Subject. User’s Guide of DigitalProjection Projector Controller

Revision History

Revision	Description	Author	Date
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1. Introductions

This document provides information and procedures for using Digital Projection Projector Controller. You can use Digital Projection Projector Controller to monitor and settings of all projectors connected to your computer via LAN.
From a single screen layout you can view all projectors and access settings for an individual projector or for a group of projectors. The software allows you to:

- Create groups of projectors which can be controlled simultaneously.
- View essential information, such as IP address, model, name, serial number, status, system error, light source, filter hours, signal, about all projectors on the network at a glance.
- Add and remove projectors within the network.
- Allows rapid network setup and discovery of projectors when using UDP mode.
- View logs operating status all interaction between the software and the projectors on the network.
- Control panel allow management and setting of the projector grouping.
- Management include: Setting value backup & restore, projectors monitor and scheduling.
- Adjustment include: Picture, Lens, Blend, Geometry, Mask, Color and Others.
- Others include: Display Option, Projector setup, PIP, 3D, Service, Network Configure, and Projector Command Control for professional users.

2. Quick-Start Guide

2.1 Operation System requirements

- Windows 10 (64-bit version) Home /Pro / Enterprise / Education.
- Local Area Network port (RJ-45).
- Minimum screen resolution is 1366x768.

2.2 Projector control software installation

The software can be installed within an existing network or you can build the network after the installation. Provided the network setup is correct, Projector Controller will automatically detect available projectors as soon as you start the application.

- Start the installer" Digital_Projection_Projector_Controller_windows_10.x.xxxx.exe"and follow the instructions of the wizard.

2.3 Start Application

- Starting from the shortcut icon, Double-click the "Digital Projection Projector Controller" shortcut icon on the desktop.

- Starting from the start menu, select Windows [Start] >[Program] > [Digital Projection Projector Controller] the Projector Controller screen will appear.

3. Basic LAN setup

3.1 Network Hardware Requirements

Connecting the each projector and computer to a network as shown in Fig. 1.
(1) Network hub
(2) Ethernet RJ-45 cable or via a wireless to connect the computer to the same network.
(3) Ethernet RJ-45 cable for connect the each projectors via a hub, switch or router.

Make sure that the IP address of each projector is correctly set, and the IP address is displayed on the OSD menu of the projector. You may need to contact your network administrator for help setting up the projector's IP address.

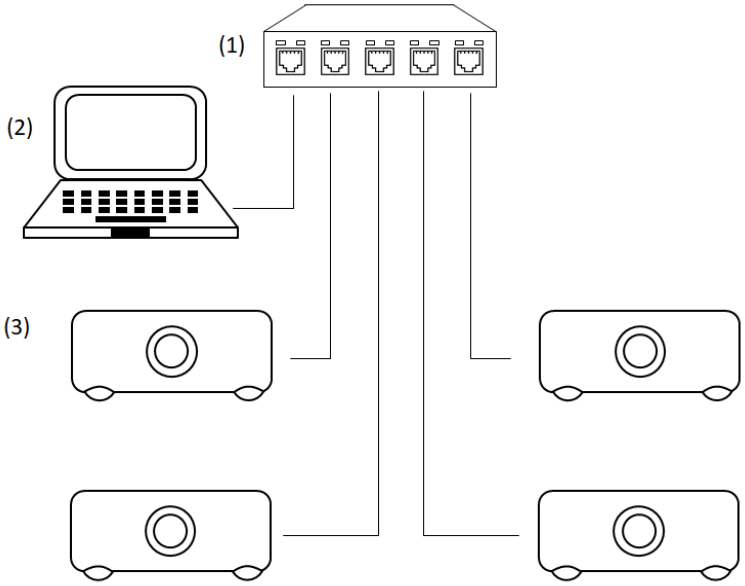
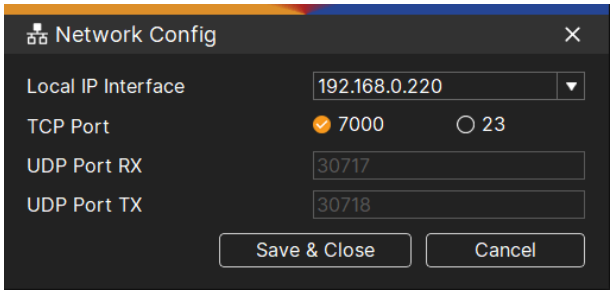


Fig. 1: Sample Wired Network

3.2 Setting the Computer Network

- Enable LAN settings on your computer.
- Set the Local IP Address according to the operating environment.



- Turn off the firewall. If you do not want to turn it off, register the firewall as an exception. Make the necessary settings to open the port.

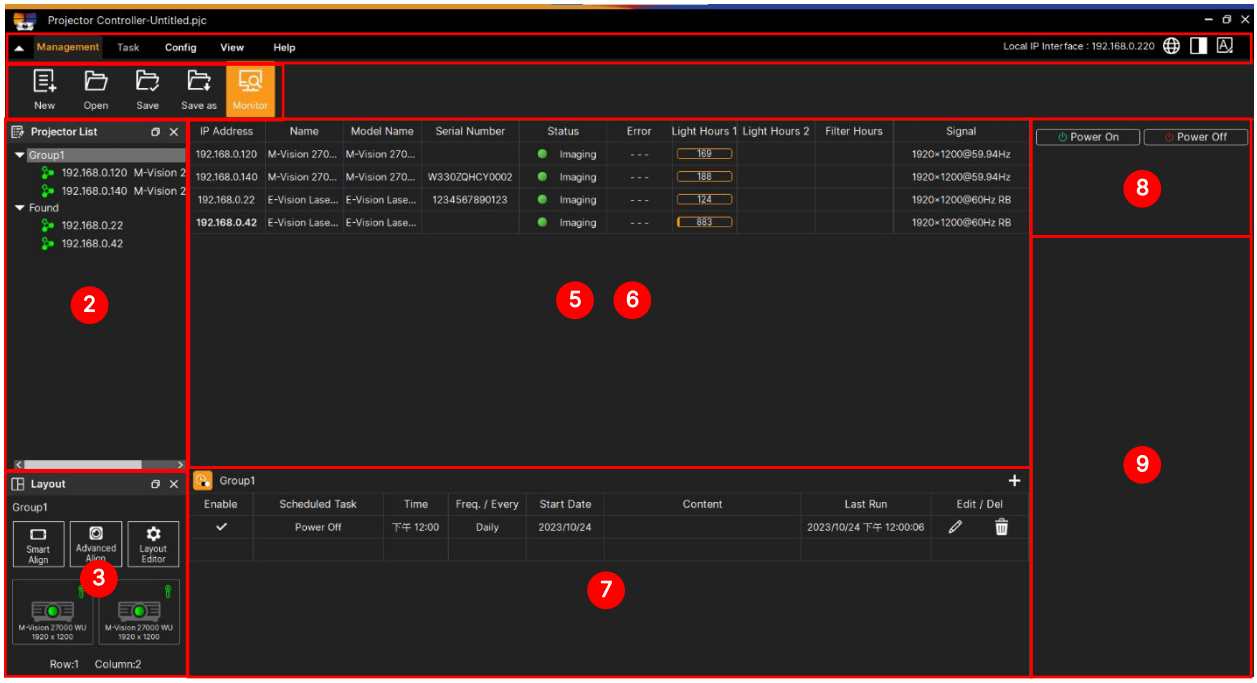
3.3 Setting the Projector Network

- Set the IP address, subnet mask, and default gateway according to your operating environment.

- Set DHCP to OFF and set a fixed IP address, making sure that the entered IP address is not used by any other device on the LAN. When DHCP is set to On, it may take some time to enter LAN standby status if an available DHCP server is not found.
- If the entered IP address is used by another device, the projector cannot be registered.

4. Main operation window

The user interface consists of the “Main operation window”, which is the main user interface.



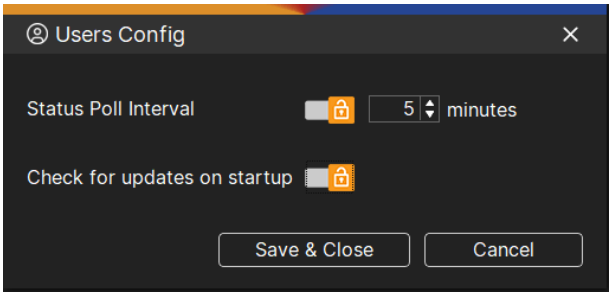
Menu and Functions in the Main Screen are shown below.

❶ Main Menu	**Main:** Projector Management and Adjustment.
	Adjustment Menu: Adjusting the projector picture, lens, edge blend, geometry, masking and color and so on
	Config: User operation setting, local pc network setting and software update.
	View: Open or Off window.
	Help: User operation guide for reference.
	Language: To select the operation language list English, Français, Español, Deutsch, Italiana, Svenska, Finnish, Suomalainen, Русский, 简体中文, 繁體中文,日本語,한국어
	Theme: To select black / white theme.
	Font Size: To select small / normal / large font size.
❷ Projector List	To provides two layer projector views, and the flexible views that are based on the search queries.
❸ Layout	Preview the projector layout image for multi-projection.
❹ Management	**New / Open / Save / Save as:** Projector Controller project file. **Monitor:** To monitoring the projectors status information and scheduling.
❺ Projector Status Area	When selecting projector group, change to the health status display area.

❻ Adjustment Area	When selecting a single projector, switch to the visualization adjustment area.
❼ Scheduling	Projector group action schedule planning.
❽ Common Setting	Projector common setting area
❾ Setting	Projector Individual Settings area

5. Config

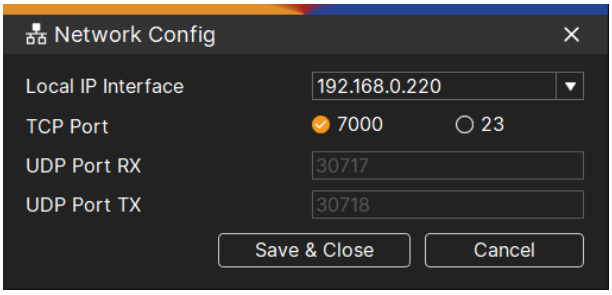
5.1 Users



Status Poll Interval	Projector polling time setting
Check for updates on startup	Check for updates on startup
Save & Close	Save and Exit
Cancel	Exit

5.2 Network

When you connect a projector to a computer, both must be connected to the same network and share the same subnet. Depending on the number of available ports, you can connect one or multiple projectors to a computer.



Local IP Interface	Setting the Computer Network IP address
TCP Port	Set network TCP protocol, The default setting is 7000
UDP Port RX	Set network UDP protocol, The RX default setting is 30717
UDP Port TX	Set network UDP protocol, The TX default setting is 30718
Save & Close	Save and Exit
Cancel	Exit

5.3 OTA

The Over the air (OTA) can be used to load and install software updates from a network. A software update may contain any combination of application code, projector configuration files.

6. View

Projector List	Open or close Projector List window
Layout	Open or close Layout window
Settings	Open or close Setting window
Console	Open or Close log Console window

7. Help

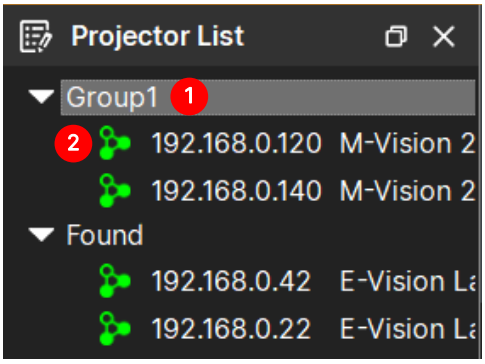
Activation	Please reference to Advanced Align
Contact Us	https://www.digitalprojection.com/
About	Supported Model List

8. Projector List

8.1 Projector view

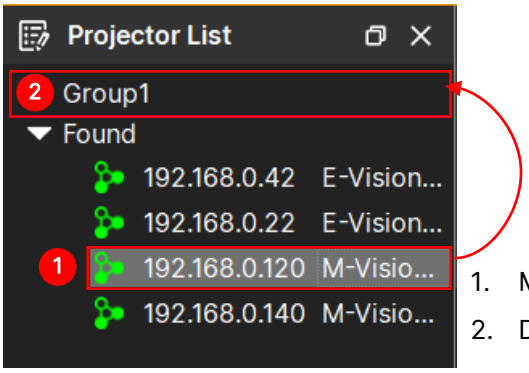
Projector Controller two layer projector views, and the flexible views that are based on the search queries.

