall group and select *Logic Screen Properties* from the menu.



The *Layout/Scene Name* tab allows the outside and viewable dimensions of the display to be configured to offset the image in order to maintain proper aspect ratios of the source content. The number values are referring to 0.1 mm increments.

Suppose a 43 inch LED TV has an 8 mm bezel with outside dimensions of 970 mm x 569 mm. The following values would be entered into the tab: OW = 9700, OH = 5690, VW = 9540, and VH = 5530.



The *Advanced Settings* tab allows correcting the video output on an individual display.

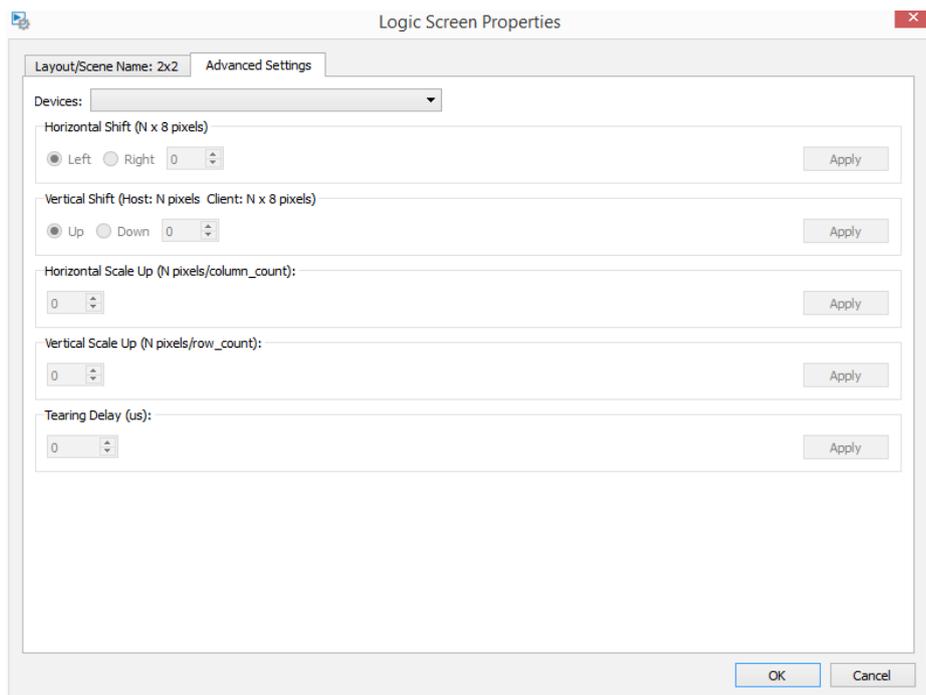
Horizontal Shift will shift the video image to the left or right. If the display is on the left edge of the video wall, the image cannot be shifted to the right. A single unit is 8 pixels.

Vertical Shift will shift the video image up or down. If the display is on the top edge of the video wall, the image cannot be shifted down. A single unit is 8 pixels.

Horizontal Scale Up will stretch or shrink the video image horizontally. The scale is one pixel per number of columns in the video wall.

Vertical Scale Up will stretch or shrink the video image vertically. The scale is one pixel per number of rows in the video wall.

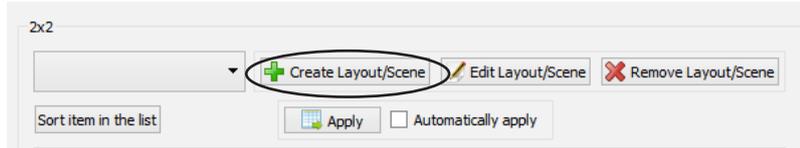
Tearing Delay is used to compensate for screen tearing and is applied when the source content covers the entire video wall. In a 3 x 3 video wall, the tearing delay would only affect a 3x3 video wall image. A 2 x 2 video wall image on the 3 x 3 wall will ignore the tearing correction. The values are defined in microseconds with typical values ranging between 10000 and 16000.



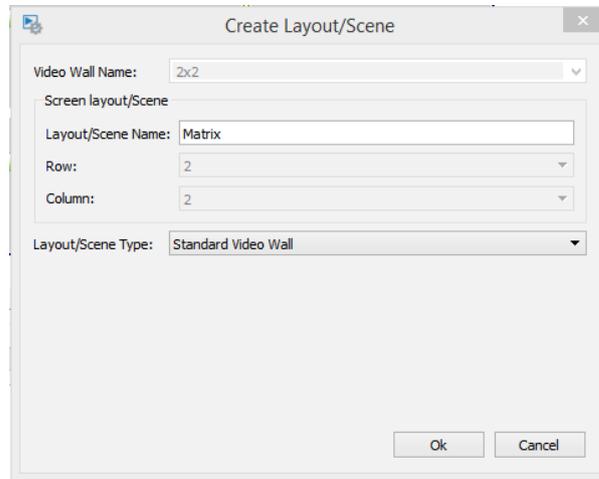
Create a Matrix Layout within Video Wall Group

When a video wall group is created and a decoder is assigned to each display within the video wall, you have the ability to build a matrix system layout within the video wall group.

With the video wall sub-group selected on the left panel, click *Create Layout/Scene* at the top of the middle panel. The video wall visual representation should also be seen in the middle panel.

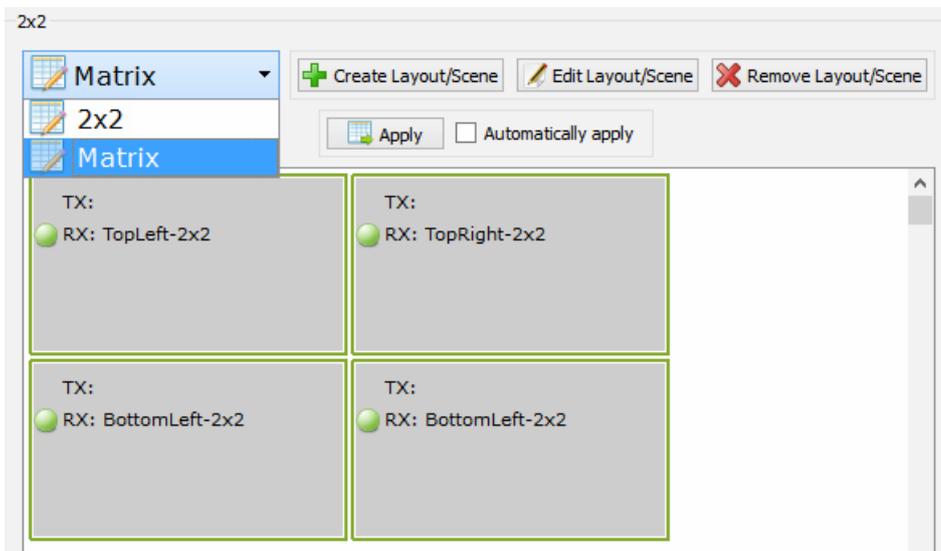


Enter a name for the matrix, such as *Matrix*, make sure the *Standard Video Wall* option is selected under the *Layout/Scene Type* option, then click *OK*.



Verify Group Layouts

Clicking the dropdown list at the top of the middle section with the video wall group selected will show all layouts that have been created.

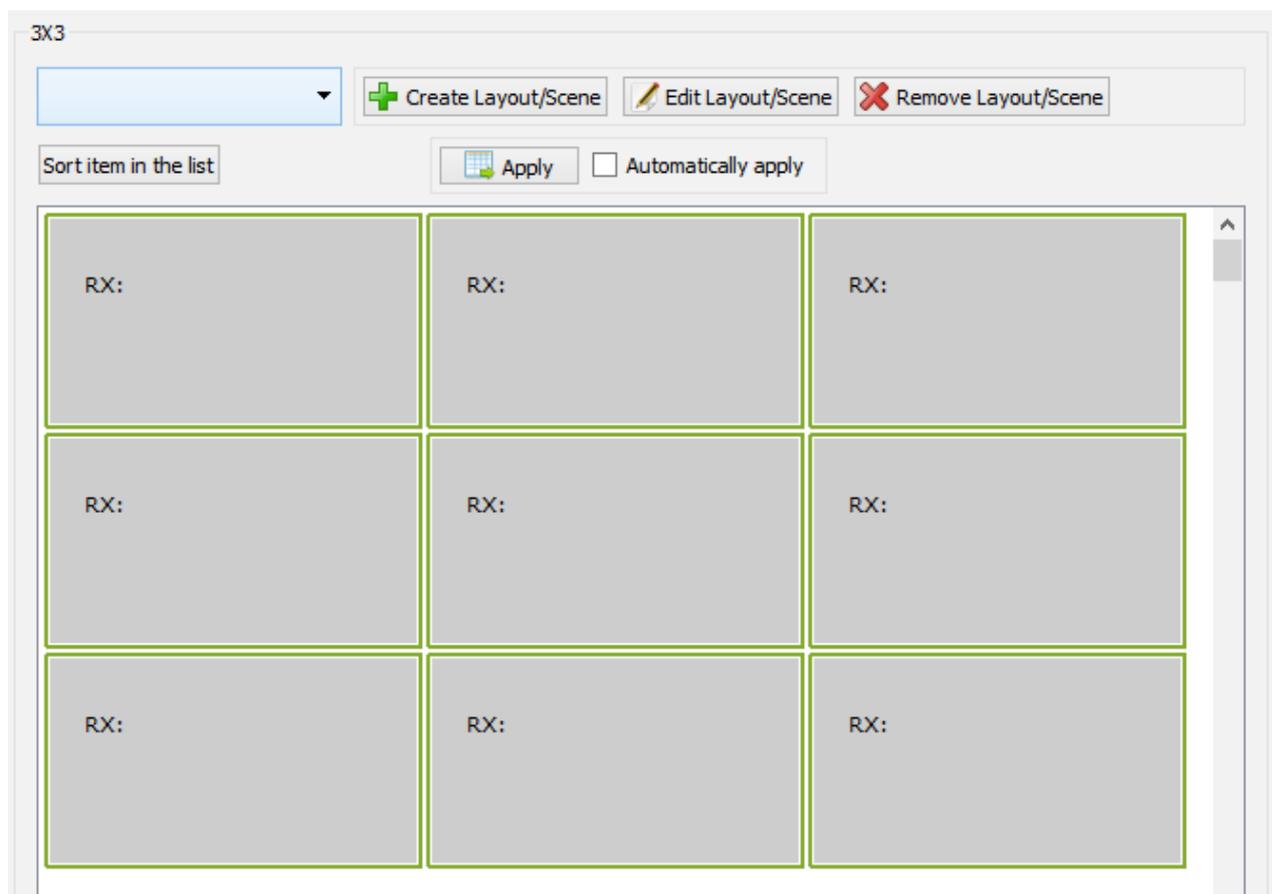


Creating Combination Layouts for Large Video Wall Groups

When a video wall group is created and a decoder is assigned to each display within the video wall, you have the ability to build a combination video wall / matrix system layout within larger video wall systems such as 3x3, 4x4 and beyond.

In our example we will create a 2x2 video wall quadrant to the upper right of the 3x3 video and designate the remainder of the displays in the video wall system for matrix video routing.

Create a video wall group labeled 3x3 and assign the appropriate decoders to the appropriate video wall quadrant locations. For instructions on creating a video wall configuration, see page 14 **Creating a Video Wall Group**

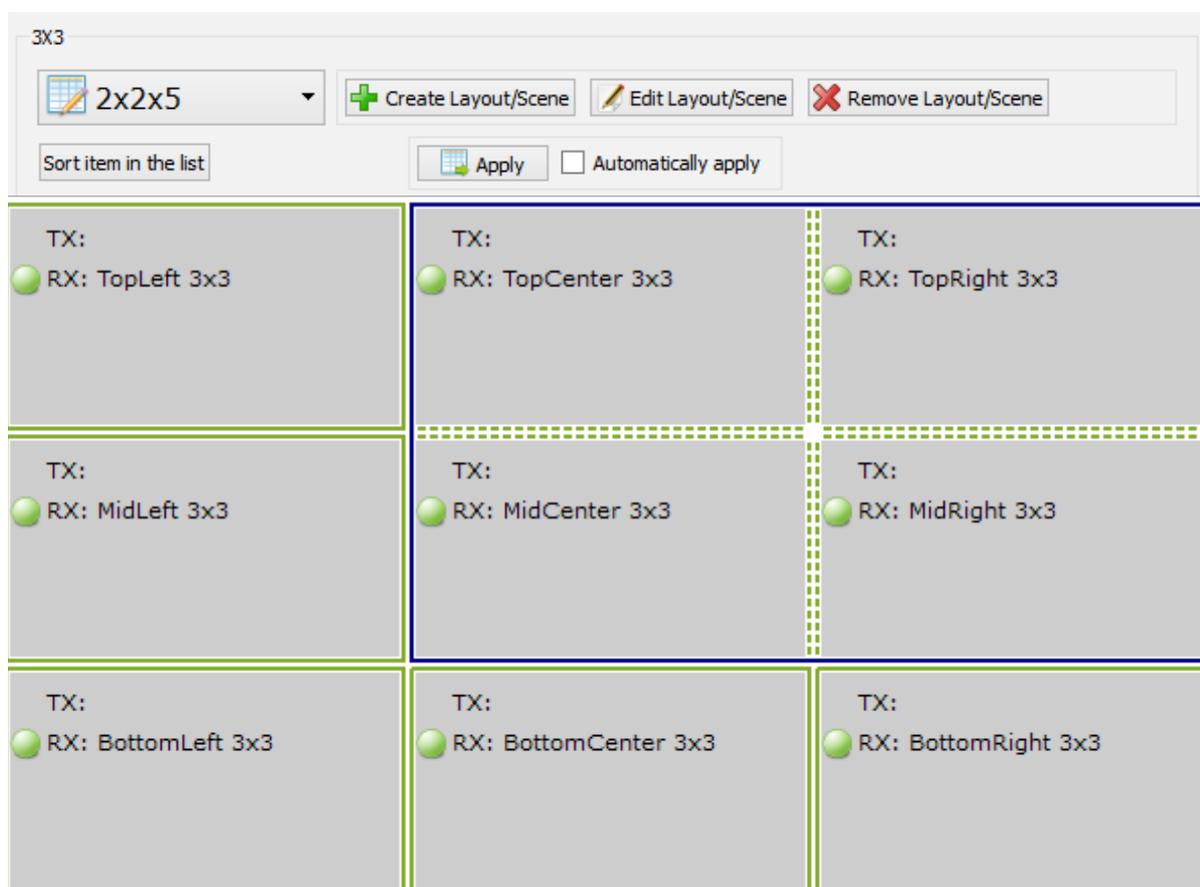


With the video wall sub-group selected on the left panel, click *Create Layout/Scene* at the top of the middle panel. The video wall visual representation should also be seen in the middle panel.

Create a video layout labeled 2x2x5. For instructions on creating a video wall group, see *Create a Video Wall Layout* on page 27.

Combine the top four displays in upper right hand corner of the video wall configuration in the groups section. For instruction on how to combine displays for a video wall configuration see page 18.