- All Projectors View : Shows the list of all projectors that are defined in the Projector Controller software.
- Projectors Group View : Shows the list of groups and projectors in the selected group.



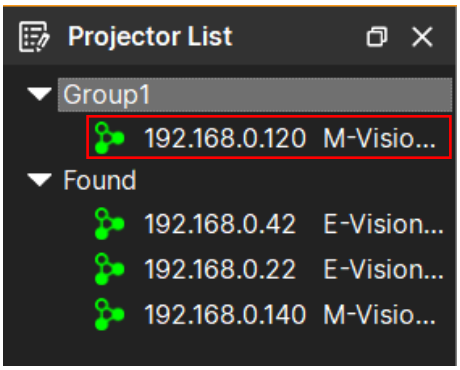
❶ Group	Displays the group name. Found Group: Display the discovered projectors.
❷ Projector	Displays the connecting status, IP address, projector name.

Exercise: Grouping



1. Mouse click the Found projector
2. Drag to Group1

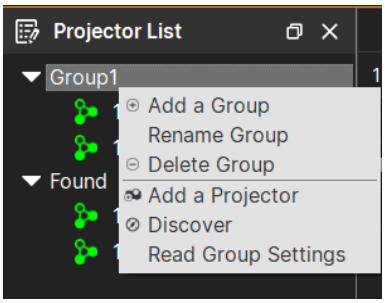
↓

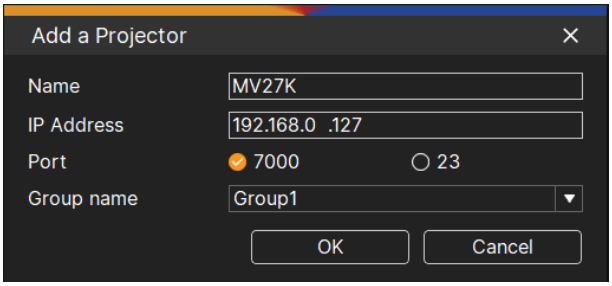


8.2 To add a projector

Manual connect the projector to the network.

1. Move mouse cursor on the connection icon.
2. Click mouse right button on the dropdown list and select add a projector.
3. Click [Add a Projector] add a new projector.
4. Enter the Name, IP Address, Port of the projector.

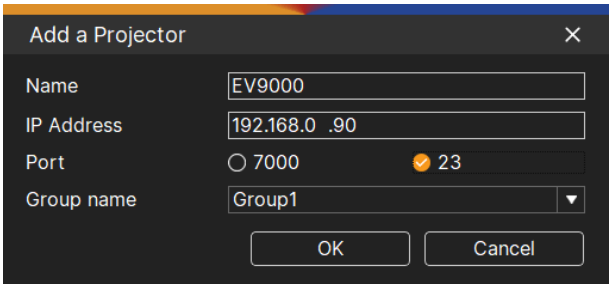




Not supported broadcasting. Please using [Add a Projector] to add the projector.

Model	Port
E-Vision 4000 4K-UHD	23
E-Vision 9100 WU	23
E-Vision Laser 5100 WUXGA	23
E-Vision Laser 5900 WUXGA	23
E-Vision Laser 6500 II	23
E-Vision Laser 9000	23

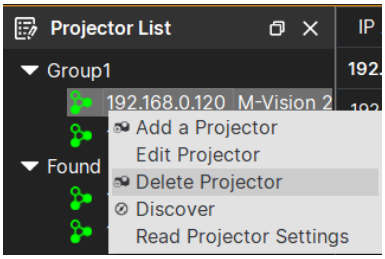
Example



8.3 To remove a projector

Disconnect the projector from the network.

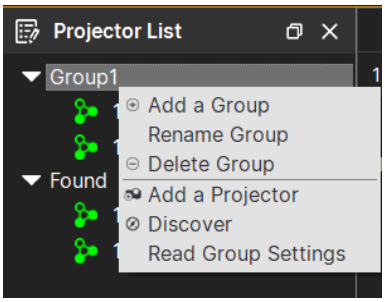
1. Move mouse cursor on the connection icon.
2. Click mouse right button on the dropdown list and select Delete a Projector.
3. Click [Delete Projector] remove a projector.



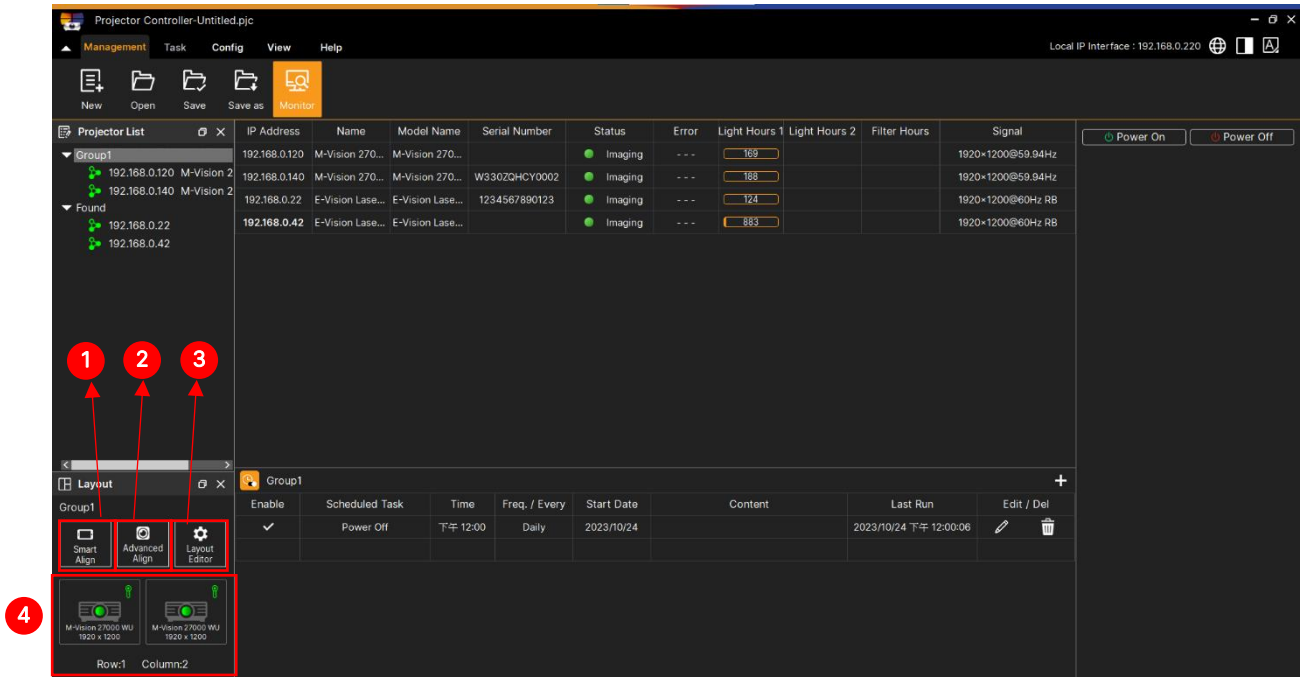
8.4 Discover Projector

To automatically search for the projectors connected to the same network.

1. Move mouse cursor on the connection icon.
2. Click mouse right button on the dropdown list and select Discover.
3. Click [Discover] auto search for projectors connected to the network connections.



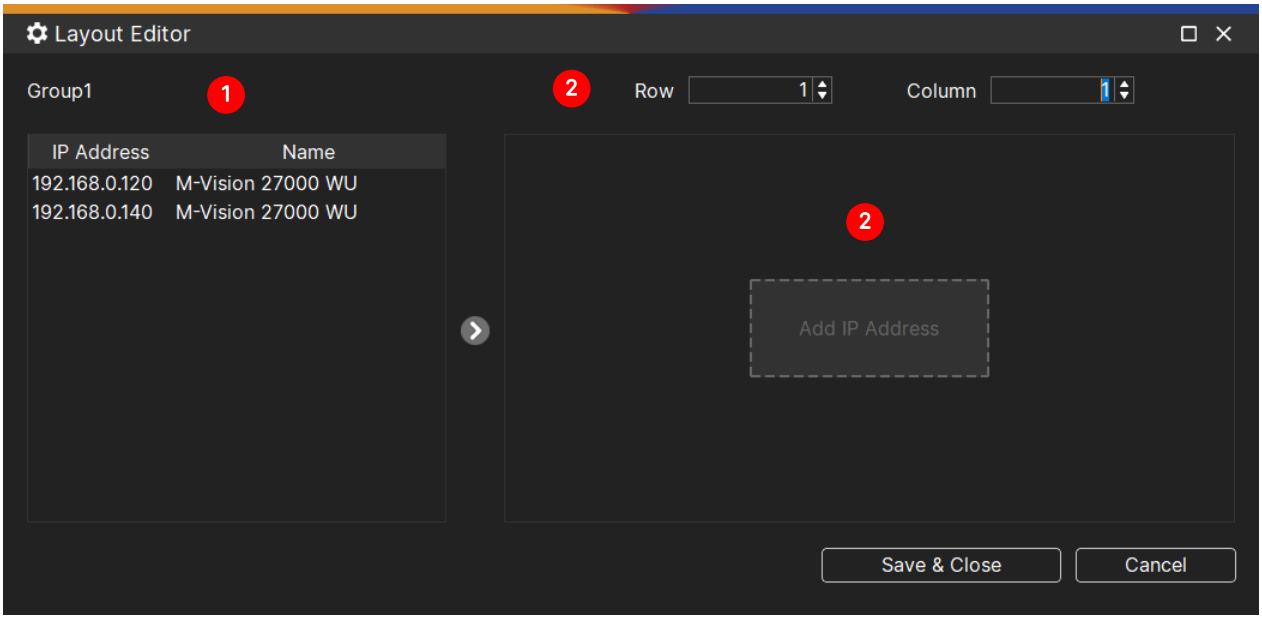
9. Layout



❶ Smart Align	Please reference to Smart Align
❷ Advanced Align	Please reference to Advanced Align
❸ Layout Editor	Edit the projector layout..
❹ Layout Preview	Preview the projector layout image.

9.1 Layout Edit

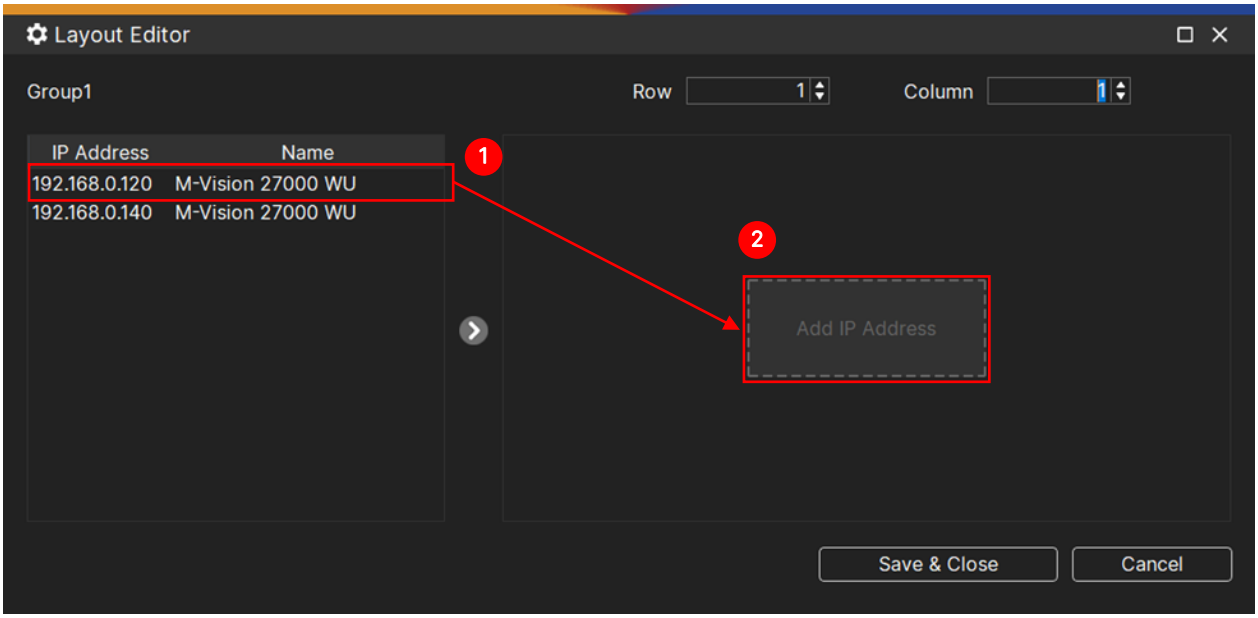
Display the edit screen of the Layout window.

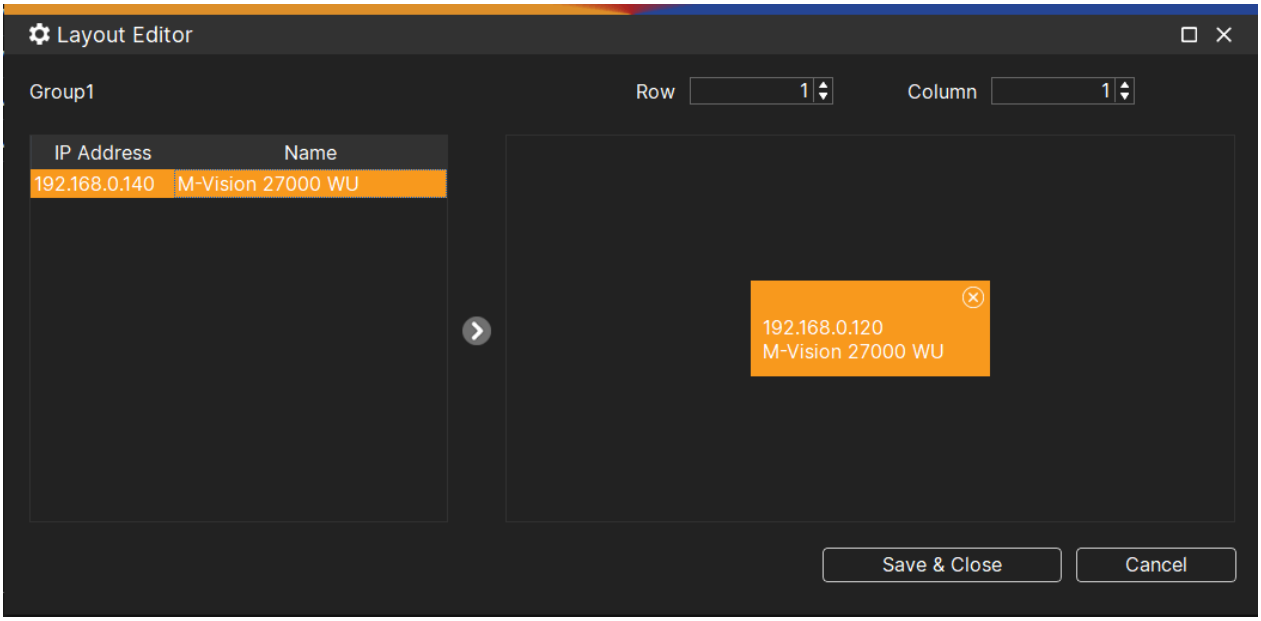


❶ Group	Layout is selected in available Projector List.
❷ Row / Row	Increase or decrease the row / column layout of the projectors
❸ Placement	Move the mouse cursor on the projector list, and select a projector, and drag it to the desired position on the layout window

Exercise

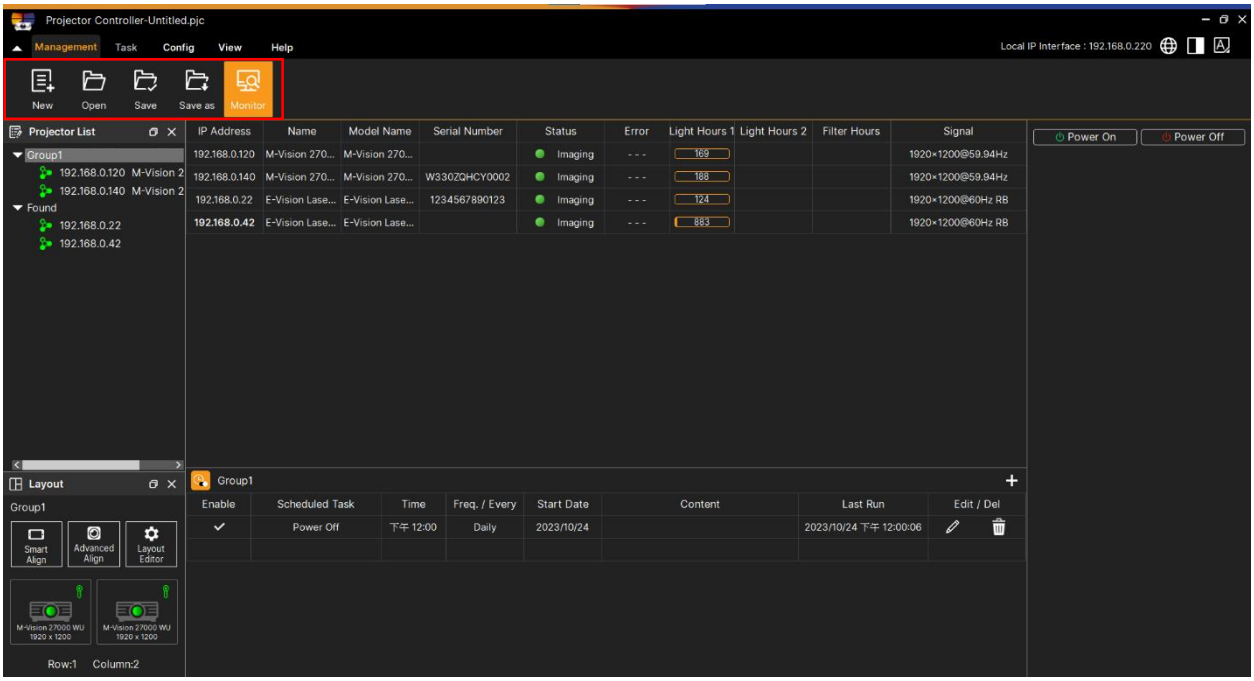
Use mouse to drag the projector in the left list to the box in the right.





10. Management

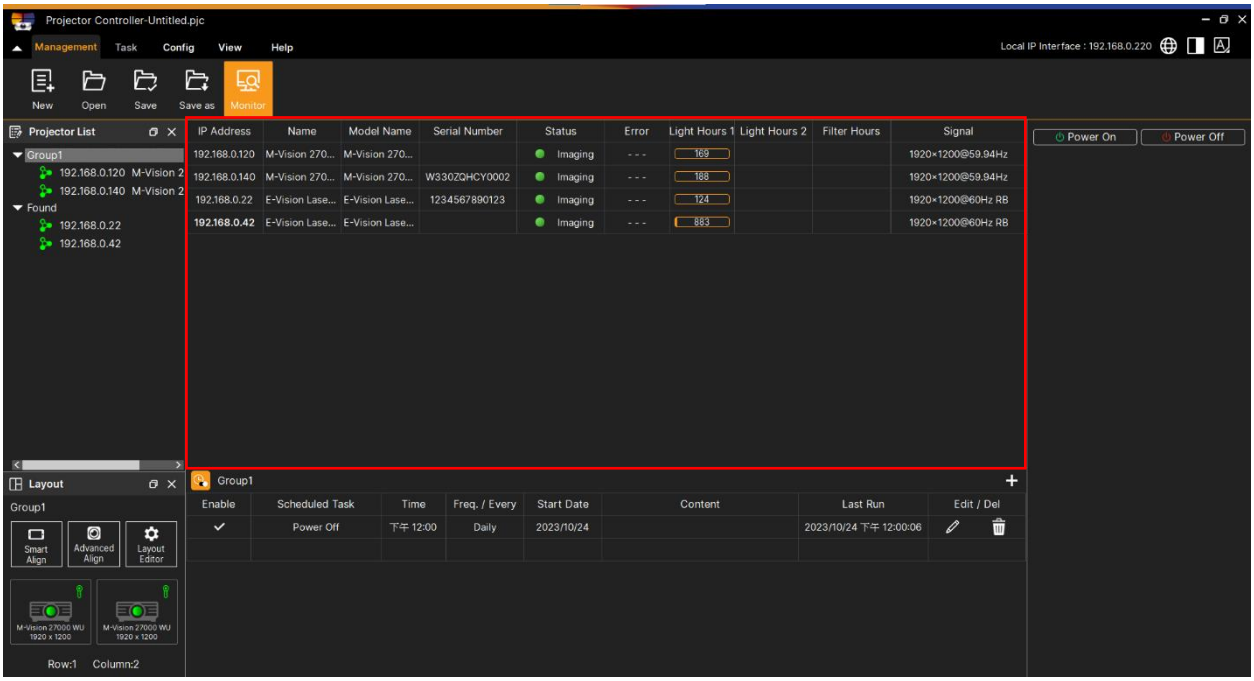
The toolbar include the management functions of these icons correspond as follows:



	New	Create a new project.
	Open	Restore all grouping projectors configure value.
	Save	Save the current configuration.
	Save as	Save the current configuration as a new project.
	Monitor	Monitoring projectors

10.1 Monitor

The monitor tab displays projector status as a list. The projector Information area is including the IP address, model name, serial number, status, projector errors, light source, filter operational hours and signal .



10.1.1 Projector Status

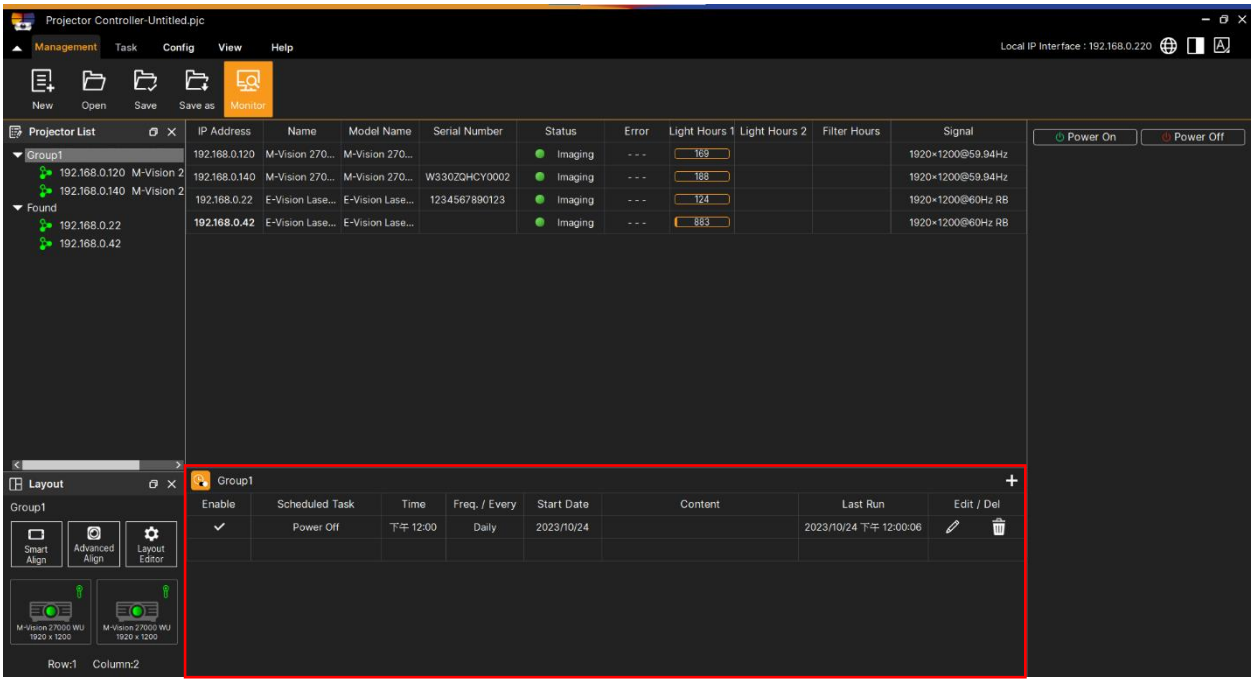
IP Address	Displays the connection IP address 192.168.0.0 ~ 192.168.xxx.xxx
Model Name	Displays the projector model name.
Serial Number	Display the projector serial number
Status	Shows the list of projectors that are ONLY in Error or Warning state.
Status Description	0 = Standby 1 = Warm up 2 = Imaging 3 = Cooling 4 = Error
Err	Projector errors message
Light Source1	Lamp1 Using Hours
Light Source2	Lamp2 Using Hours
Filter Hours	Projector filter operational hours
Signal	e.g., 1920x1200@60Hz RB

10.1.2 Group Control

Power On	Turn on group projectors.
Power Off	Turn off group projectors.