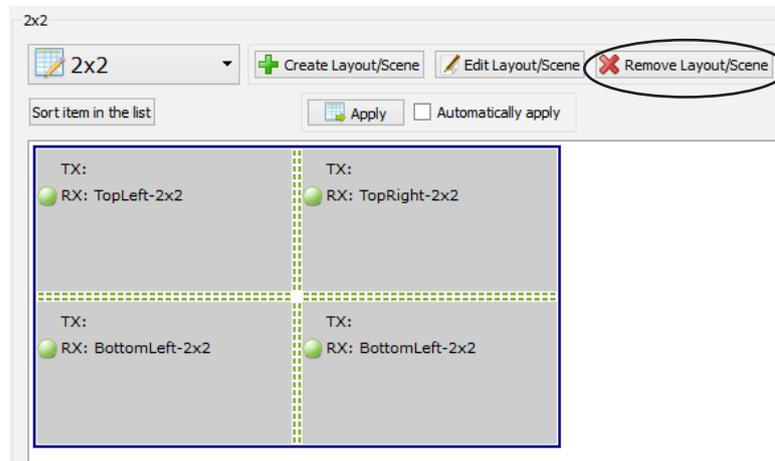
You now have a 2x2 system with 5 displays operating in matrix mode within the 3x3 video wall configuration.



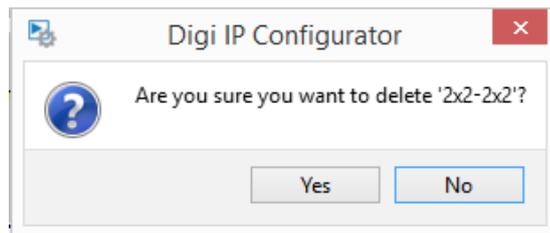
Remove a Video Wall Layout

Remove a Layout

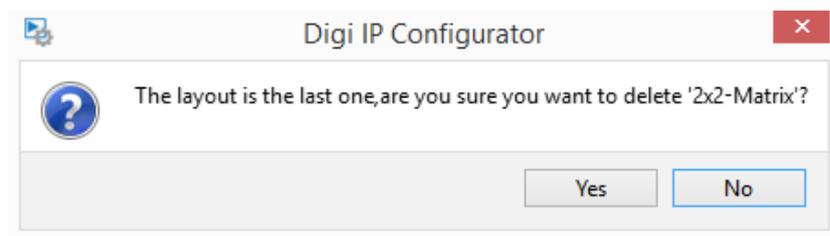
To remove a layout, click the *Remove Layout/Scene* button with a valid video wall selected.



A confirmation window will open to confirm the deletion of the layout.

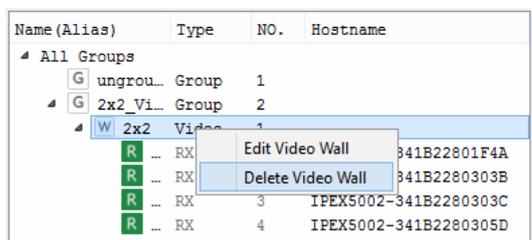


If this is the last layout for the video wall, another confirmation window will open to confirm the final deletion.

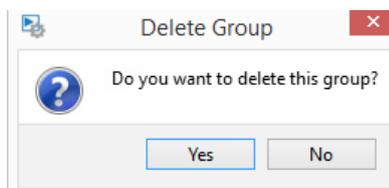


Remove a Video Wall

To remove a video wall layout, right click on the name of the video wall in the window to the left, and click *Delete Video Wall*.



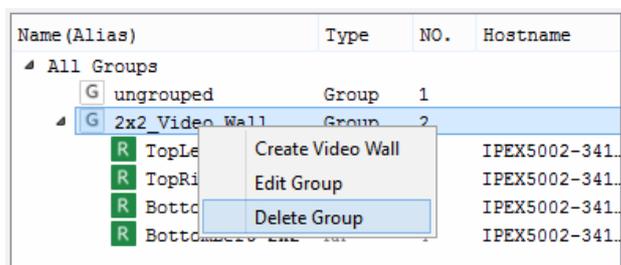
A confirmation window will open to confirm the deletion of the video wall.



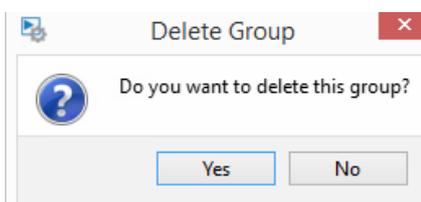
After the video wall is deleted, the video wall reference will be removed from the group.

Remove a Group

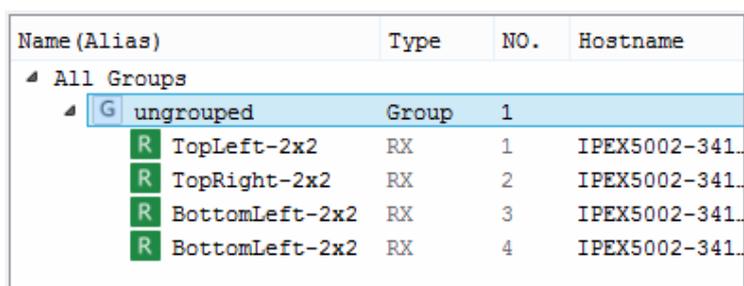
To remove a video group, right click on the name of the group, and click *Delete Group*.



A confirmation window will open to confirm the deletion of the video group.



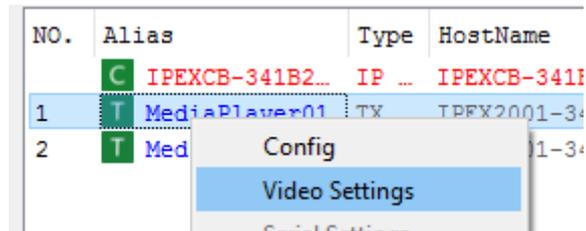
After the group is deleted, all assigned encoders will be moved to the *ungrouped* group.



2000/2100 Series Advanced Device Settings

IPEX2001 / IPEX2101 - Video Settings

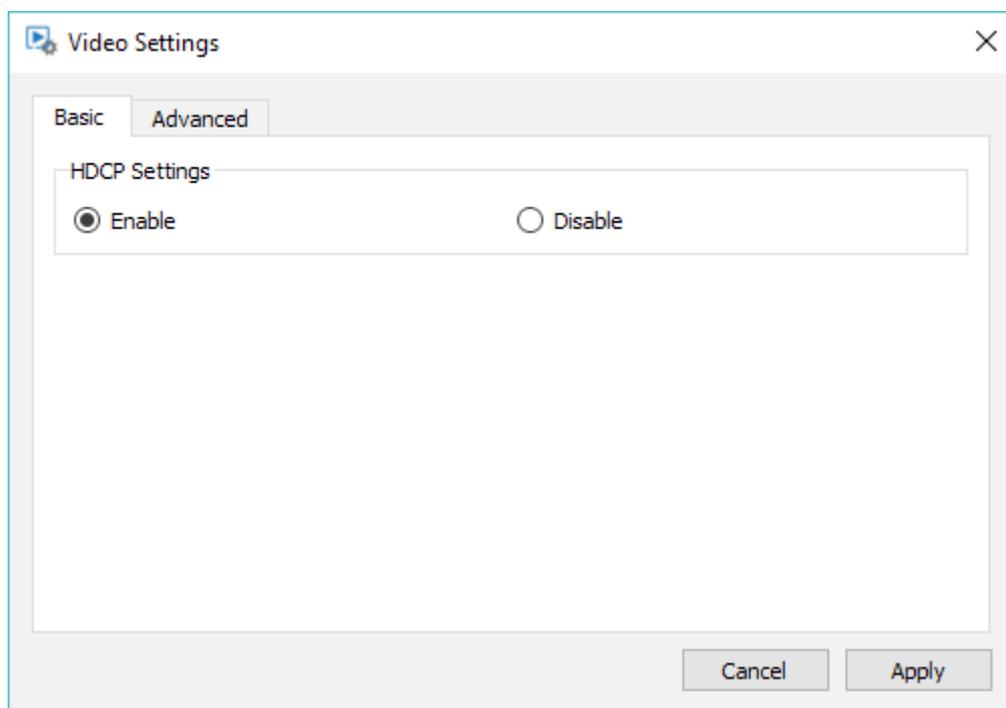
To configure the video settings of an IPEX2001, right click on the name of the encoder and select *Video Settings*.



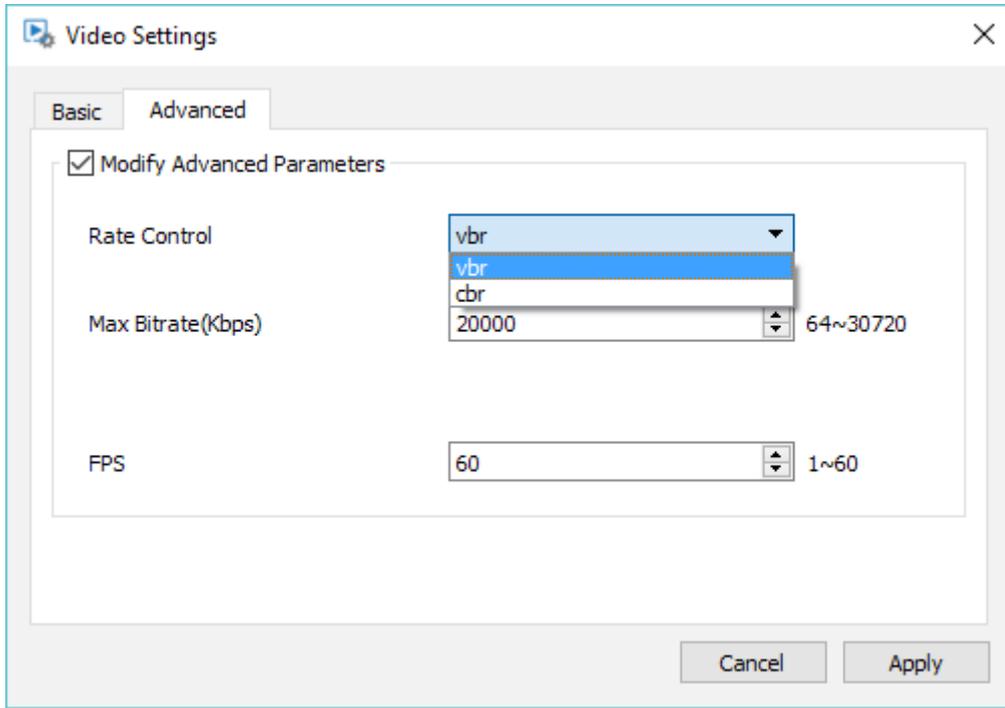
NO.	Alias	Type	HostName
	C IPEXCB-341B2...	IP ...	IPEXCB-341F
1	T MediaPlayer01	TX	IPEX2001-34
2	T Med		1-34

Context menu options: Config, Video Settings, Serial Settings

In the *Basic* tab, tick the *Enable* or *Disable* radio button under *HDCP Settings* to change the video encryption mode of the source device.

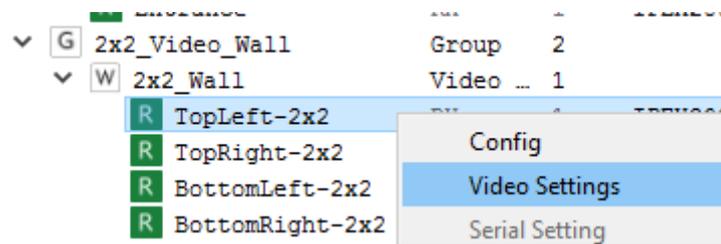


In the *Advanced* tab, tick the *Modify Advanced Parameters* box to access different methods to adjust the bandwidth and quality of the source signal.

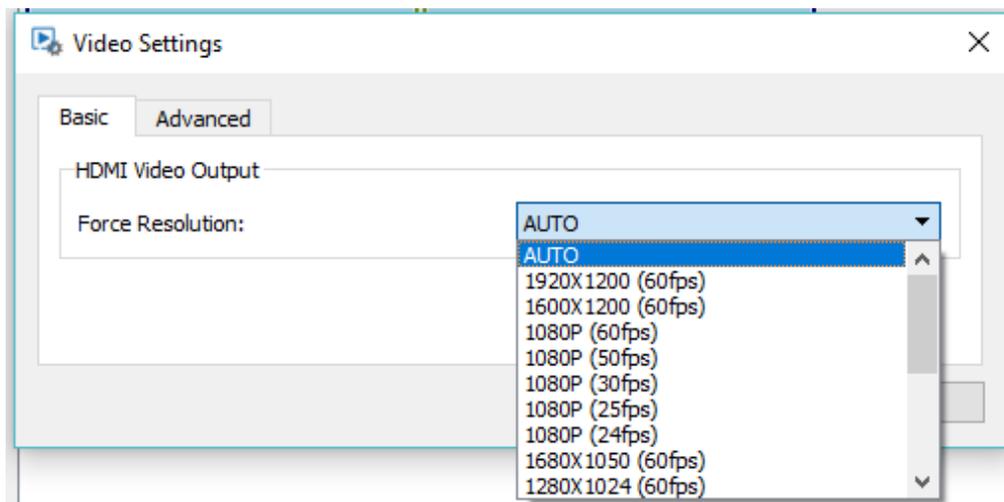


IPEX2002 / IPEX2102 - Video Settings

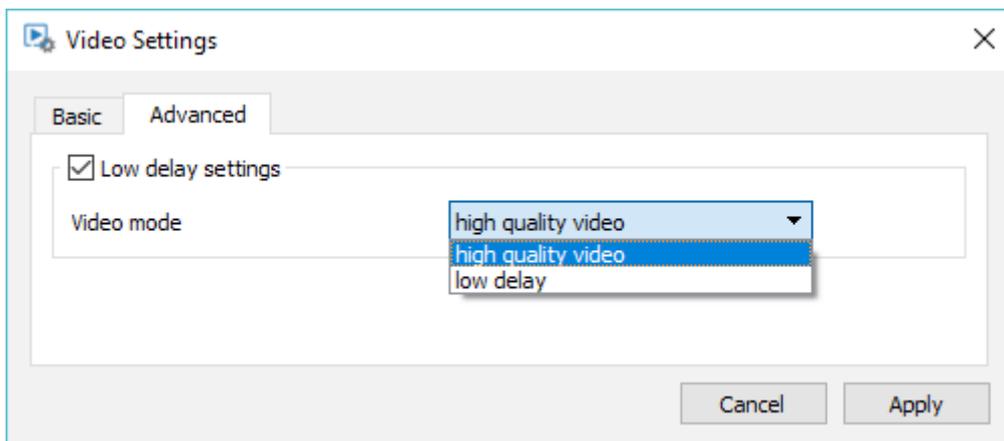
To configure the video settings of an IPEX2002, right click on the name of the encoder and select *Video Settings*.



The *Basic* tab allows specifying a specific output resolution for a connected display.



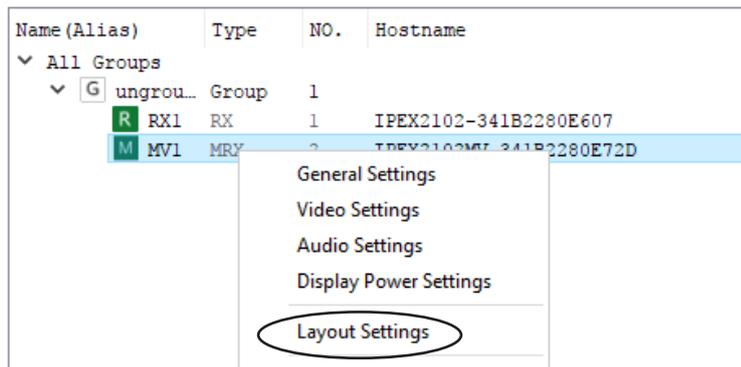
In the *Advanced* tab, tick the Low delay settings box to choose between high quality video with a longer delay or low delay with lower video quality.



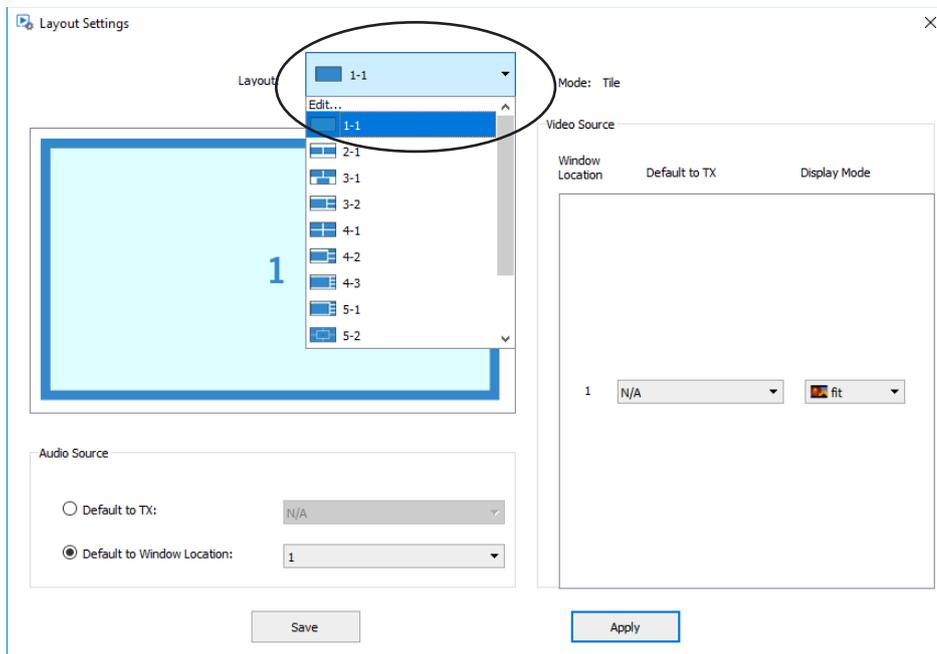
IPEX2102MV - Audio / Video Multi-Viewer Settings

The IPEX2102MV devices settings can be configured the same as the IPEX2102 decoder so see prior section for device settings.

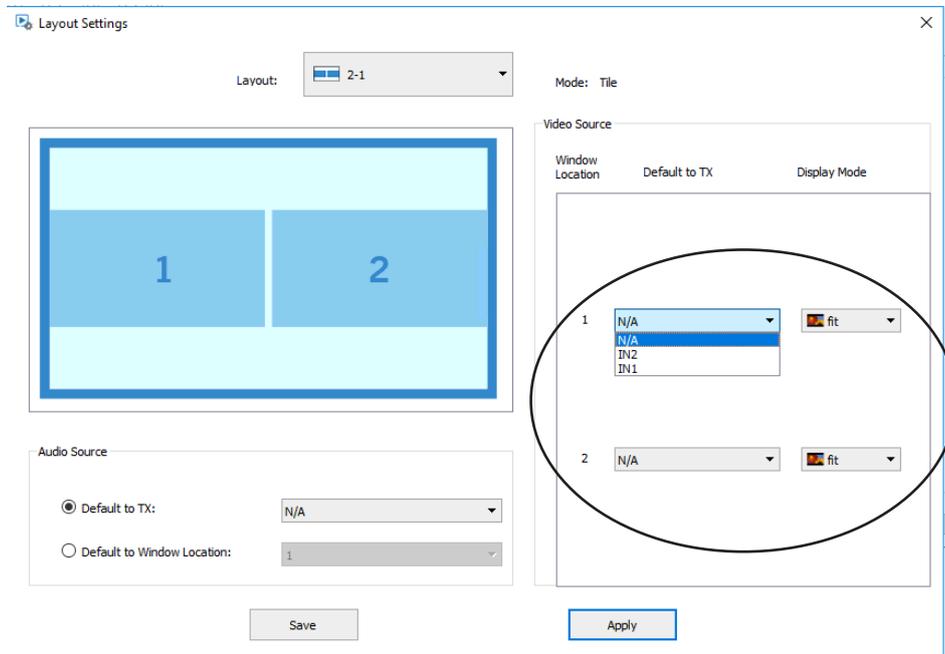
To test, build and store preset multi-viewer layout settings so they can be accessed by the Digi IP iOS Control APP or with a 3rd party control system using the systems API, right click the device in the software and click on *LAYOUT SETTINGS*



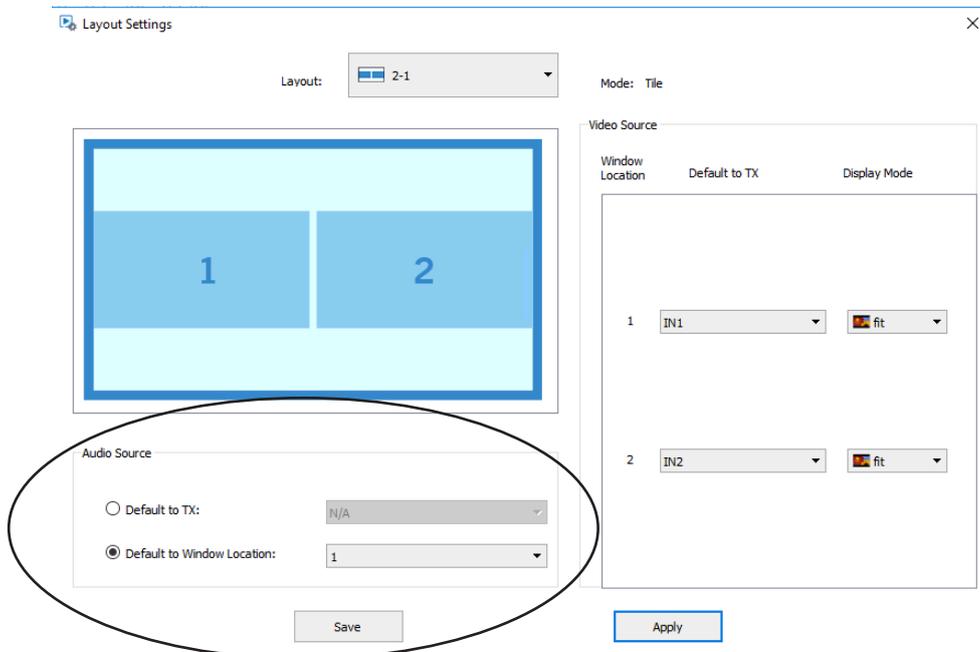
A pop up window will be appear, click the drop down menu under *LAYOUT* to choose a preset tile layout



In the example below the 2-1 multi-viewer tile layout was selected. To assign encoders to the window location in the layout, use the drop down menus to select the desired encoder from the *Video Source* section.

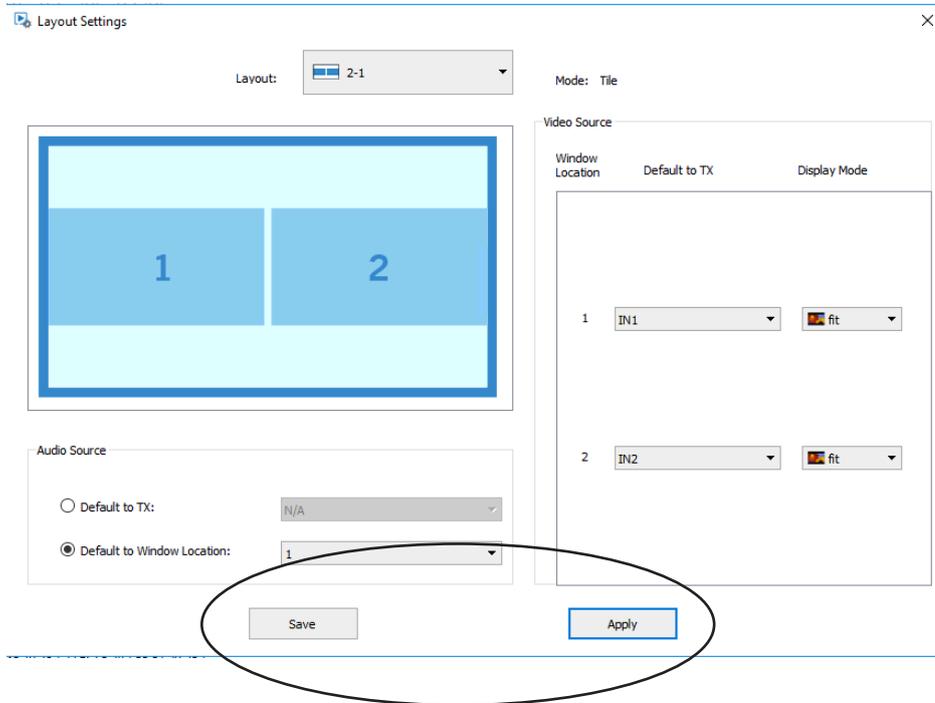


To choose the decoders default audio output signal (HDMI and de-embed output) when using a multi-view layout, choose from either *Default to TX* or *Default to Window Location*, in the *Audio Source* menu. Choose an encoder in the drop down menu when using the *Default to TX* option, choose a window location number in the drop down menu when using the *Default to Window Location*.



To test the current settings, click *APPLY*. To save the settings to the 2-1 layout, click *SAVE*

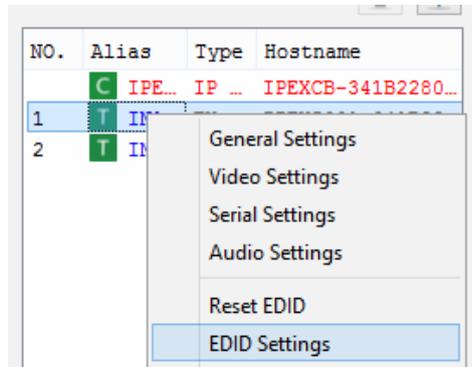
These static settings will be recalled when choosing this layout in the Digi IP Control iOS APP or with the appropriate API commands.



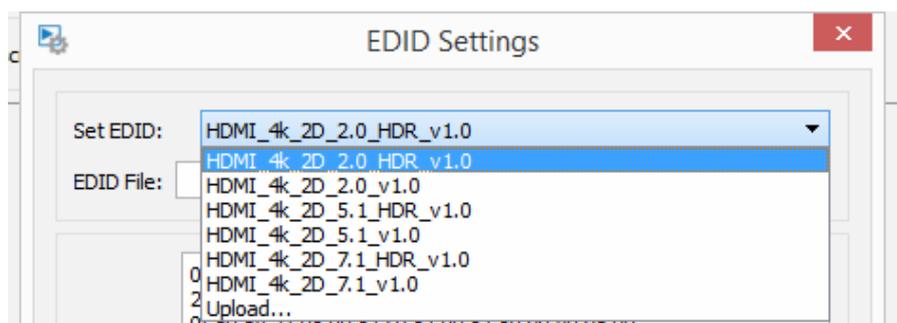
5000 Series Encoder Advanced Settings

EDID Settings

To define the EDID settings of an IPEX5001, right click on the name of the encoder and select *EDID Settings*



Select one of the built-in EDID files to determine the audio and video settings for the source, then click *Apply*

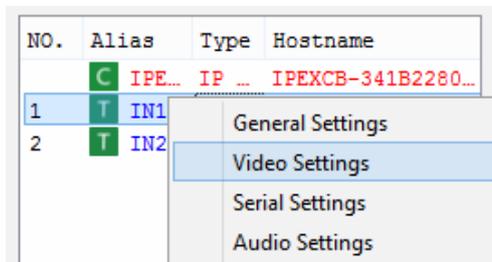


Explanation of EDID files:

- *HDMI_4K_2D_2.0_.HDR_v1.0* - 4K with HDR support / 2 Channel Stereo
- *HDMI_4K_2D_2.0_.v1.0* - 4K no HDR support / 2 Channel Stereo
- *HDMI_4K_2D_5.1_.HDR_v1.0* - 4K with HDR support / 5.1 Surround
- *HDMI_4K_2D_5.1_v1.0* - 4K no HDR support / 5.1 Surround
- *HDMI_4K_2D_7.1_.HDR_v1.0* - 4K with HDR support / 7.1 Surround
- *HDMI_4K_2D_7.1_v1.0* - 4K no HDR support / 7.1 Surround
- *Upload* - Option to upload custom EDID file

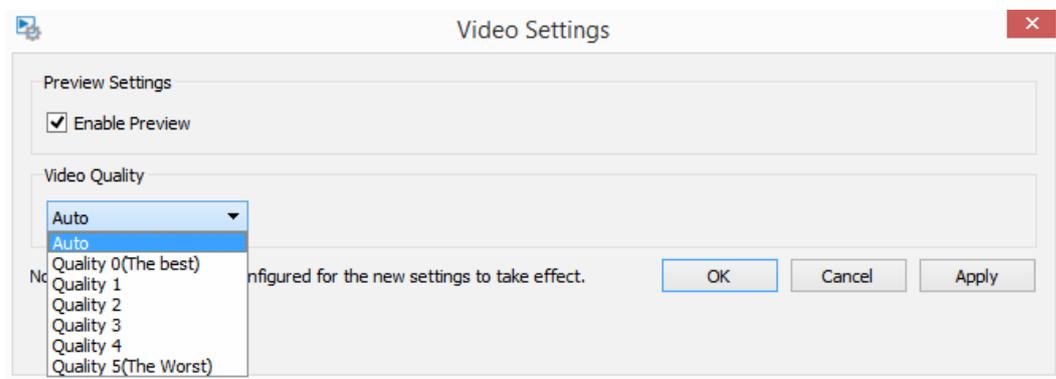
Video Settings

To configure the video quality settings of an IPEX5001, right click on the name of the encoder and select *Video Settings*.



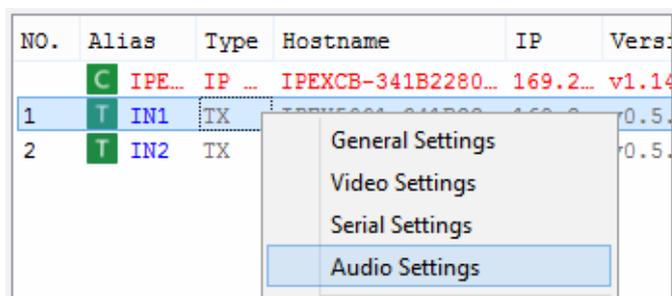
Choose a video quality settings from the *Video Quality* drop down menu, then click *Apply*.

To enable the preview of the video stream of the IPEX5001, tick the *Enable Preview* field and click *Apply*.



Audio Settings

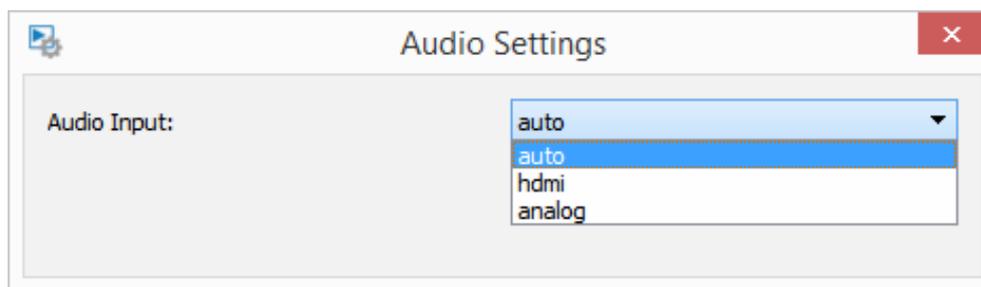
To set the default audio stream of an IPEX5001, right click on the name of the encoder and select *Audio Settings*.



Choose the default audio stream / input for the IPEX5001 encoder, then click *Apply*.