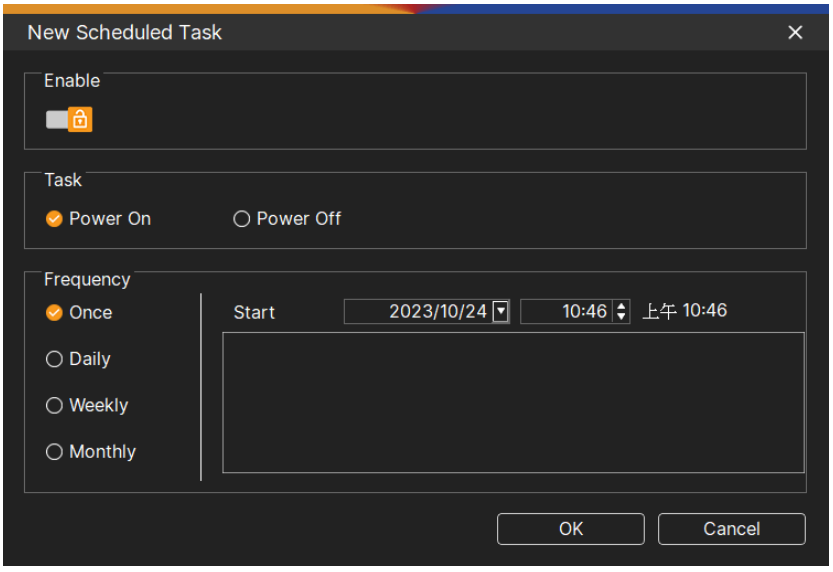
10.2 Scheduling

The projector can perform the following events on the specified date and schedule: The scheduling allows you to create scheduled tasks for an individual projector group when they are selected in the projector grouping, where the projector grouping will automatically perform a certain function at a given day/time.



	Group Enable	Check the box for a group scheduled task to enable
	Add	Click to add a new scheduled task.
	Edit	Click the edit button to edit the scheduled task
	Delete	Click the delete button to delete the scheduled task.

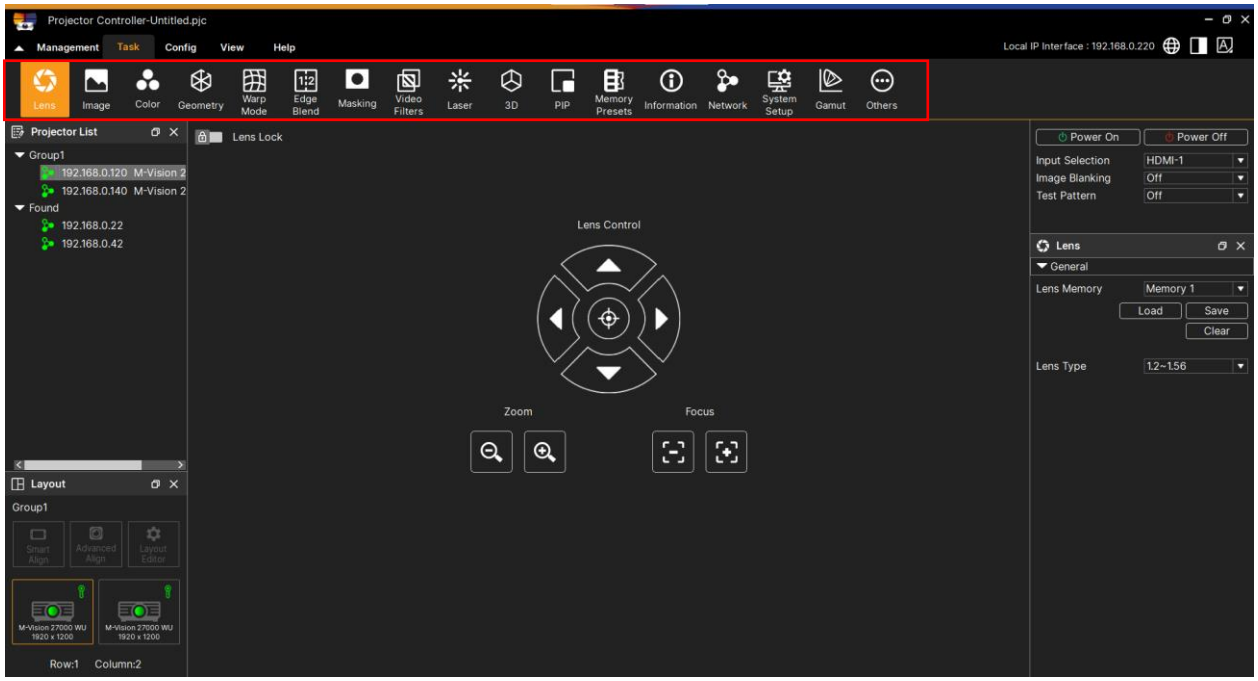
10.2.1 Creating or Editing a New Scheduled Task



Enable	Check the box for a scheduled task to enable.
Task	Check the radio button to task you want the projector to perform based on the set schedule. e.g., Power On/Off
Frequency	Set the frequency for the task. The available options are Once (Default), Daily, Weekly, Monthly, and Custom.
Start date	Enter the date when the scheduled task will begin.
Time	Set the time when you want the task to be performed.

11. Projector Adjustment

The toolbar include the projector setting functions of these icons correspond as follows:

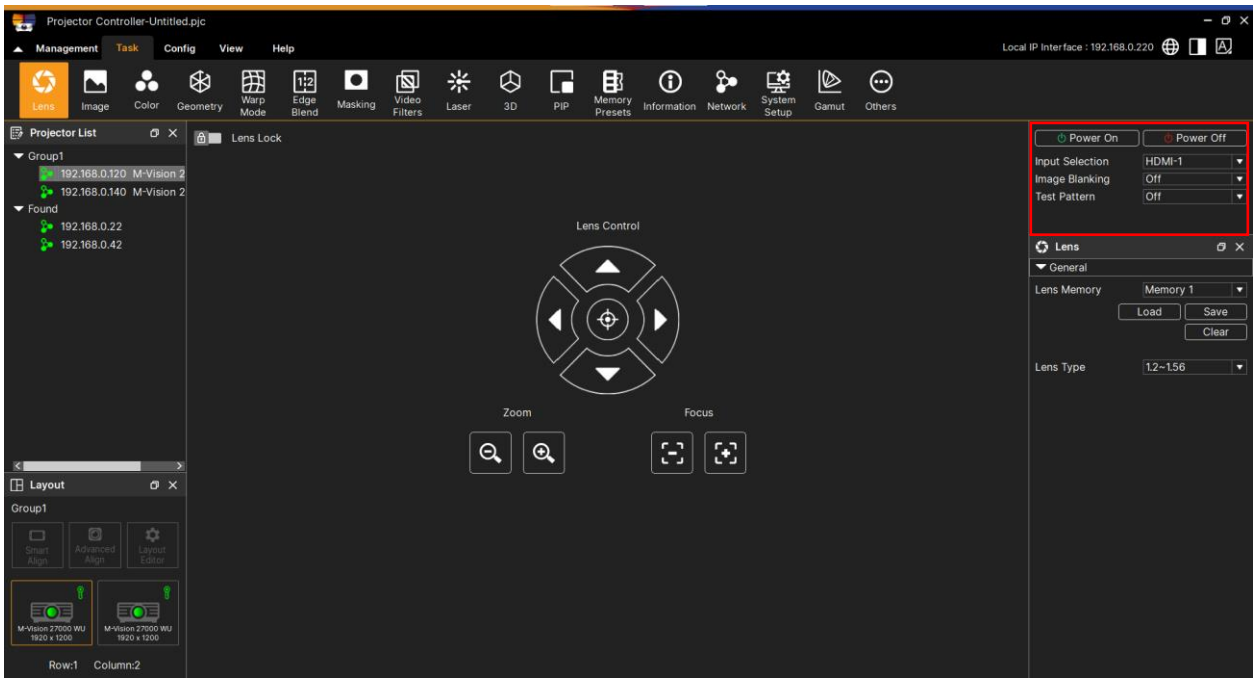


11.1 An individual projector adjustment features

	Lens	Controlling the lens
	Image	Adjusting the picture
	Color	The projector color adjustment
	Geometry	This menu allows you to compensate for image distortions caused by an unusual projection angle or irregular screen surface.
	Warp Mode	This function is used to correct the distortion of image.
	Edge Blend	Edge Blend function requires multiple projectors to simultaneously project on the same screen. Use this function to adjust the uniformity of image. To use this function, Edge Blending must be enabled on both projectors. The functions as follows can be only adjusted when Edge Blend is turned on.
	Mask	Sometimes, fitting an image to a specified screen shape without distorting the image's geometry will affect the shape of the image. This function can mask the extra image at the edge of the image.
	Video Filters	To adjust the sharpness and noise of the projected image.
	Laser	To adjust the power mode, power level, MUBC.
	3D	To adjust the 3D function.
	PIP	This function allows you to split the screen for displaying the images from two input sources.
	Memory Presets	Access this submenu to save up to four presets containing custom combinations of image settings, or to recall a saved preset.
	Information	This menu gives information about software and hardware

		configuration, input source and laser operating times.
	Network	Changing the Network configuration.
	System Setup	To adjust the OSD, EDID, Infrared...etc.
	Gamut	Set up user-defined color gamut values.
	Others	List all the op commands for this projector, you can also change the projector settings by entering the op command