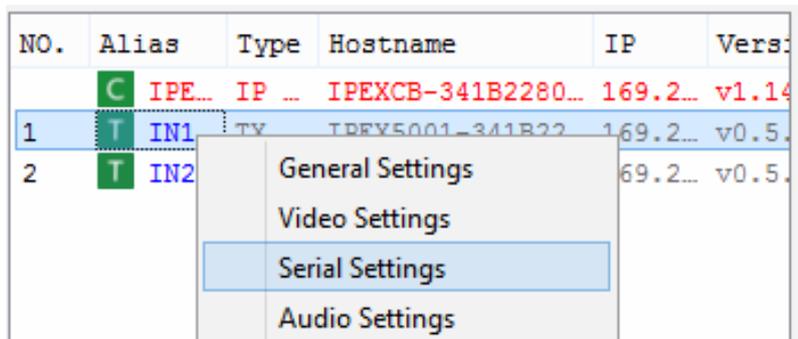
When choosing the *auto setting*, the audio stream will be automatically selected, when choosing the *hdmi* setting, the default audio stream will be the embedded HDMI audio stream and when choosing *analog*, the default audio stream will generate from the 3.5mm analog audio input on the IPEX5001.

Note: when using the analog option, the EDID setting for the encoder must be set to a stereo audio EDID setting. See page 30 for IPEX5001 EDID settings



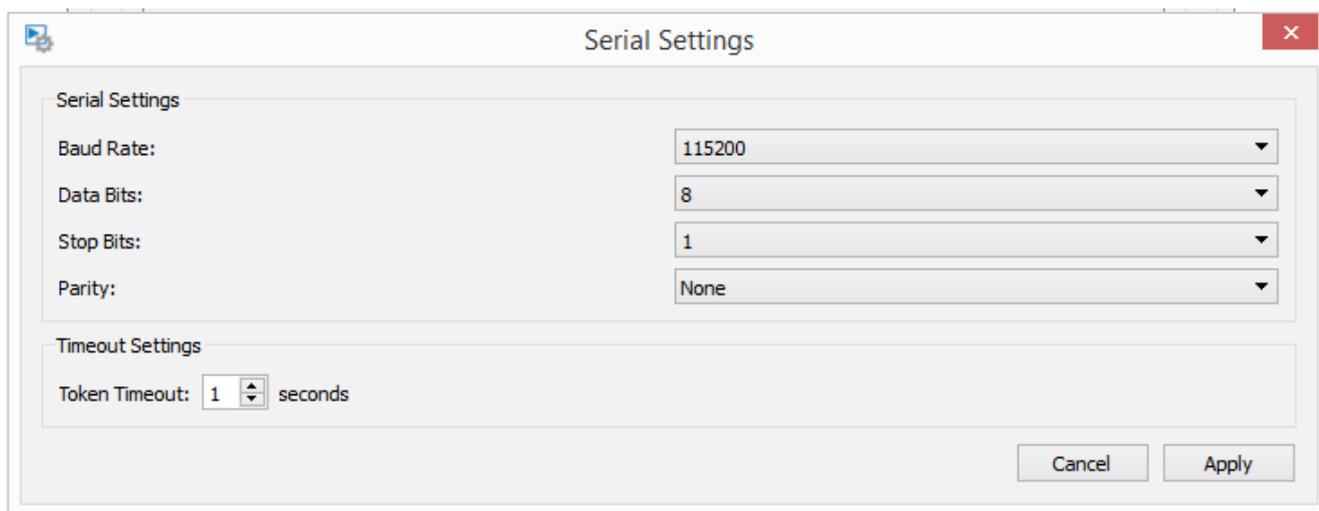
RS232 (Serial) Settings

To configure the serial settings of an IPEX5001 RS232 port, right click on the name of the encoder and select *Serial Settings*.



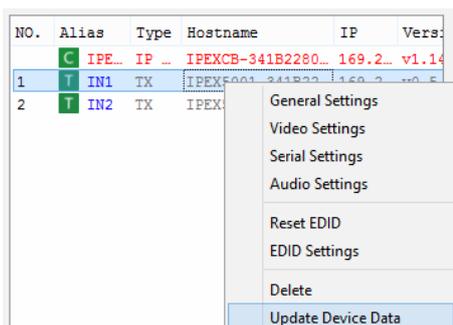
Choose the desired settings for the serial port by using the drop down menus, then click *Apply*.

Timeout settings for the serial port can also be applied here by choosing the token timeout under *Timeout Setting*, then click *Apply*.



Refreshing Device Info

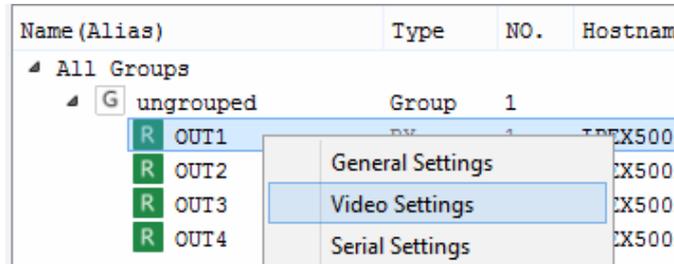
To refresh the devices current configuration settings, right click the encoder of choice and click on *Update Device Data*



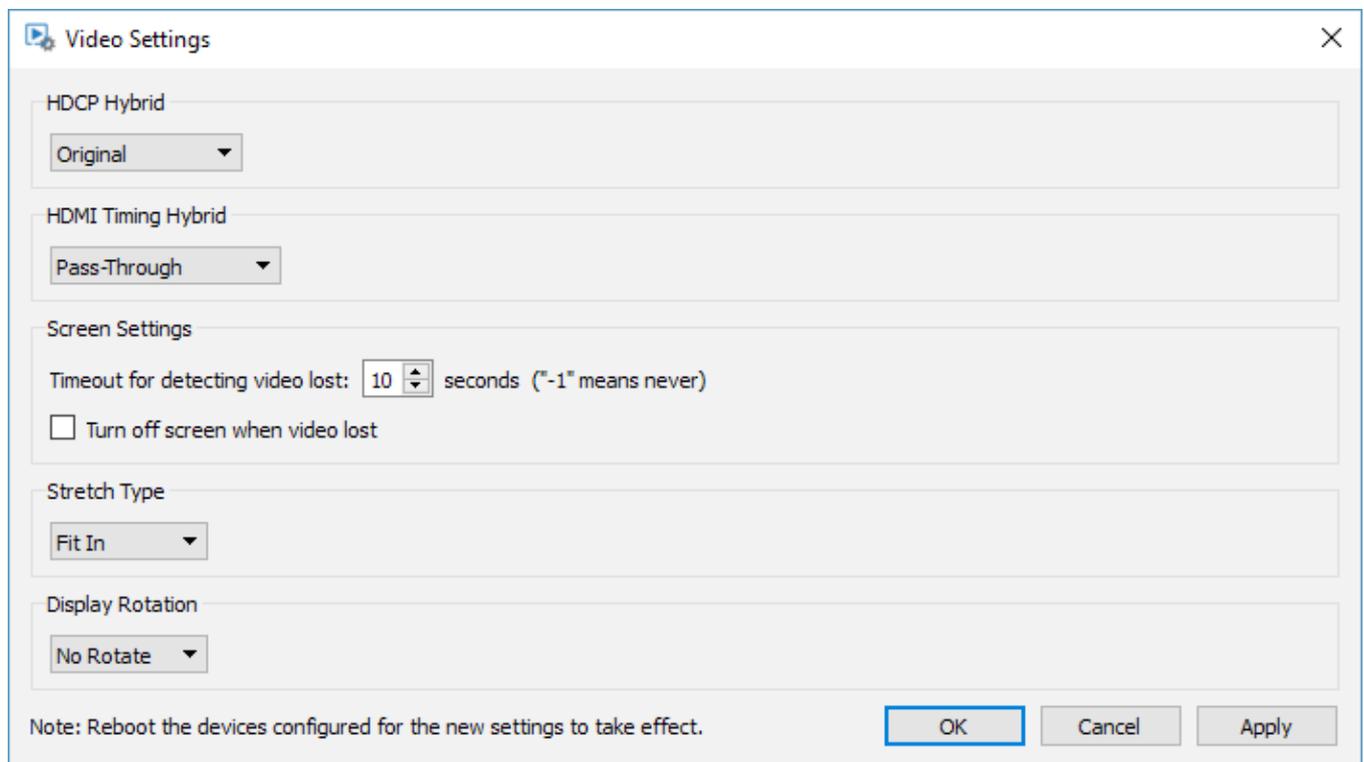
5000 Series Decoder Advanced Settings

Video Settings

To configure the video settings of an IPEX5002, right click on the name of the decoder and select *Video Settings*.



Some of the options in the *Video Settings* window are HDCP output type, video output resolution, no video behavior, and screen rotation. In order for the changes to take effect, the IPEX5002 must be restarted.



The *HDCP Hybrid* options allow setting the output HDCP settings to match the original content, force HDCP 1.x mode, or force HDCP 2.2 mode.

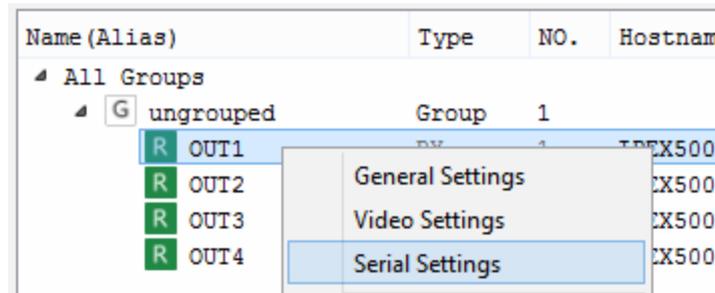
The *HDMI Timing Hybrid* options define the output video resolution of the IPEX5002. Pass-Through will bypass the scaling function of the decoder.

The *Screen Settings* options define timeout out for lost video, video stretch type and display rotation orientation.

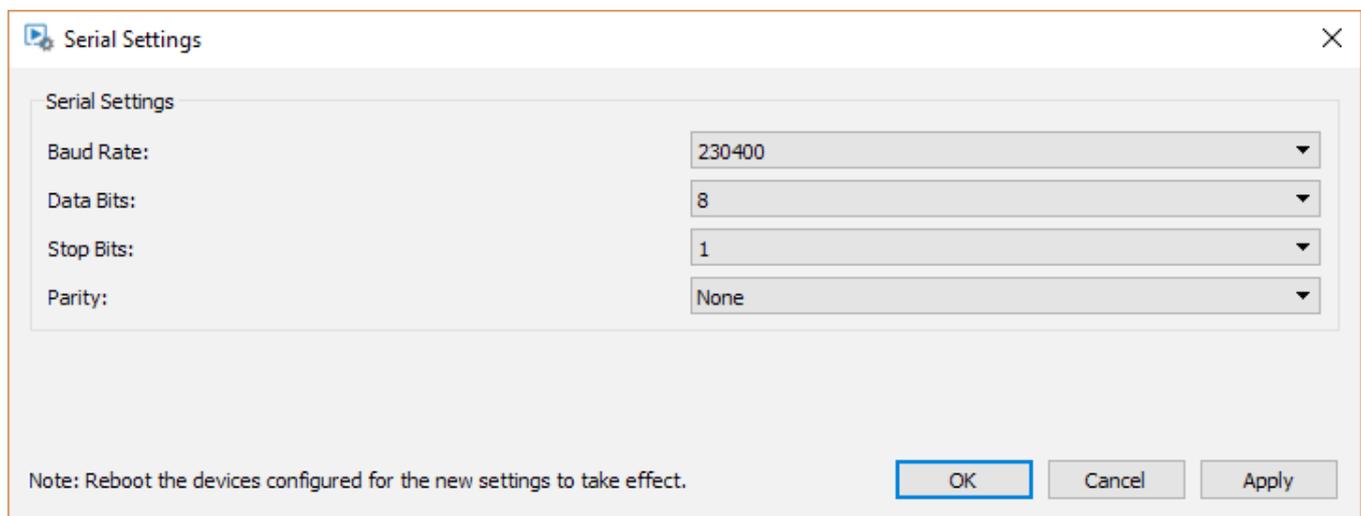
Once menu has been defined, click *Apply* then *OK*

RS232 (Serial) Settings

To configure the serial settings of the IPEX5002 RS232 port, right click on the name of the encoder and select *Serial Settings*.



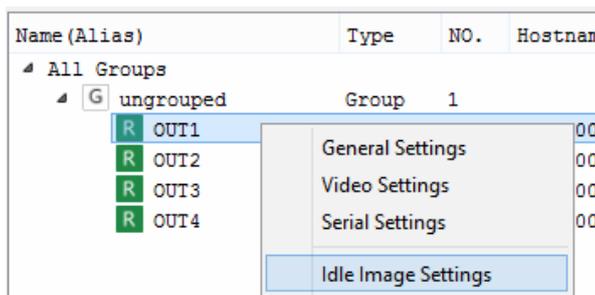
Choose the desired settings for the serial port by using the drop down menus, then click *Apply*.



Idle Image / Splash Screen Settings

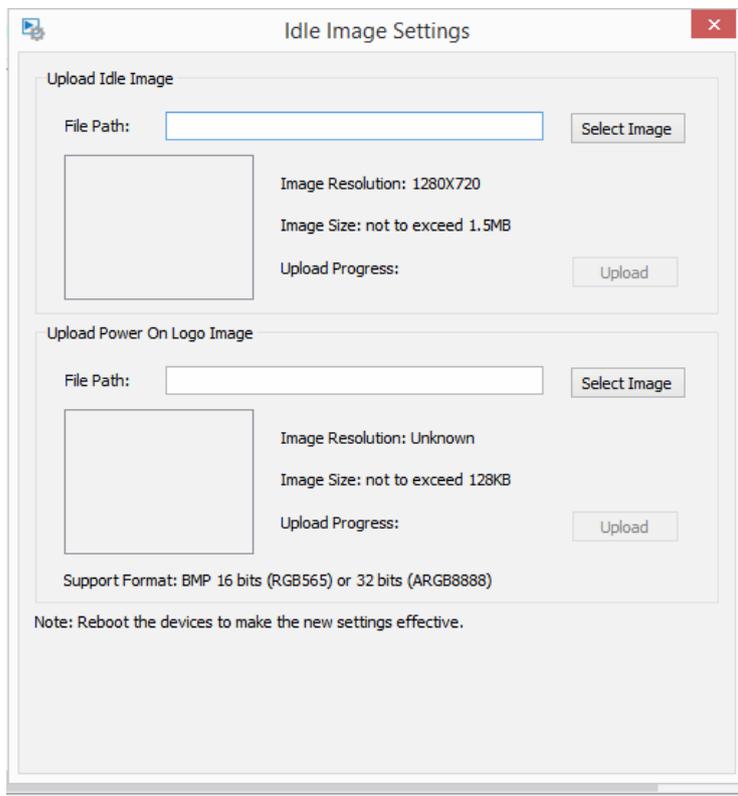
The power on screen and idle image screen can be customized for each encoder. The idle image screen will appear when there is no active video signal streaming through the encoder, the power on screen will appear when the encoder boots up.

To configure the idle image settings of an IPEX5002, right click on the name of the encoder and select *Idle Image Settings*.



To update the *Idle Image* of the encoder click *Select Image* to browse for an image file on your computer to load, then click *Upload*

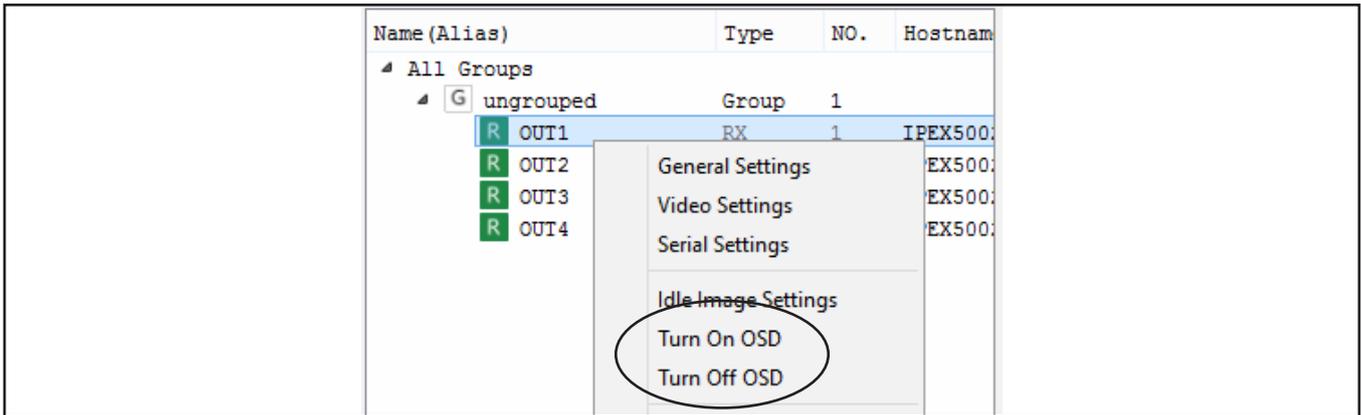
To update the *Power On Logo* of the encoder click *Select Image* to browse for an image file on your computer to load, then click *Upload*



OSD (On Screen Display) Settings

To help identify which decoder is connected to a display in the field, an On Screen Display (OSD) option can be turned on or off. When the OSD is on, the alias of the decoder will be displayed on the screen connected to the decoder

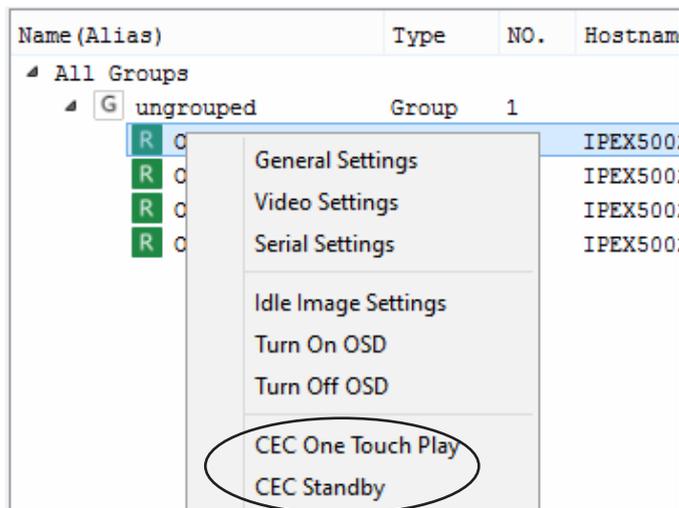
To set the OSD either on or off on an IPEX5002, right click on the name of a decoder and select either *Turn On OSD* or *Turn Off OSD*.



CEC Settings

To test CEC display POWER ON functionality of a CEC enabled display connected to the IPEX5002 decoder, right click on the name of the decoder and select *CEC One Touch Play* to test the POWER ON functionality of the display.

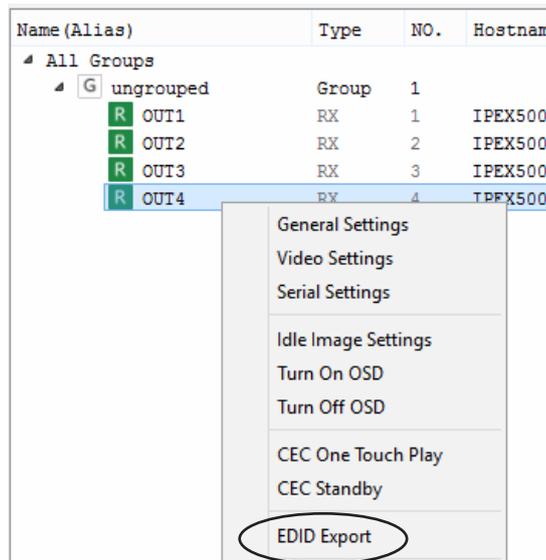
To test CEC display POWER OFF functionality of a CEC enabled display connected to the IPEX5002 decoder, right click on the name of the decoder and select *CEC Standby* to test the POWER OFF functionality of the display.



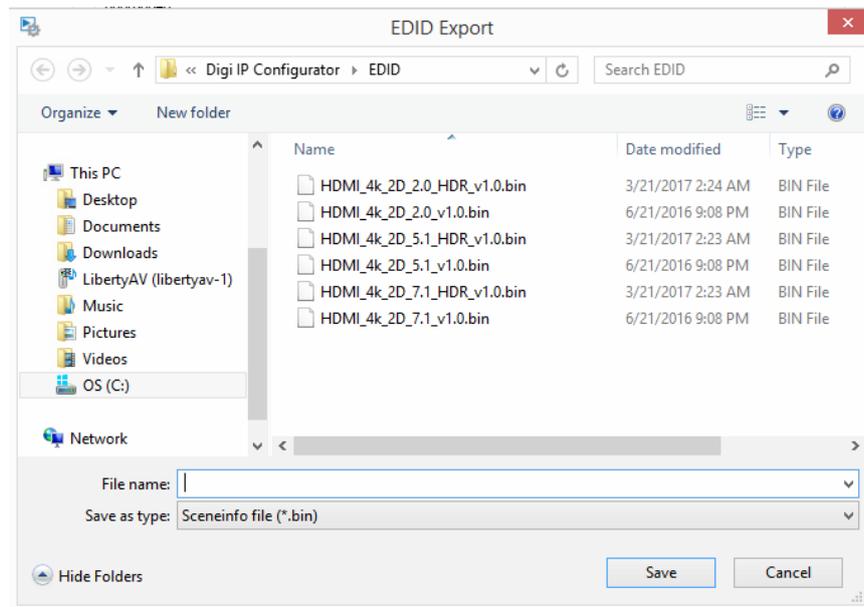
Exporting EDID Settings

DigitalinxIP encoders EDID settings can be set to the displays native EDID settings by exporting the EDID from a display connected to a decoder then selecting the EDID file in the EDID settings of the IPEX5001 encoder.

To export the EDID settings of a display connected to a IPEX5002, Make sure the display connected to the decoder is turned ON, then right click on the name of the encoder and select *EDID Export*.

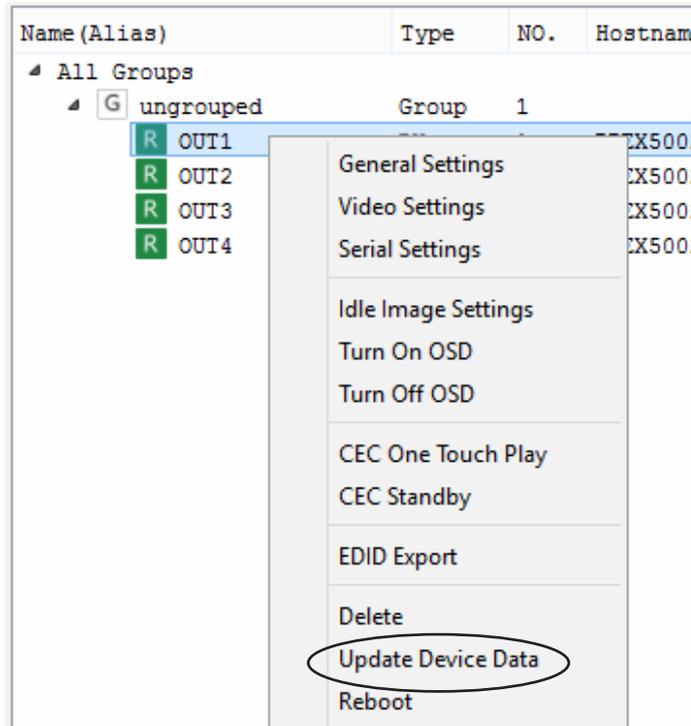


Choosing the option above will prompt you do save the file in the EDID file settings in Digi IP Configurator. The EDID configuration can now be applied to an encoder. For instructions on IPEX5001 EDID settings see page 30.



Refreshing Device Info

To refresh the devices current configuration settings, right click the decoder of choice and click on *Update Device Data*

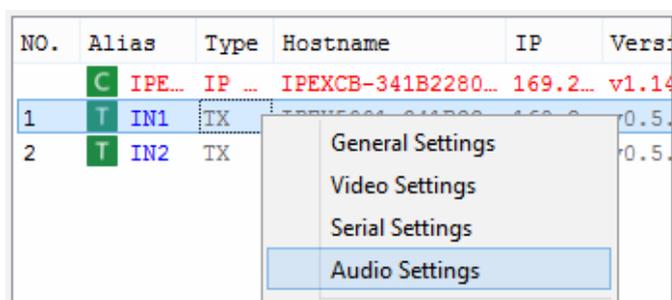


Configuring Dante Audio (IPEX5001-D Only)

NOTE: It is not necessary to set the IPEX5001-D encoder to DHCP IP Mode when configuring Dante audio.

To properly configure Dante audio on a IPEX5001-D Dante enabled encoder, configure the IP video system as described in this manual using the default Auto IP mode with no router connected to the AV LAN. Once video is configured with DigitalinxIP Configurator software, connect a router with DHCP server to the AV LAN to configure the Dante audio streams. Dante Controller must be used to configure or route Dante audio streams received from the IPEX5001-D, Dante Controller can be downloaded online at www.audinate.com

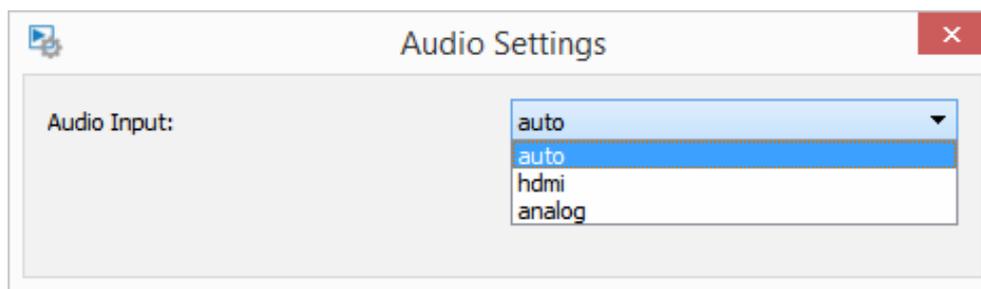
To set the default audio stream of the IPEX5001-D that will on ramp onto a Dante audio network, right click on the name of the encoder and select *Audio Settings*.



Choose the default audio stream / input for the IPEX5001-D encoder, then click *Apply*.

Note: When choosing the *hdmi* setting, the default Dante audio stream will be the embedded stereo 2 channel HDMI audio stream and when choosing *analog*, the default Dante audio stream will generate from the 3.5mm analog audio input on the IPEX5001-D.

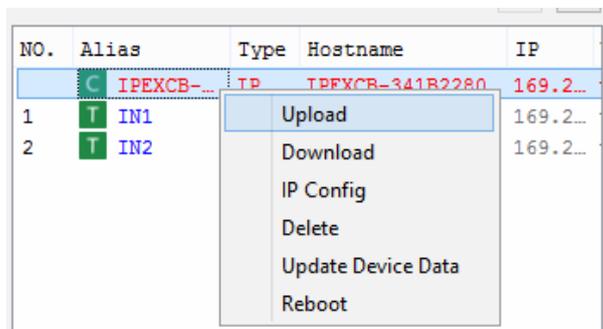
Note: The EDID setting for the Dante encoder must be set to a stereo / 2 channel audio EDID setting. See page 30 for IPEX5001 EDID settings



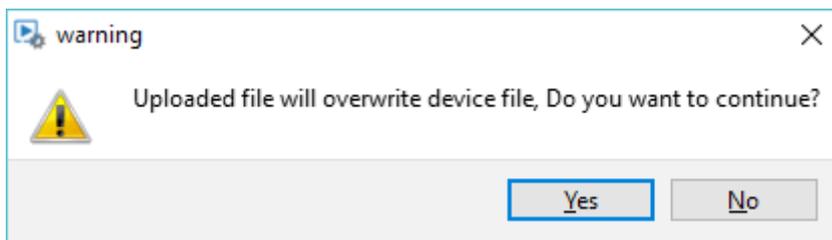
Saving and Loading Settings

Upload Settings to IPEXCB

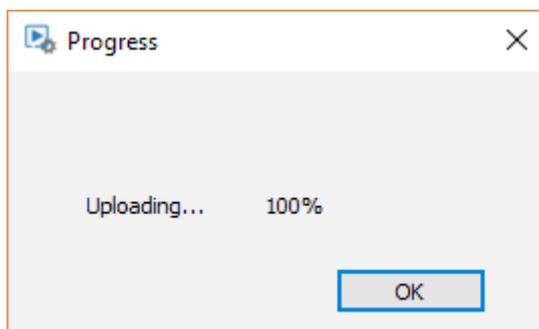
In order for the configuration to be used in a live system, it must be uploaded to the connected IPEXCB. Right click on the IPEXCB in the right panel and click *Upload*.



Click Yes in the upload confirmation window.



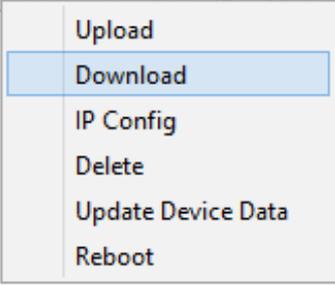
After a few seconds, the progress window will show the upload is complete. Click *OK* once the button is no longer grayed out.



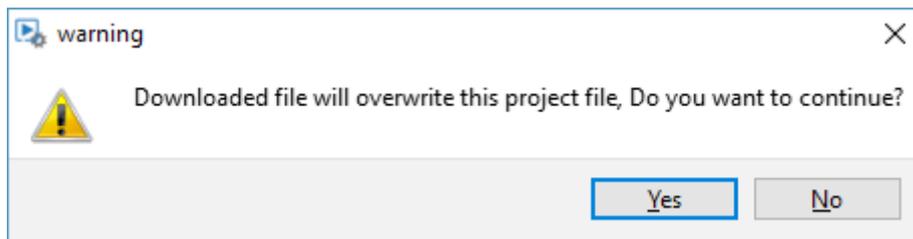
Download Settings from IPEXCB

To access the current system configuration, it must be downloaded from the IPEXCB. Right click on the IPEXCB in the right panel and click *Download*.

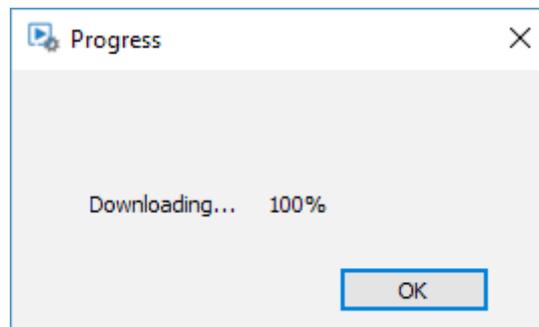
NO.	Alias	Type	Hostname	IP
	C IPEXCB-...	IP	IPEXCB-341R2280	169.2...
1	T IN1			169.2...
2	T IN2			169.2...



Click *Yes* in the download confirmation window.