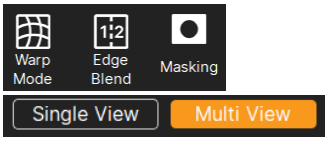
11.2 Common setting

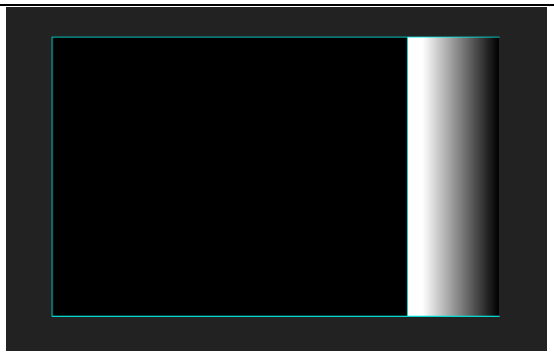
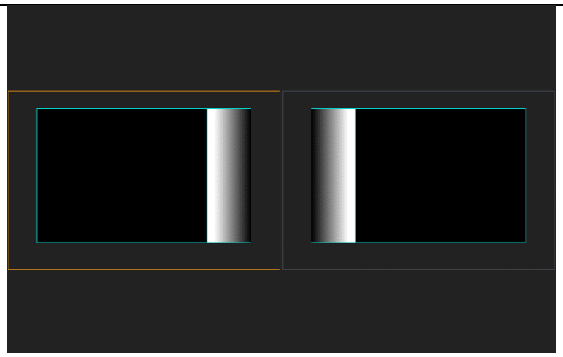
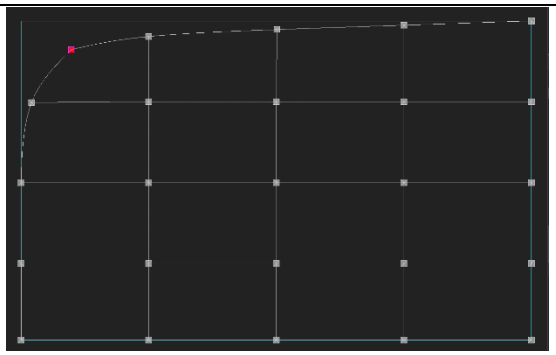
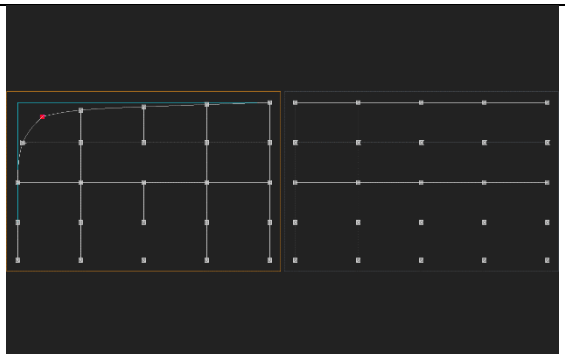
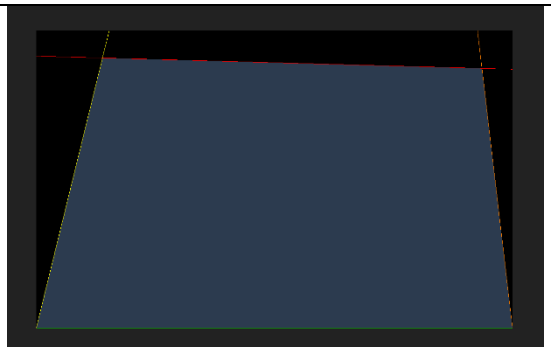
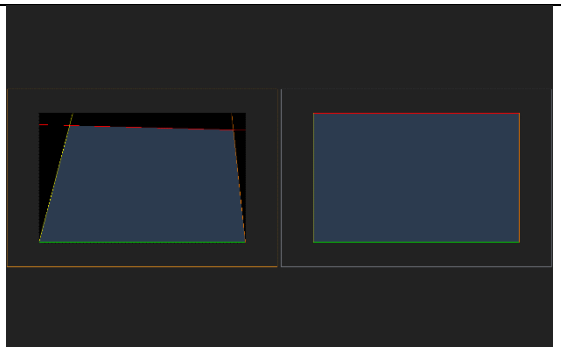


Power on/off	Turns a projector on or off both buttons are active when some of the selected projectors are off.
Input Selection	To select the input source; the Input options are as below. The available input source of the product is HDMI 1, HDMI 2, VGA, Component (BNC), HDBaseT, DVI and 3G-SDI.
Image Blanking	Digital Shutter on or off
Test Pattern	The built-in images are provided for installation and adjustment. You can select Test Pattern to show the test pattern. The available test pattern options are White, Green, Crosshatch, Color Bar, Black, Blue, H-Burst, Red, Chess Board and V Burst by model different and so on.

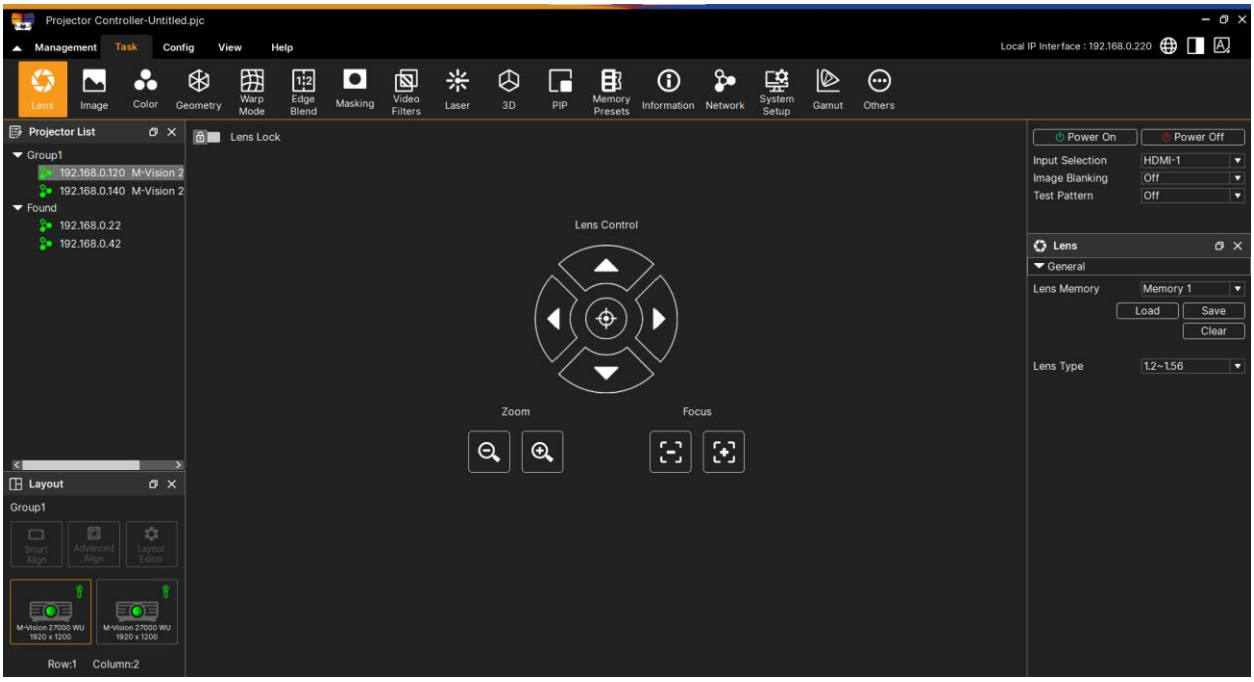
11.3 View Mode

You can click [Single View] or [Multi View] to switch view mode in [Blend], [Geometry], [Masking] function.



Single View	Multi View
	
	
	

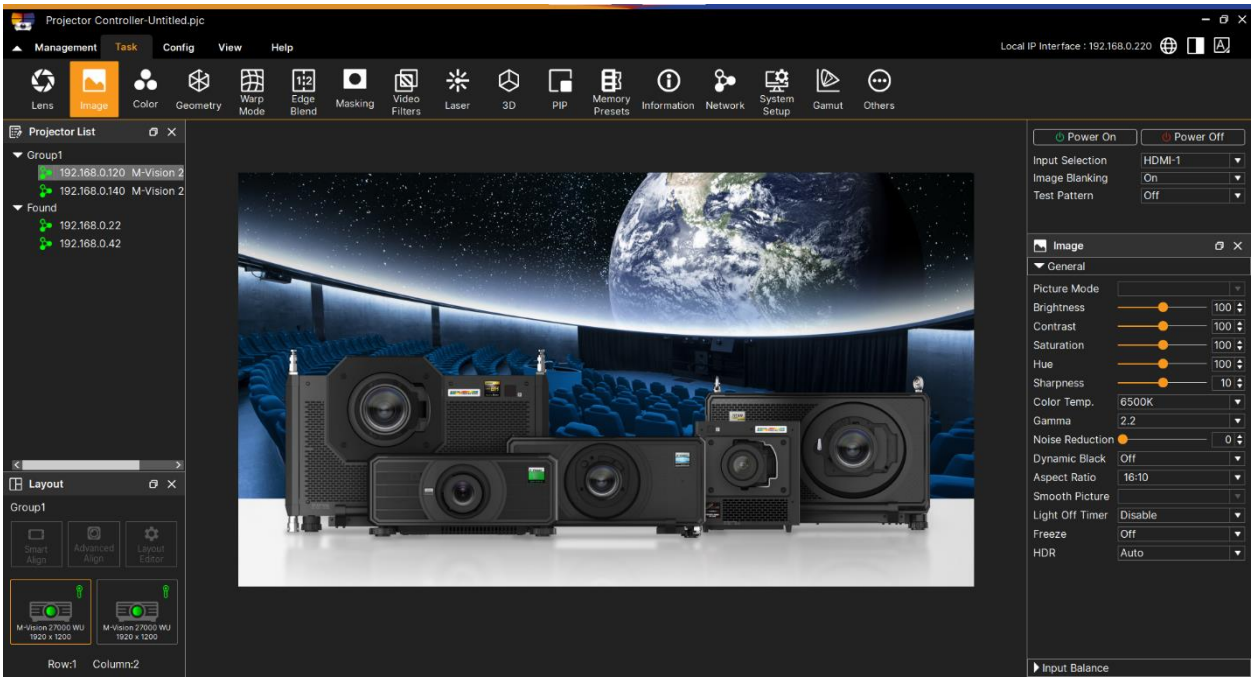
11.4 Lens



Lens Control	The image can be shifted vertically or horizontally without moving the projector. The lens shift range is shown in the percentage of the screen height and width, the maximum vertical shift range can be up to 64% of the projected image height and down to 33% of the height, and maximum horizontal shift range is 24% of the image width to right, 14% of the image width to the left. **Button repeat rate:** If you have configured a button as an increment step button and given it a repeat rate of 0.3 second, as long as you keep this button pressed, the one step command is sent every 0.3 seconds, and when it is sent to the 4th time, it will increase by 1 step.
Zoom	To adjust the zoom effect
Focus	To adjust the focus effect
Lens Memory	This projector supports Lens Memory function, Lens shift, Zoom and Focus memory can be stored in the projector up to 10 sets. You can load the stored memory setting to set up the lens automatically. **Load Memory:** To select the desired memory setting then the projector will adjust the Lens position, Zoom and Focus automatically. **Save Memory:** To select the memory set for storing the setting. **Clear Memory:** Select the memory set to be cleared memory set.
Lens Type	There are eight projections lens can be used in VVK power lens projector serials; the initial projection position of Ultra Short Throw (UST) Lens is different to other seven projection lenses. The projector preset two initial projection positions for these two types accordingly, Center Lens function can moves the lens to the initial position (center) automatically per the setting. Please set this option to UST Lens if Ultra Short Throw Lens is installed in the projector, otherwise please set it to. **Note:** • There are two default positions, one is for regular zoom or fixed focus lens (Non-UST), the reference position is 0% of image width in horizontal shift and

	0% of the image height in vertical shift; anther one is for Ultra Short Throw Lens (UST), the default position is around 0% of image width in horizontal shift and 56% of image height in • vertical shift. When performing Center Lens functions, projector will move the lens to the default position according to Lens type setting. • If Ultra Short Throw Lens is installed and UST Lens is selected, you can perform Center Lens to move Lens to initial projection position automatically. • If using Ultra Short Throw Lens and setting to Non-UST Lens, the lens will be moved to the position which is lower than the default position of Ultra Short Throw Lens after performing Center Lens function, it causes the projected image is blocked by the top cover of the projector. In this case, please perform the Lens shift function to move up the Lens till the image can be projected normally. • Please make sure Lens Type setting is set to Non-UST Lens then perform Center Lens function if other zoom lens or fixed focus lens is used, or lens shift range is limited, center position of the lens is not correct.
Lens Lock	This function can be used to disable lens control for preventing unauthorized operation or disoperation in lens control related functions including Lens Shift, Zoom/Focus adjustment and Center Lens. Recommend to turn on Lens Lock function to disable the Lens control after lens adjustment is done. **Note:** • Turning on Lens Lock will disable lens control function including Lens Shift, Center Lens and Zoom/Focus adjustment, please make sure Lens Lock is disable before you perform the lens control function.
Home	This is the lens calibration function, the projector calibrates the lens shift, focus and zoom parameters for the precise lens memory function. After performing this function, the lens will be moved to the center position as factory default setting. **Note:** • There are two default center positions for UST (Ultra Short Throw) Lens and non-UST Lens, make sure Lens type setting is correct before performing this function. • If Ultra Short Throw Lens is installed, make sure the support kit is detached before performing Center Lens.