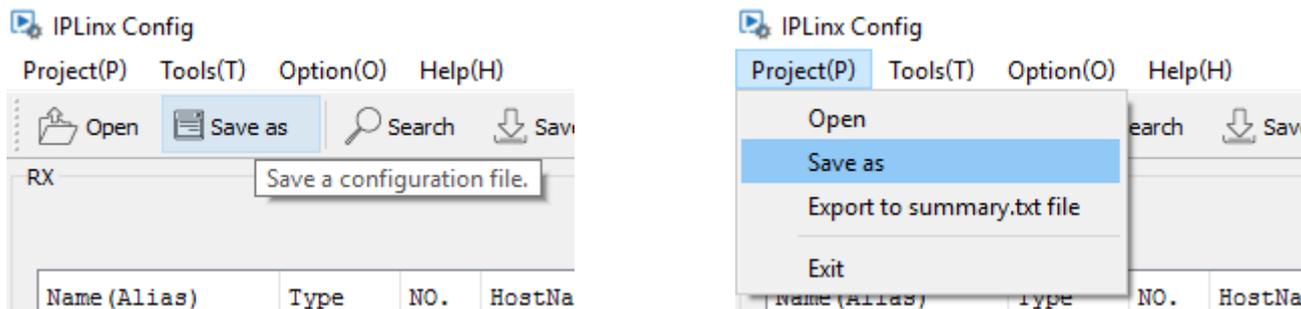


After a few seconds, the progress window will show the download is complete. Click *OK* once the button is no longer grayed out.

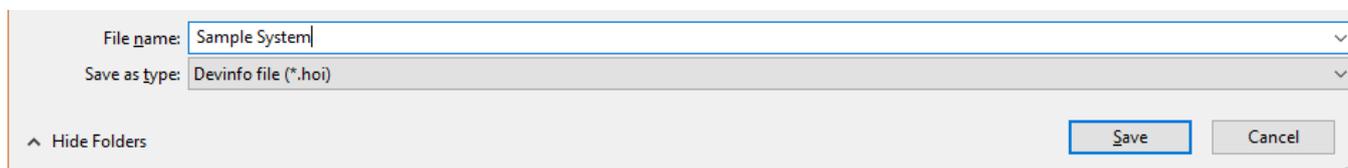


Save Settings to a File

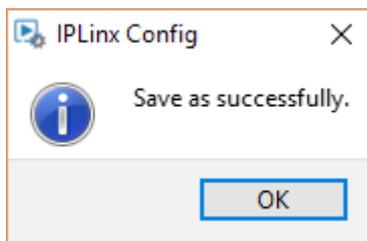
Click the *Save as* button or navigate to *Project > Save as* to save the current system to a file in case the IPEXCB becomes damaged or must be reset to factory defaults.



Provide a name for the save file, then click *Save*.

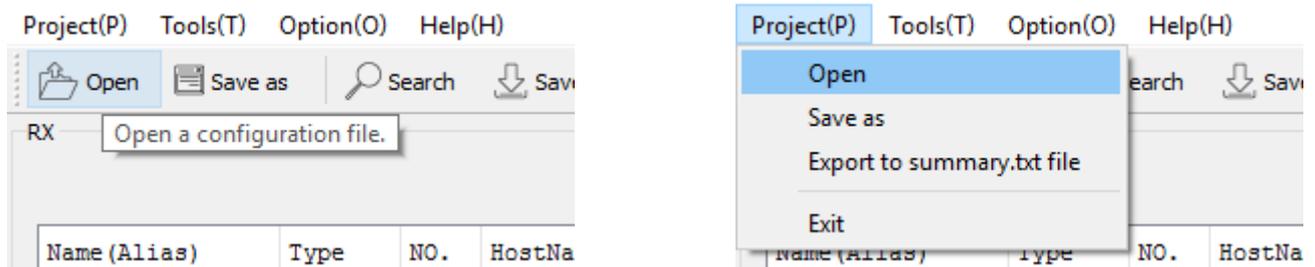


A status window will show the save is complete. Click *OK*.



Load Settings from a File

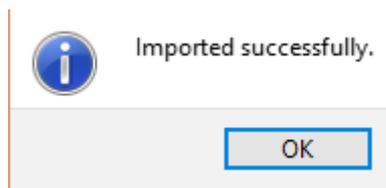
Click the *Open* button or navigate to *Project > Open* to load a saved system file in case the IPEXCB became damaged or was reset to factory defaults.



Select the name for the previously saved file, then click *Open*.



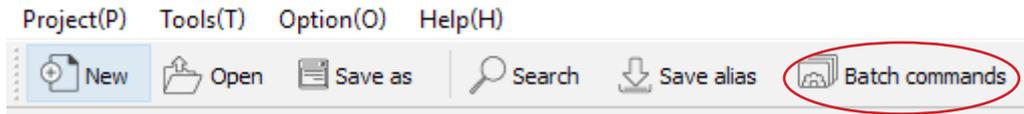
A status window will show the file has been imported successfully. Click *OK*.



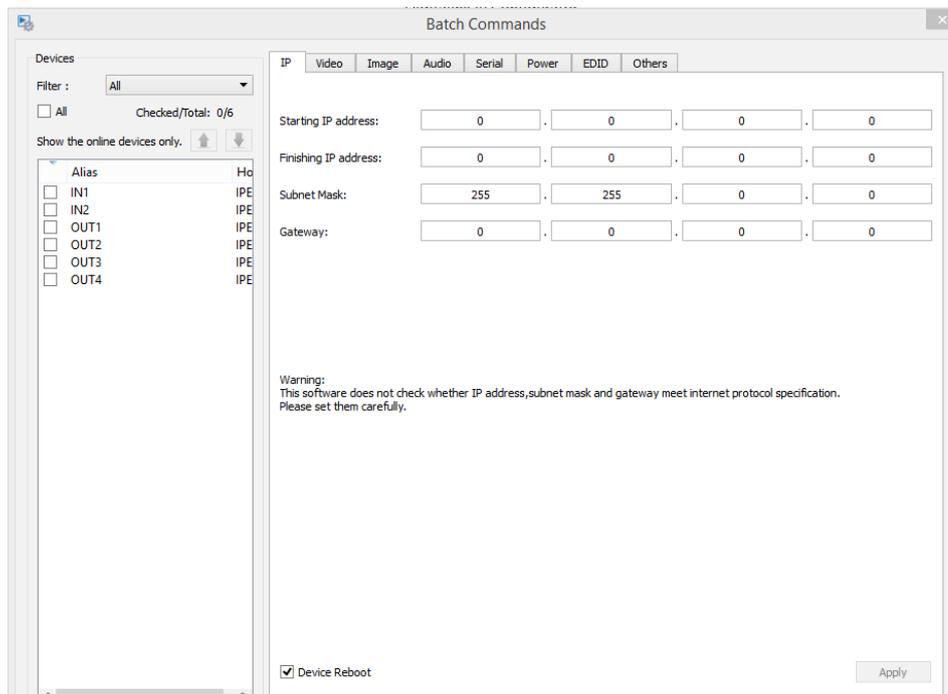
Batch Commands

The *Batch Commands* menu allows you to configure settings of multiple encoders and decoders in large batches rather than one at a time. This is a much more efficient way of configuring multiple devices on an A/V LAN.

To access, click on the *Batch Commands* menu



To apply changes to devices, select the desired encoders and decoders on the device list to the left, select the desired batch menu and then apply settings to the selected devices according to the selected menu.



Explanation of Menu

IP - Changes IP address scheme of multiple DigitalinxIP devices

Video - 2000 / 5000 series video settings

- For JPEG 2000 - 5000 Series Settings Only
- For H.264 - 2000 Series Settings Only

Image - Allows for upload of a custom system boot up or background picture

Audio - Audio delay settings

Serial - Configures RS232 serial ports of devices, allows for serial command testing

Power - Defines discrete power ON/OFF commands for displays connected to DigitalinxIP decoders

EDID - 5000 Series only; allows for change to and upload of EDID tables

Others - Allows for reboot / factory default reset of DigitalinxIP devices

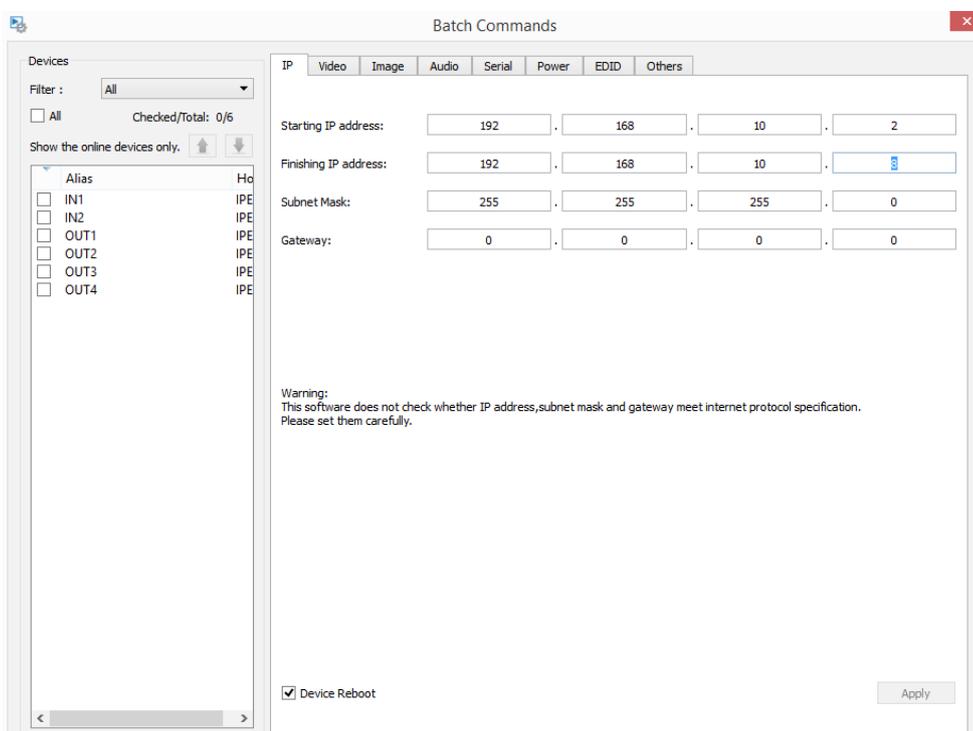
Changing IP Address Scheme

When deploying DigitalinxIP systems, it may be desired to change the IP address scheme for the entire system to a different IP range or IP class. To do this you will need to change the IP addresses of the DigitalinxIP devices first then change the IP address of the LAN1 port of the IPEXCB.

Note: when changing IP addresses, ALL newly given addresses must be in range with one another and the IPEXCB Control Interface

Changing the IP addresses of DigitalinxIP encoders and decoders can be done individually by right clicking on the DigitalinxIP encoder or decoder and selecting *General Settings* or by using *Batch Commands*. When using multiple DigitalinxIP devices *Batch Commands* is the preferred method.

Click on *Batch Commands*, by default the IP menu will be the default submenu



Select the desired DigitalinxIP device(s) on the device list to the left.

Choose a starting IP address for the devices in the *IP Address begin* field

Choose an ending IP address for the devices in the *IP Address end* field

Fill in the appropriate subnet for the class of IP addresses being used on the *Subnet Mask* field

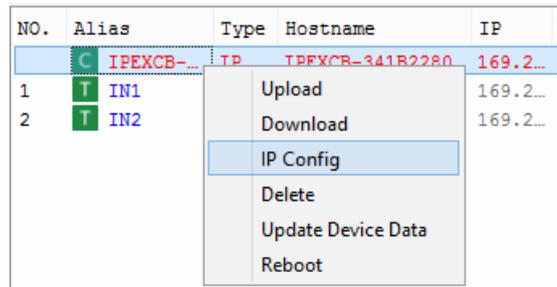
Fill in the appropriate router IP in the *Gateway* field (optional if using a router)

Click *Apply* - Devices will now reboot with the new IP

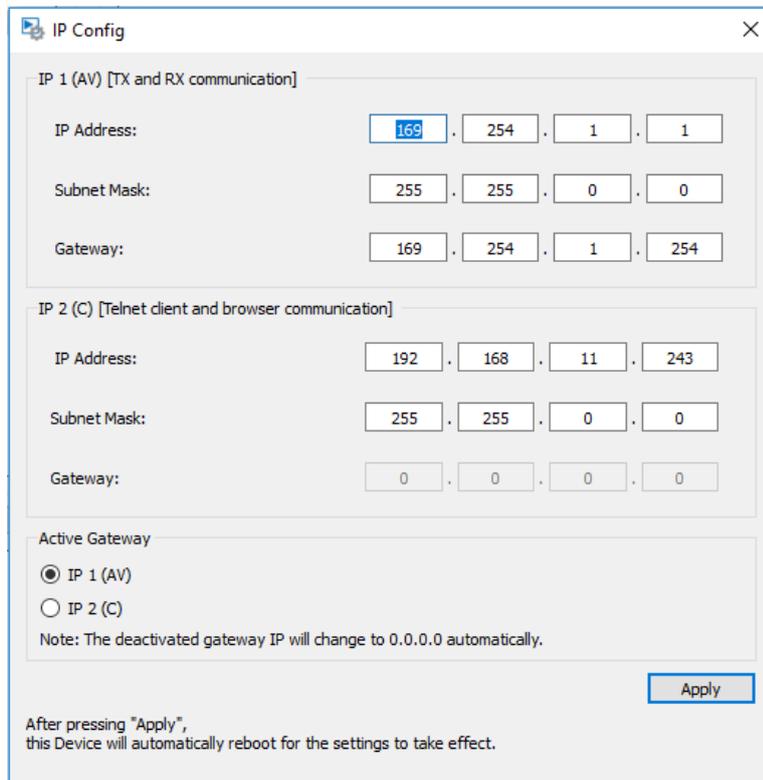
In the example above we are changing the DigitalinxIP system address scheme from a Class B to a Class C address starting with 192.168.10.xxx with a subnet mask of 255.255.255.0. Since there are 6 total devices with will use 192.168.10.2 as our starting range and 192.168.10.8 as our ending range, reserving 192.168.10.1 for the IPEXCB

Note: Once the DigitalinxIP device addresses have been changed, they will fall off the network in Digi IP Configurator if the newly changed IP addresses are not in the same range of the IPEXCB or the computer connected to the network running Digi IP Configurator. They will reappear after the IPEXCB and computer running Digi IP Configurator has been changed to that IP range.

Right click on the IPEXCB in Digi IP Configurator and choose the menu *IP Config* to adjust the IP address settings of the IPEXCB



The following pop up window will appear



Enter the desired static IP address, Subnet Mask and Gateway information in the *IP1* and *IP2 Address field* in the *IP 1 [TX and RX communication]* and *IP2 (C) (Telnet and browser communication)* field.

Note: In order to activate a gateway (router) to communicate with either interface (IP1 or IP2) you must choose which interface in the *ACTIVE GATEWAY* option to activate then enter the routers IP address for that LAN in the *Gateway* IP field for that interface, the deactivated gateway IP will change to 0.0.0.0 automatically.

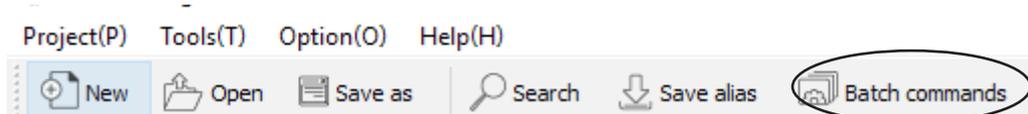
Click *Apply* to apply settings

Note: After you change the IP range to your IPEXCB and the DigitalinxIP devices be sure to change your computers IP range to match the newly changed IP range.

CEC Display Power Configuration

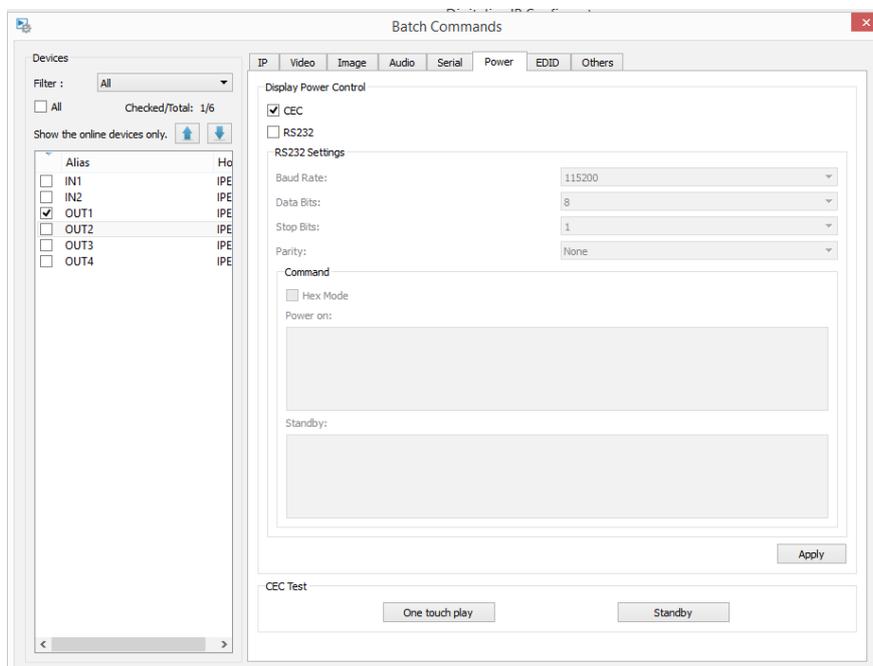
In Digi IP Configurator you can configure ON/OFF power commands for displays connected to decoders using either CEC or RS232 so they can be powered ON/OFF using the Digi IP Control APPS or a 3rd party IP or serial based control system easily.

To configure display power using CEC, click on the *Batch Commands* menu.



Click on *Power* submenu

Check the decoders you want to configure then check the *CEC* box located at the top left



To test CEC ON and OFF functionality from this screen use the *CEC Test* module in this menu. *One Touch Play* is for display ON and *Standby* if for display OFF.

Use the following API commands to turn display ON/OFF using a 3rd party control system.

```
config set device sinkpower on RECEIVER NAME
config set device sinkpower off RECEIVER NAME
```

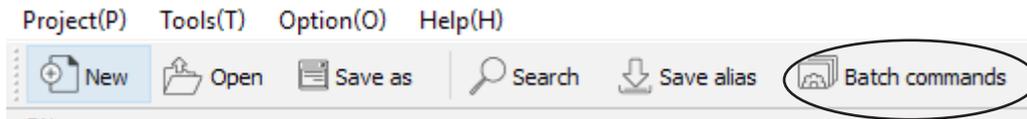
RECEIVER NAME is the name of the decoder. Use the default name of the decoder given by the DigitalinxIP system or the alias that was assigned to the decoder. If using an alias to identify encoders and decoders in a session be sure to use the *config set session alias on* command.

For a comprehensive list of API commands please refer to the *DigitalinxIP Programming Guide* located on the IPEXCB product page under the *DOCUMENTATION* tab at www.libav.com

RS232 Display Power Configuration

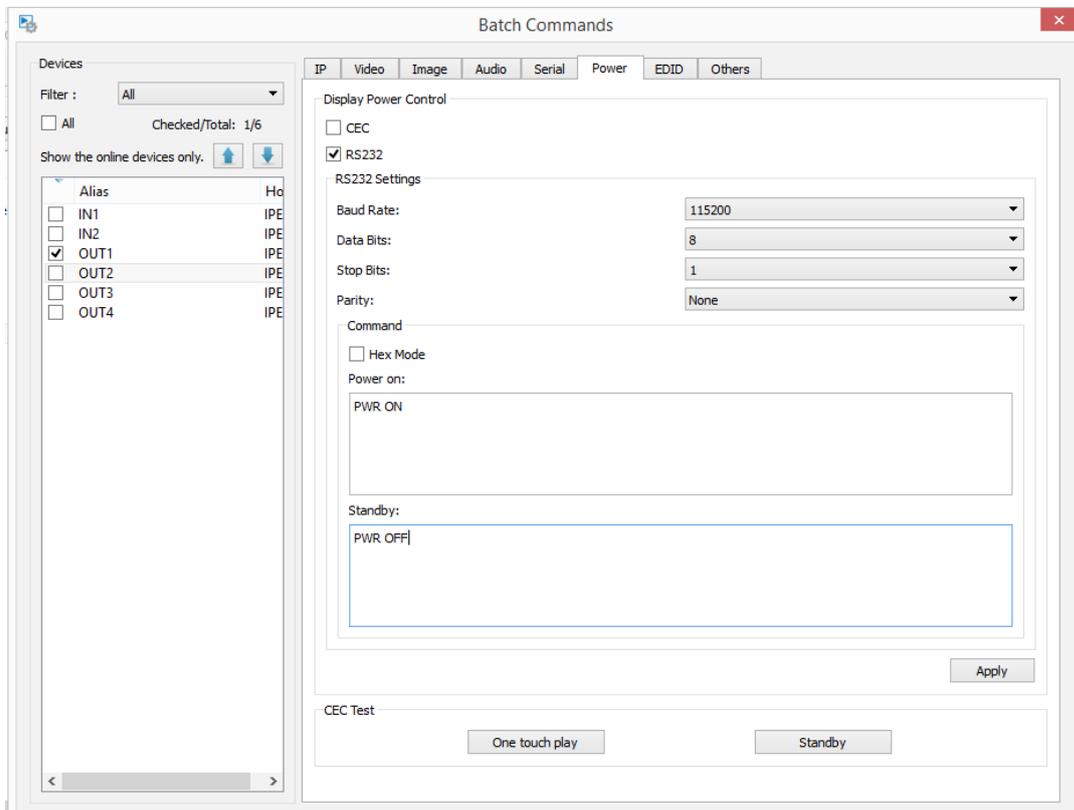
NOTE: To properly send power ON/OFF serial commands to displays connected to encoders, connect the RS232 port of the DigitalinxIP decoder to the display. Be sure to connect TX from DigitalinxIP decoder to RX of the display and RX from DigitalinxIP decoder to TX.

To configure display power using RS232, click on the *Batch Commands* menu.



Click on *Power* submenu

Check the decoders you want to configure then check the *RS232* box located at the top left



Enter the correct RS232 communication settings for your display in the *RS232 Settings* section. For correct settings for the display that is connected to the decoder, you will need to consult the displays manufacturers owners manual.

Enter the power ON/OFF command sets for the display in the *Power On* and *Standby* field in the *Command* section. By default commands entered in the *Power On* and *Standby* field are ASCII based, check the Hex Mode box to enter Hex based commands. If special termination characters are needed use the *Serial* submenu in Batch Commands to enter this information under *Append Carriage-Return / Line Feed* and choose the appropriate terminator.

Use the following API commands to turn display ON/OFF in a 3rd party control system.

```
config set device sinkpower on RECEIVER NAME
config set device sinkpower off RECEIVER NAME
```

RECEIVER NAME is the name of the decoder. Use the default name of the decoder given by the DigitalinxIP system or the alias that was assigned to the decoder. If using an alias to identify encoders and decoders in a session be sure to use the *config set session alias on* command.

For a comprehensive list of API commands please refer to the *DigitalinxIP Programming Guide* located on the IPEXCB product page under the *DOCUMENTATION* tab at www.libav.com

Using iPad or Windows Control APP

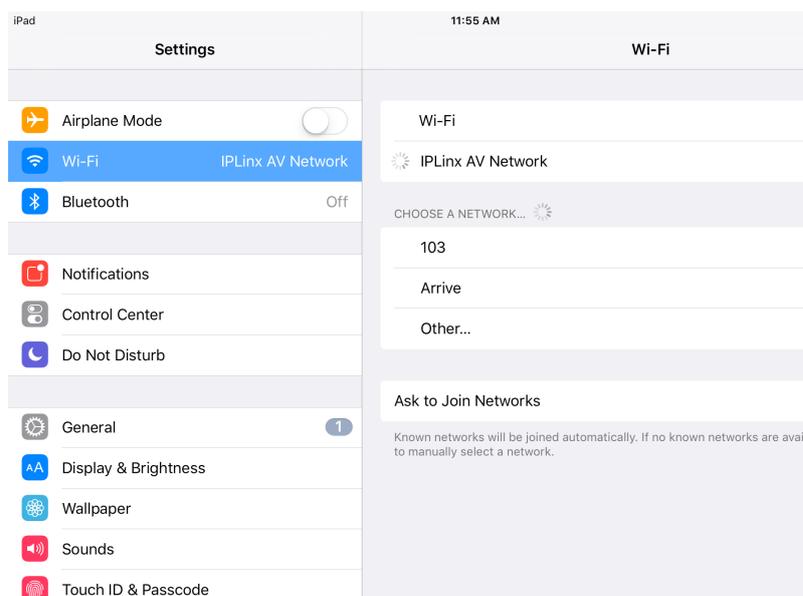
An iPad and Windows based control APP is available for DigitalinxIP simple system control. The APP communicates with the Digi IP Configurator file that is saved directly onto the IPEXCB, therefore the APP cannot make changes to DigitalinxIP system settings.

The iPad APP can be downloaded on the Apple APP Store and the Windows applications is available for download on the IPEXCB product page online at www.libav.com under the *SOFTWARE* tab.

Connecting Apple iPad to DigitalinxIP System

To connect an Apple iPad to the DigitalinxIP A/V network, connect a wireless access point to the A/V network switch where the DigitalinxIP system resides. Once you've decided on an SSID for the WiFi connection, join the Wi-Fi network in the iPad's Settings portal.

In our example below we created a Wi-Fi connection labeled *IPLinx A/V Network*.



If you do not have an Internet connection or a DHCP server connected to the A/V network you may notice a spinning wheel next to the network SSID that you are trying to connect to in the iPad settings portal. This is because a DHCP server is not connected to the system therefore an auto IP is not automatically assigned to the iPad

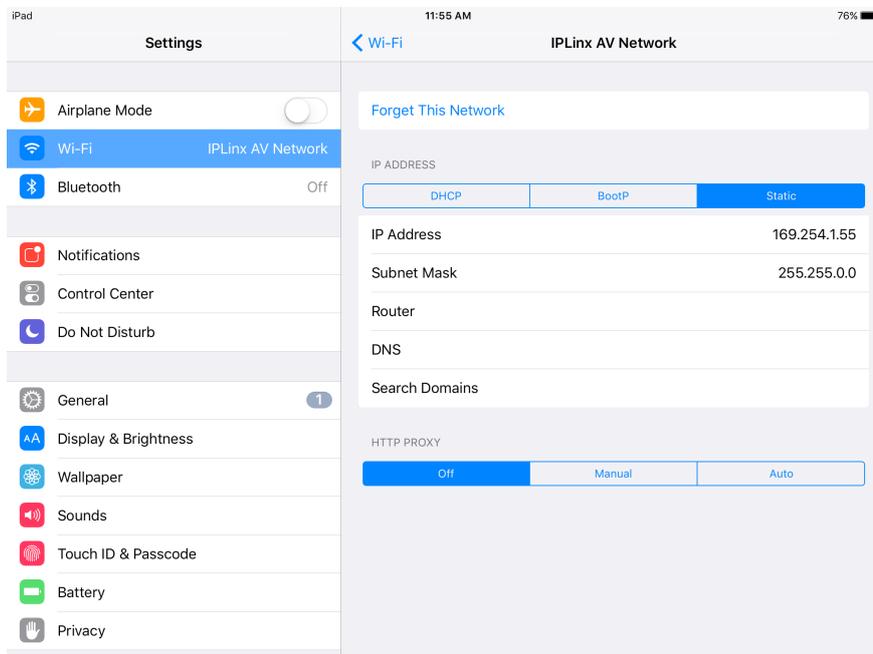


If this is the case, keep in mind that as long as the network SSID populates to the blue section to the left in the Wi-Fi settings you are connected. If you would like to assign an IP in the range of the DigitalinxIP A/V network follow the steps below.

Click on the **i** button next to the SSID in the Wi-Fi settings window in the iPad.

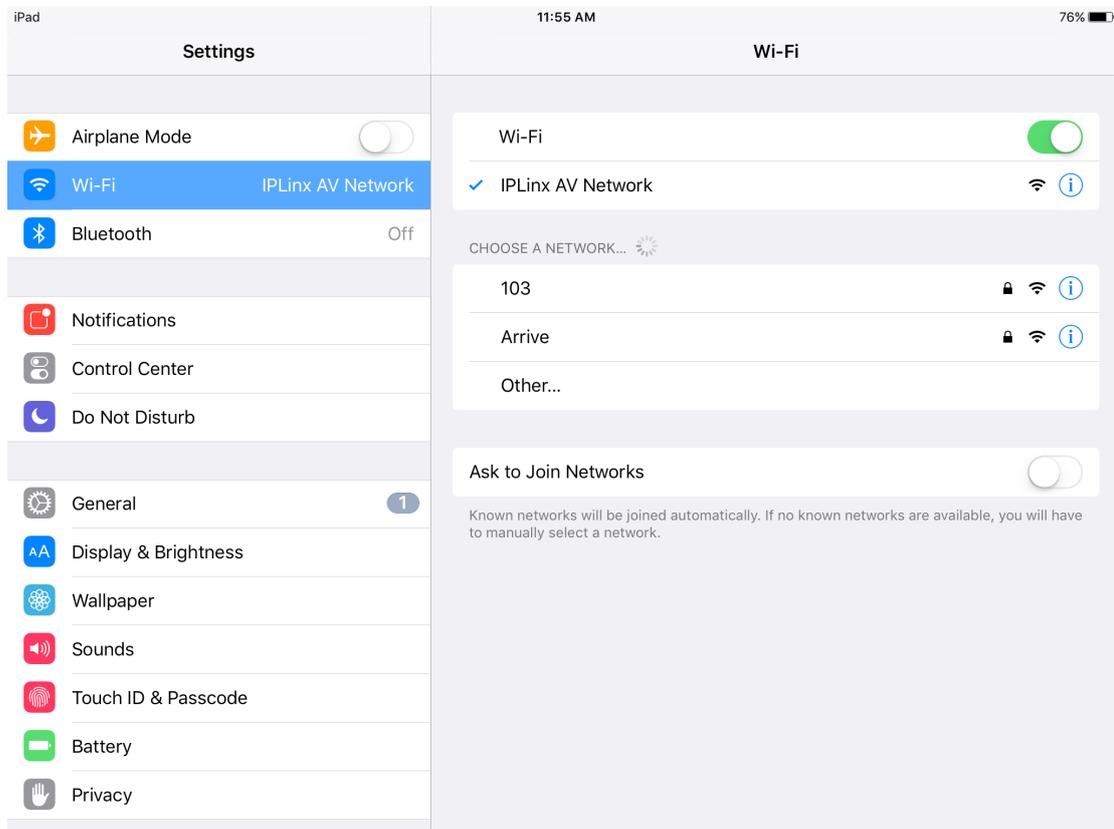


Then choose the *Static* submenu to enter in a static IP Address and Subnet Mask that is in range of the DigitalinxIP A/V network



In our example above we entered in an IP Address and Subnet Mask in the default range of the DigitalinxIP A/V network.