11.5 Image

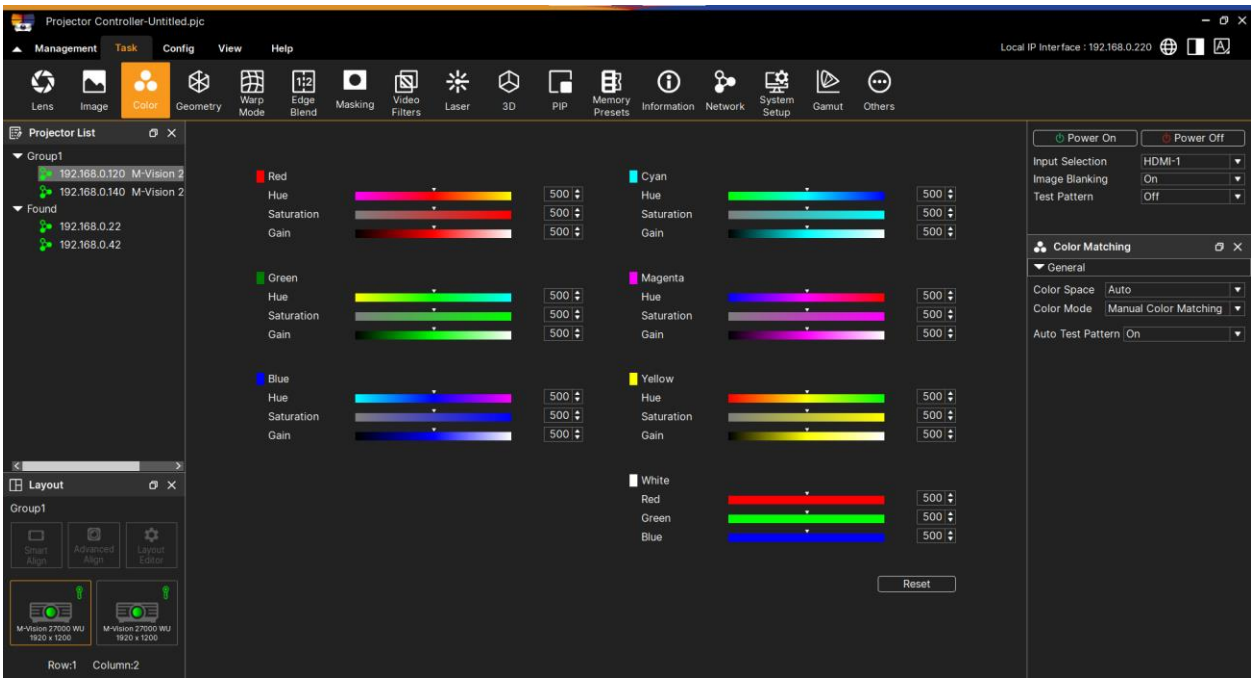


General	Picture Mode	To select desired picture mode • **High Bright:** The highest brightness output mode is suitable for the application where the highest brightness output is needed. • **Presentation:** The best projection effect is suitable for the presentation or picture. • **Video:** The mode is suitable for playing video content.
	Brightness	Increases or decreases the amount of black in the image The adjustment range is 0 to 99 and the recommend default setting is 50.
	Contrast	Increases or decreases the perceived difference between light and dark areas of the image. The adjustment range is 0 to 100 and the recommend default setting is 50.
	Saturation	To adjusts the color saturation of the image
	Hue	To adjusts the color hue of the image
	Sharpness	To adjust the sharpness of the image, which changes the high-frequency details.
	Color Temperature	The default of color temperature is Native, and it is suitable for most situations. As color temperature rises, the picture will appear bluer, while as the color temperature decreases, the picture will appear redder. The available options are Native, 5400K, 6500K, 7500K and 9300K
	Gamma	When the ambient light is so bright that may affect the projection of the details in the dim area of the image, you can change the gamma to adjust the chrominance. The available options are 1.0, 1.8, 2.0, 2.2, 2.35, 2.5 and S-Curve.
	Noise Reduction	To adjust the noise of the projected image. This function is used to remove the noise of the image with interlaced scanning input. Generally, noise reduction can lower the high-frequency details and

		make the image softer.
	Dynamic Black	This is function can be used to enhance the black level of the projected image.
	Aspect Ratio	Change the aspect ratio of the current image, depending on the model setting, options include: 5:4 / 4:3 / 16:10 / 16:9 / 1.88 / 2.35 / LetterBox / Source / Native
	Smooth Picture	A feature that can display a higher resolution source than the native resolution of the projector without loosing any pixel data.
	Light Off Timer	When Dynamic Black is On, the Light Off Timer will define if laser light source will turn off after a period of time has passed. The options are: Disable, 0.5, 1.0, 1.5, 2.0, 3.0, 4.0 seconds.
	Freeze	Freezes the current frame.
	HDR	Choose from AUTO, RPQ-500, RPQ500, RPQ1000 and HDRHLG. HDR (High Dynamic Range) is a new form of gamma developed to create more realistic experience when viewing images delivered using this format, such as scenes with bright sunlight. Unlike traditional gamma HDR is not device or installation independent. HDR content will come with a recommended brightness regardless of screen size. For best results as a guideline the following screens sizes are suggested.
Input Balance	Lift	These three options will shift the color spectrum for the whole image and change its brightness, if minimal amount of red, green or blue appears in the gray areas, you can adjust the offset of the corresponding color accordingly. By increasing the offset, the image brightness will become lower.
	Gain	These three options are used to increase or decrease the range of color input for the entire image. If minimal amount of red, green or blue appears in the gray areas, lower the gain of the corresponding color accordingly. As gain increases, the contrast of the image will become lower.

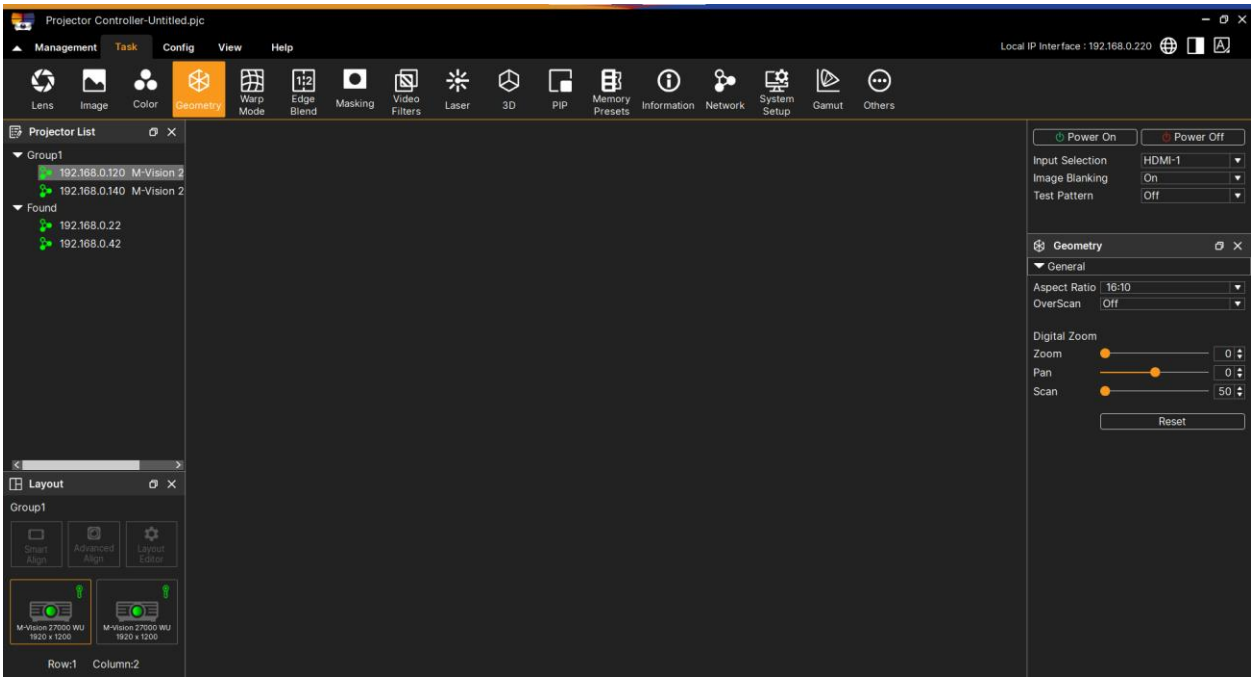
11.6 Color

HSG is a function to adjust Hue, Saturation and Gain independently, it allows for specified color adjustments that are more intuitive. You can adjust Hue, Saturation and Gain for Red, Green, Blue, Cyan, Magenta, Yellow and white independently.



Color Space		In most cases, the Auto setting determines the correct colorspace to use. If it does not, you can choose a specific colorspace: Choose from Auto, YPbPr, YCbCr, RGB PC and RGB Video.
Color Mode	ColorMax	Choose from HDTV, Peak, User 1, User 2, 3 Color Matching and 7 Color Matching. User 1 and User 2 are user-defined color gamuts set via the Setup > ColorMax menu.
	Manual color matching	HSG is a function to adjust Hue, Saturation and Gain independently, it allows for specified color adjustments that are more intuitive. You can adjust Hue, Saturation and Gain for Red, Green, Blue, Cyan, Magenta, Yellow and white independently.
	Color temperature	Please reference section 11.5.
	Gains and lifts	Please reference section 11.5.

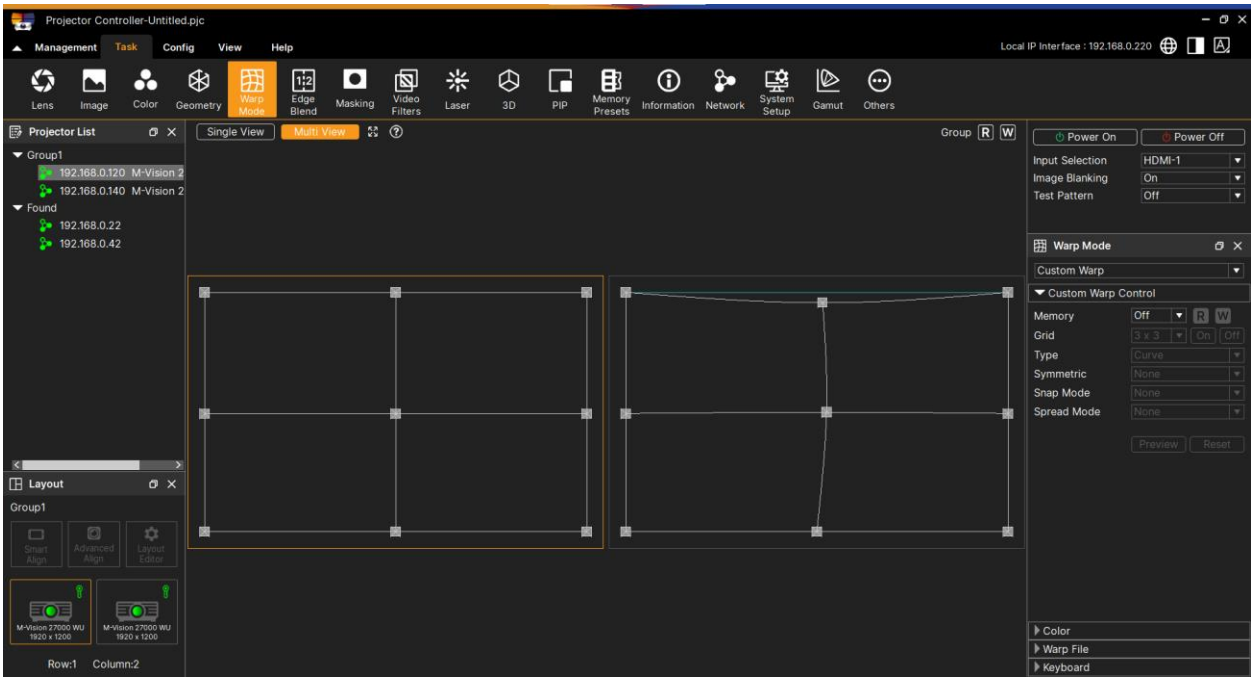
11.7 Geometry



General	Aspect Ratio	Change the aspect ratio of the current image, depending on the model setting, options include: 5:4 / 4:3 / 16:10 / 16:9 / 1.88 / 2.35 / LetterBox / Source / Native
	OverScan	Use this setting to compensate for noisy or badly defined image edges.
	Digital Zoom	Digital zooming enlarges a section of the image, while the area outside the enlarged section is cropped out to preserve the overall image size.