After entering in a static IP Address and Subnet Mask in the range of the DigitalinxIP A/V network, a check mark will now appear next to the SSID name in the iPads settings portal.



Click on the Digi IP APP icon on your iPad to launch the APP. Once you are connected to the DigitalinxIP network the APP will show that it is *CONNECTED* at the top of the APP home page.

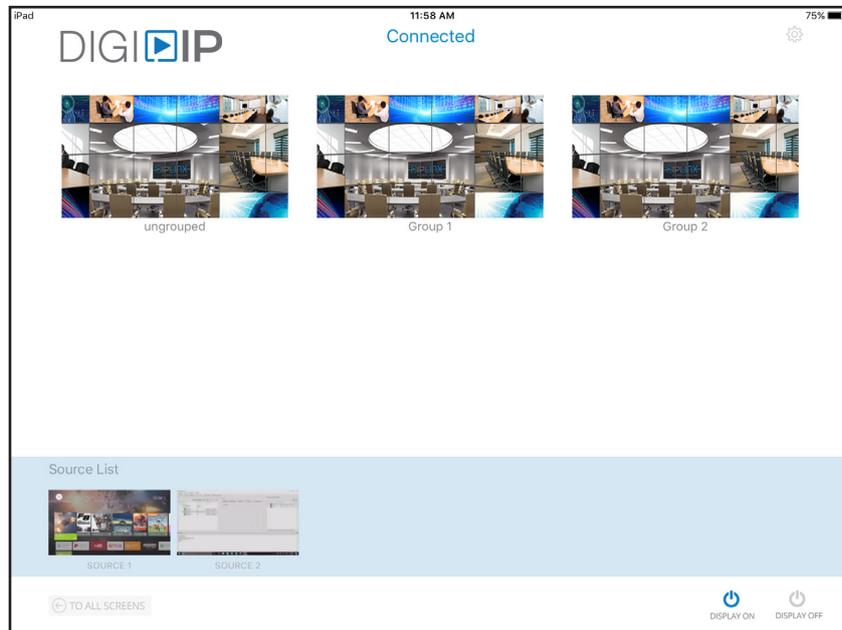


Groups (groups of displays, video wall configurations and their respective layouts) will be located in the upper half of the APP and sources will be located at the bottom half of the APP. Thumbnail previews of live sources in the A/V network will also appear in the respective source and displays lists in the APP.

To expand a group simply click on a group in the list to show the display layout within that group. To route video selections, simply drag and drop sources thumbnails into the desired display location. To turn displays ON or OFF in a group, simply press Display On or Display Off in the bottom right corner of the APP. For this function to work on a display, that display must be CEC capable and the CEC must be turned ON in the displays setting menu.

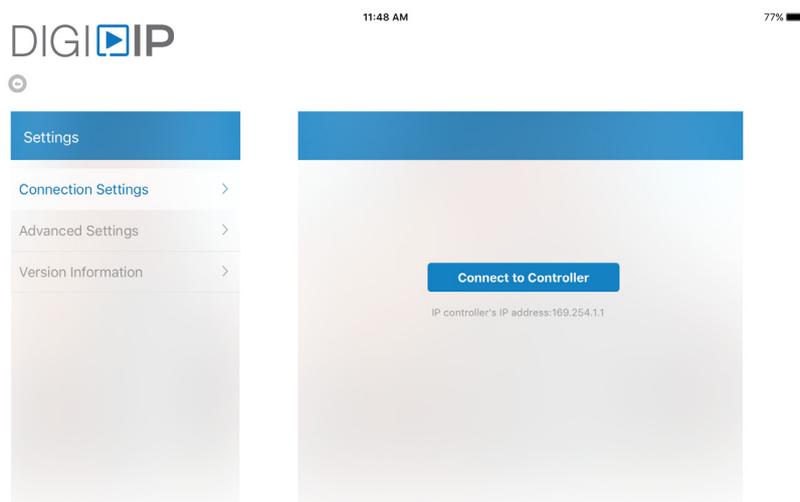
Hiding Groups

Groups that are configured in DigitalinxIP Configurator will always appear in a list on the home page of the APP. In the example below, two groups have been created; *Group 1* and *Group 2* which each group containing displays that has been assigned to the group in Digi IP Configurator.

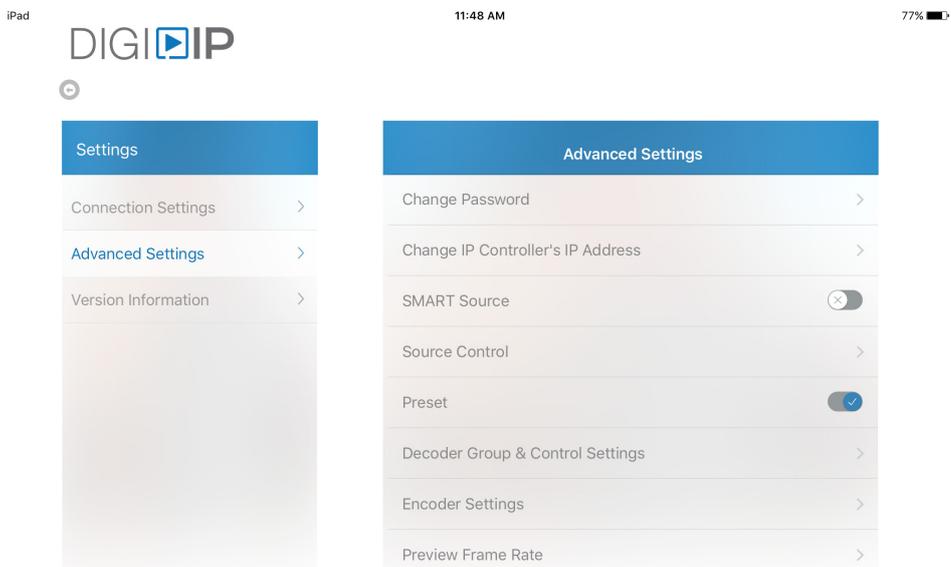


The group labeled *ungrouped* is a default group where all devices are originally stored before custom groups are made in Digi IP Configurator, therefore *ungrouped* cannot be deleted. However you can hide the group in the APP if there is no active displays located in that group. Hiding groups will also allow for multiple iPads to control multiple zones and only have access to the displays or groups of displays in that respective zone.

To hide a group, click on the settings cog in the upper right hand corner of the APP, then click *Advanced Settings*. It will prompt you for a password, the default password is *admin*.

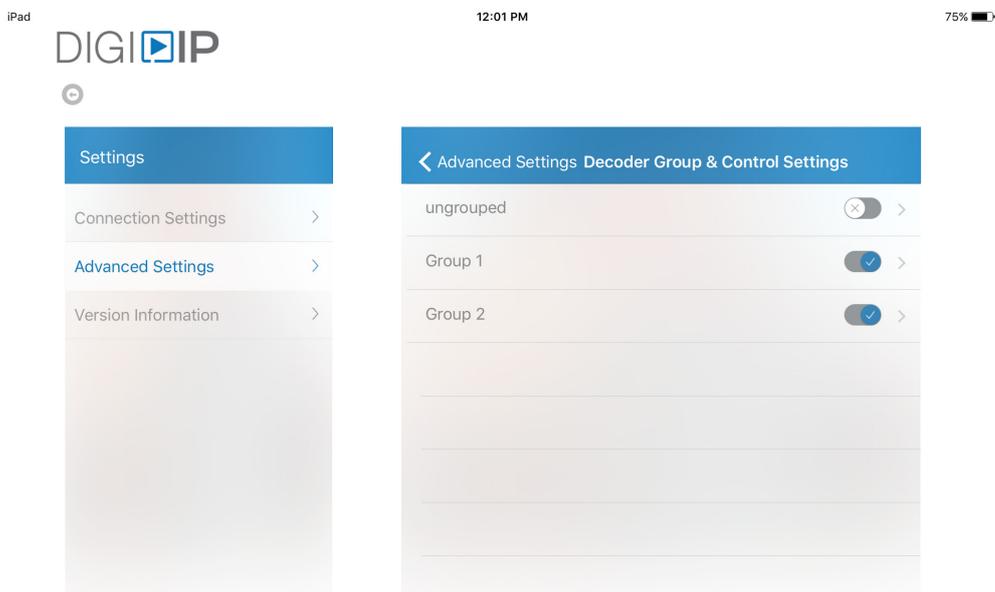


Click on *Decoder Group* and *Control Settings*



Uncheck the button to the right for *ungrouped*.

Click the back arrow above the *Settings* menu to return the home page of the APP. You will then notice that *ungrouped* will no longer appear in the group list.



Connecting Windows Computer to DigitalinxIP System

The Windows application can be downloaded on the IPEXCB product page under the *SOFTWARE* tab at www.libav.com. Extract all files and install the setup file. It will direct you to installing the control APP on your computer.

In order to control the DigitalinxIP system with the Windows APP either, connect a computer directly to the A/V network switch with a Cat5e or better cable or connect to the A/V network through a wireless access point that is connected to the A/V network.

When connecting a computer directly to the DigitalinxIP A/V network be sure to change the IP address of the computer to the range of the DigitalinxIP network. *For instructions on how to change an IP address on a computer see page 9.*

Note: User interface and application settings are exactly the same as the iPad APP version. *Please refer to page 57 for iPad APP usage.*

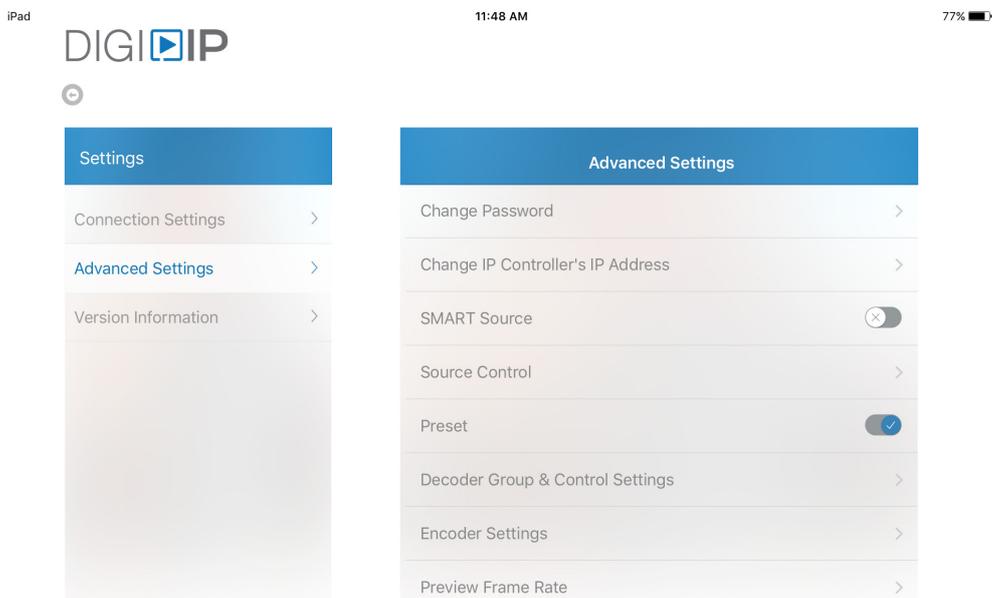
Syncing APP to IPEXCB IP Address

The control APP must be synced to the IPEXCB IP address on the A/V network IP address in order to communicate with the DigitalinxIP A/V system. The default address for the IPEXCB as well as the APP is 169.254.1.1. If you have changed the default IP of the IPEXCB to another IP address then you will need to enter that IP address into the APP settings.

Click on the settings cog in the upper right hand corner of the home page of the APP.

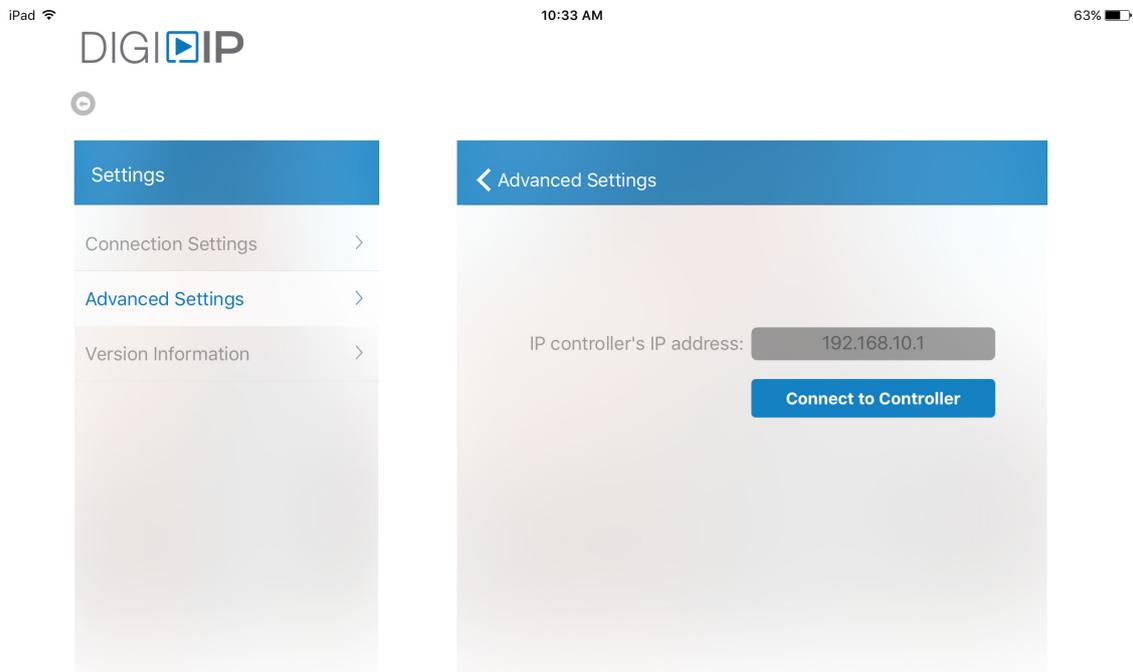
Click on *Advanced Settings*

Click on *Change IP Controller's IP Address*

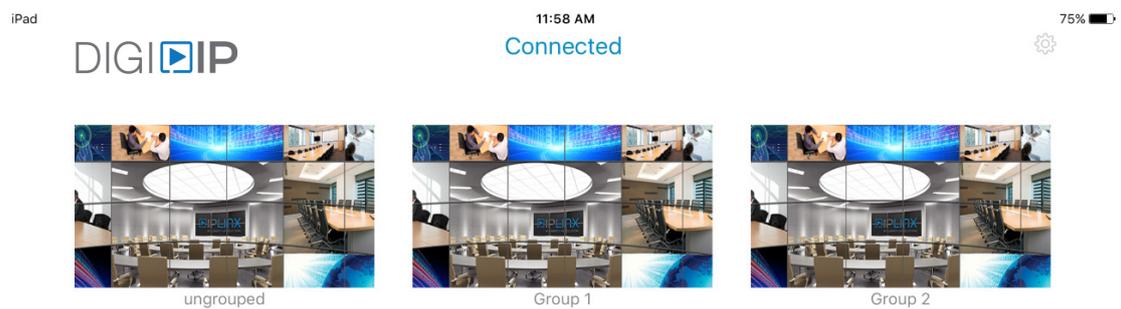


Then enter the IP address of the IPEXCB and click *Connect to Controller*

Then click the back arrow located above *Settings* menu to go back to the home page of the APP.



When you have successfully connected to the DigitalinxIP A/V network with the APP, it will state that you are **CONNECTED** at the top of the home page of the APP



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