11.8 Warp Mode

This function is used to correct the distortion of image.

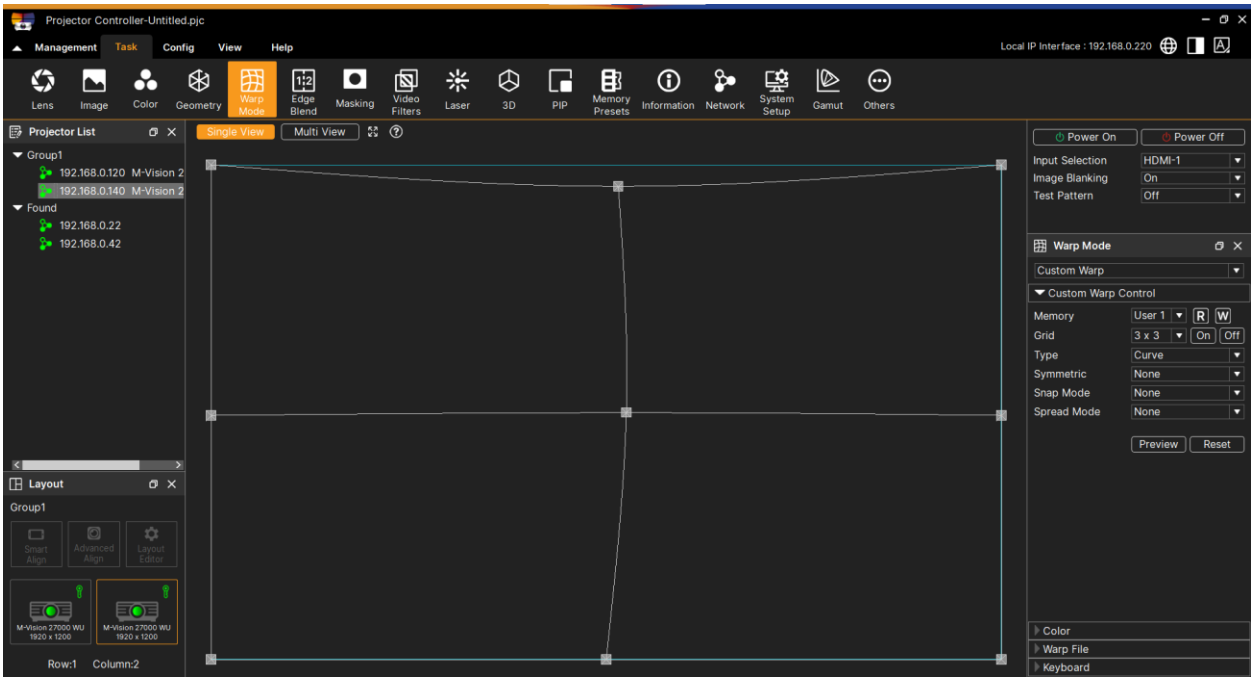


11.8.1 Basic

Keystone	To correct horizontal or vertical distortion
Rotation	To correct incorrect horizontal angle of image
Pincushion	To correct horizontal or vertical pincushion distortion.
Arc	To adjust the top, bottom, left and right arc on the projected picture.
Corner	To correct the corner distortion at top-left, top right, bottom-left and bottom-right of the picture.
Blanking	This function can adjust the edges of the image and hide surplus sections of the projection. To adjust the top, bottom, left and right blanking area on the projected picture.
Reset	All the settings toward blanking will set to default.

11.8.2 Custom Warp

Use image warping to correct image distortion and make the image appear correctly on a curved screen.



Memory		・ You can select Off / User1 / User2 ・ **Off :** Disable all custom warp and memory read, write and delete. ・ **User1/2 :** Enable custom warp. ・ Custom warp and Basic can only be selected by one of them.
Projector Control	W	Write to projector
	R	Read from projector
	Grid	Change the Warping Grid Resolution, You can choose the grid resolution 2x2 / 3x3 / 5x5 / 9x9 / 17x17
	Type	Flat / Curved lines
	Symmetric	Horizontal/vertical symmetry
	Snap Mode	Fixed in horizontal/vertical movement
	Spread Mode	Spring mode assigns the motion of a point linearly to other points along its vertical and horizontal axes. This reduces the grouping of points and makes the image smooths.
	Distance	Distance between each step when moving with the keyboard
Color	Node Color	Grid node color
	Node Border	Grid ode border color
	Selected Node	Selected grid node color
	Selected Border	Selected grid node border color
	Line Color	Grid line color
Projector Settings		Open custom warp profile
		Save custom warp profile

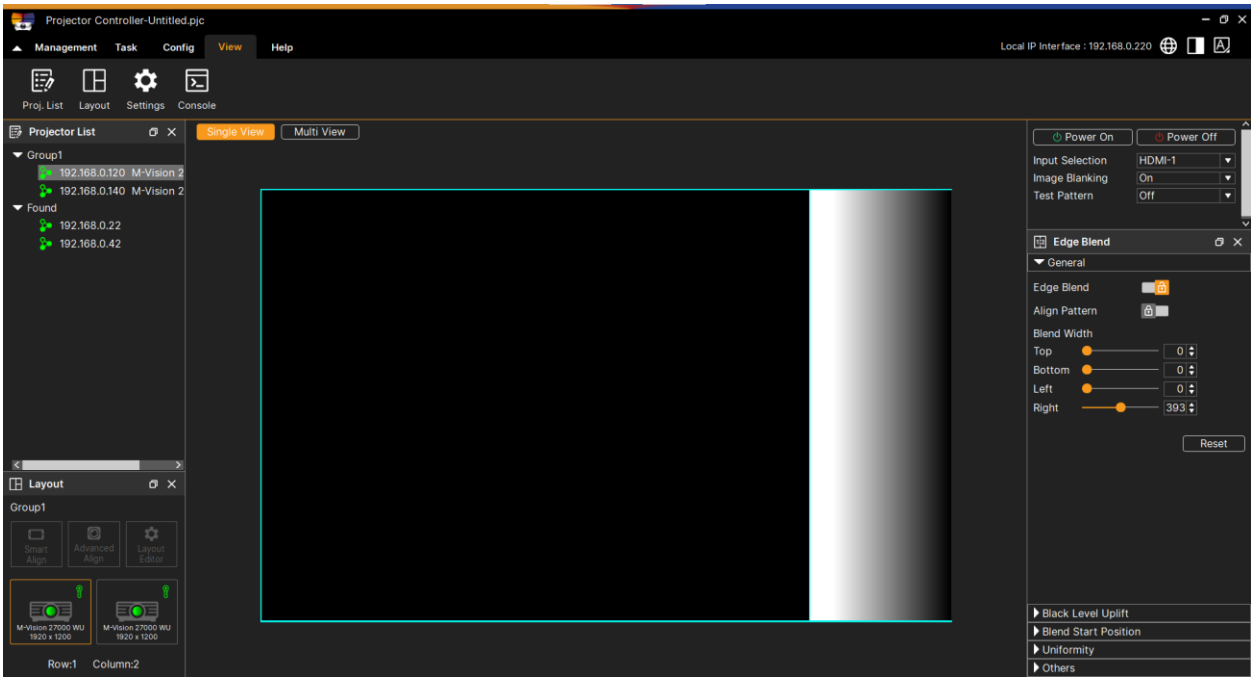
Customer Warp Edit

Each point is shown to correspond to each specific location on the projected image.

Move a line of points		When you move a line of points, the line maintains its shape. · Click anywhere on a grid line in window to select the entire line. · Click and drag the line to a new position.
Move a group of points		· Drag over a group of points. · Release the mouse button to complete the selection. · Click and drag these points to a new location.
Others Warp Edit		
Mouse Right Button	Marco Key	**Undo :** Ctrl+Z, **Redo :** Ctrl+Y, **Copy :** Ctrl+C, **Paste :** Ctrl+V
		Aligning the selected grid points
		Reset the selected grid point to its original point
		Symmetrical horizontal selection of grid points
		Symmetrical selection of grid points vertically
		Distribute the selected horizontal lines evenly over the length of the lines
		Distribute the selected vertical lines evenly over the length of the line

11.9 Edge Blend

Blend function requires multiple projectors to simultaneously project on the same screen. Use this function to adjust the uniformity of image. To use this function, Blending must be enabled on both projectors. The functions as follows can be only adjusted when Blend is turned on. Recommends that you complete your warp settings before creating a blend.

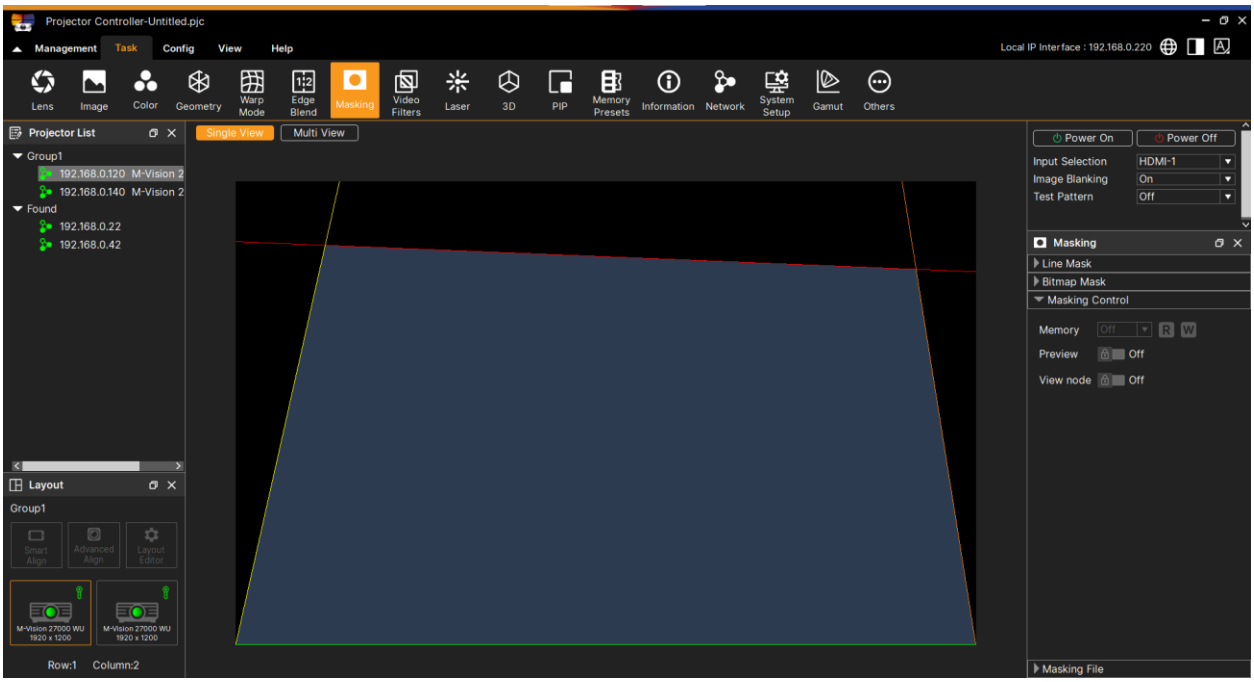


Edge Blend	If the user would like to function Edge Blend, turn this function to On.
Align Pattern	If user turns this function to On, the projector will show pattern for user to adjust the overlapping part of projection
White Level (Blending)	White Level(Blending) is used to set the overlapped area for blending in multi-projection application, the overlapping. When projecting White, the area where the two images overlap is projected twice the projectors' white output levels. The solution is to adjust the White Level. First make sure that the units connected to the projectors are outputting black. Then increase the White Level (Top, Bottom, Left, Right and All) until the non-overlap area's brightness matches the overlap area.
Black Level (Blending)	The purpose of Black Level is to increase the black level of non-overlapping area. When projecting black, the area where the two images overlap projects twice the projectors' black output levels. The solution is to adjust the Black Level. First make sure that the units connected to the projectors are outputting black. Then increase the Black Level (Top, Bottom, Left, and Right) until the non-overlap area's brightness matches the overlap area.
Gain(R\G\B)	These three options are used to increase or decrease the range of color input for the entire image. If minimal amount of red, green or blue appears in the gray areas, lower the gain of the corresponding color accordingly. As gain increases, the contrast of the image will become lower.
Blend Start	Set the start position (Top, Bottom, Left, and Right) of overlapped area for blending.
Reset	All the settings toward edge blend will set to default.

Others	Gamma	When the ambient light is so bright that may affect the projection of the details in the dim area of the image, you can change the gamma to adjust the chrominance. The available options are 1.0, 1.8, 2.0, 2.2, 2.35, 2.5 and S-Curve.
	Color Temp.	The default of color temperature is Native, and it is suitable for most situations. As color temperature rises, the picture will appear bluer, while as the color temperature decreases, the picture will appear redder. The available options are Native, 5400K, 6500K, 7500K and 9300K depend on model different setting.

11.10 Masking

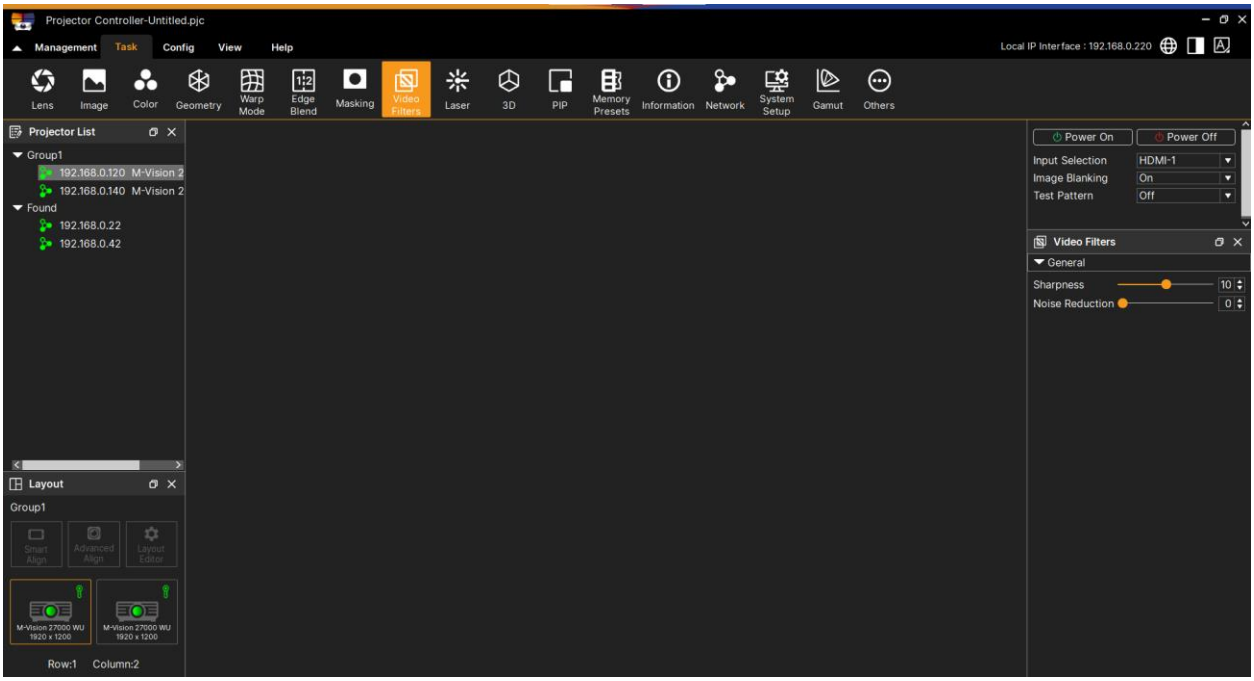
Use masking to conceal the unused edges of an image.



Line Mask	Active	Enable the masking function by 'Line Mask'
	Invert	Invert the masking area by 'Line Mask'
	Edge	Enable / disable individual edge and select its type and color.
Bitmap Mask	Active	Enable the bitmap masking function
	Invert	Invert bitmap image
	+	Insert a bitmap image from an external bitmap file
	🗑	Delete current selected bitmap image
Projector Control	Memory	You can select masking Off / User1 / User2 in the projector
	W	Apply and write masking image with masking project file to projector
	R	Read masking project file from projector
	Preview	Apply masking effect to projector but not saving into
	View node	View the masking control nodes on projector display
Project Settings	📂	Open existing masking parameters
	💾	Save the masking parameters
	⬆	Export masking image to a file
	↻	Reset masking
Without Bitmap (Mouse Right	Undo	Undo action
	Redo	Redo action
	Edit points	Enable edit control point of line masking

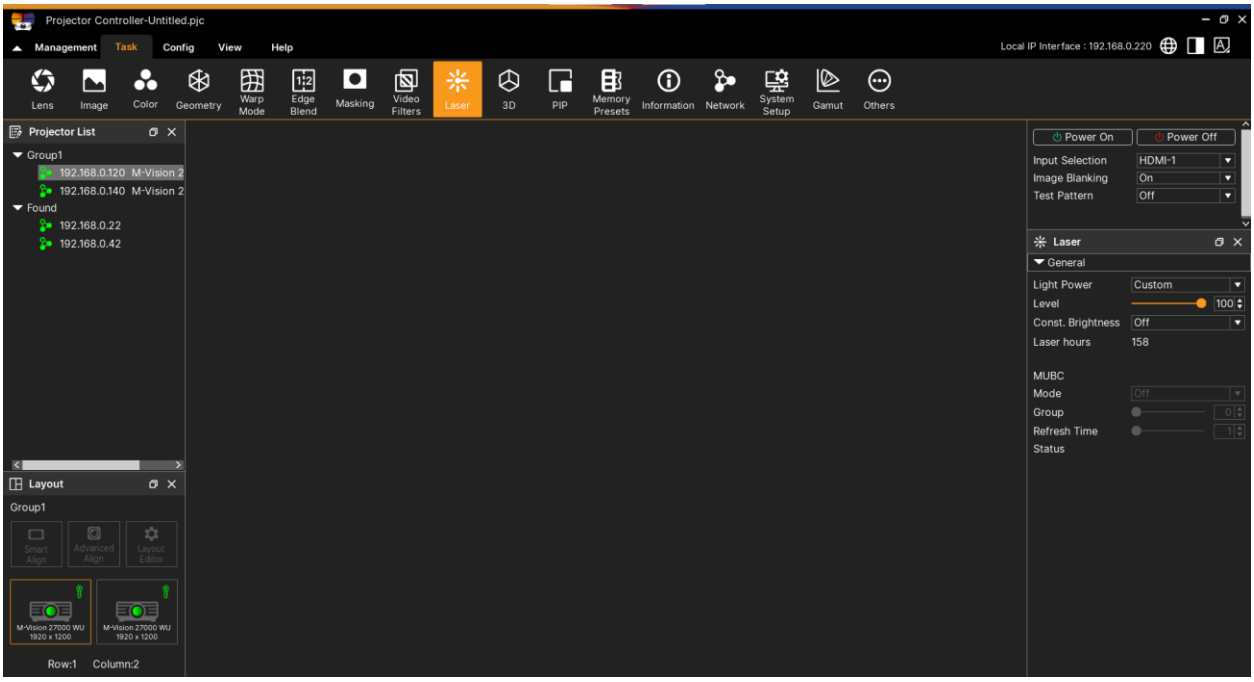
Button)	Add point	Add a control point to line when mouse at control line
	Delete point	Delete control point
	Set fine tune	Enable the fine tune mode of selected line (use keyboard to move control line)
	Copy view	Copy mask view of current IP
	Paste view	Paste mask view to other IP
	Rotate view	Rotate current masking to right / left, or flip horizontal / vertical
With Bitmap case (Mouse Right Button)	Undo	Undo action
	Redo	Redo action
	Edit points	Enable edit control point of line masking
	Cut	Cut bitmap image
	Copy	Copy bitmap image
	Paste	Paste bitmap image
	Change picture	Change picture of current selected bitmap image
	Bring to top	Bring current selected bitmap image to top most or upper one layer
	Bring to bottom	Bring selected bitmap image to bottom most or lower one layer
	Rotate view	Rotate current masking to right / left, or flip horizontal / vertical
Others Masking Edit		
	Mode of masking view aligning to custom warp	
	View custom warp in masking view	
	Full screen for mode of masking view aligning to custom warp	

11.11 Video Filters



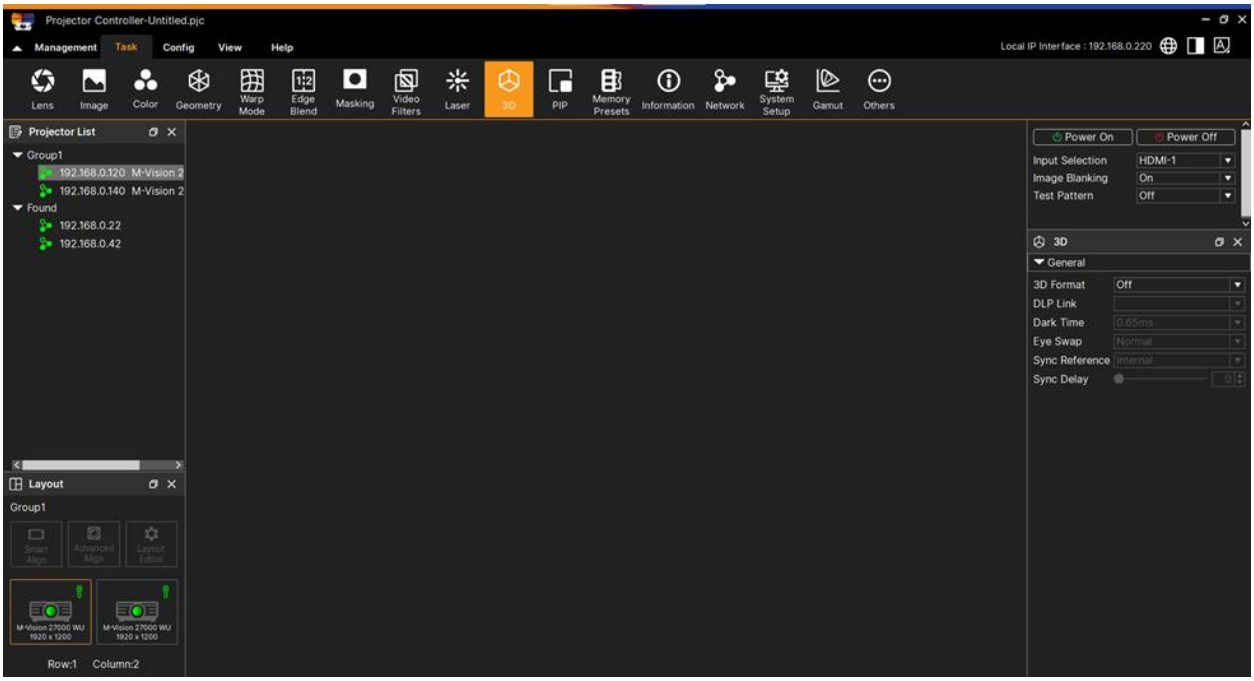
General	Sharpness	To adjust the sharpness of the image, which changes the high-frequency details.
	Noise Reduction	To adjust the noise of the projected image. This function is used to remove the noise of the image with interlaced scanning input. Generally, noise reduction can lower the high-frequency details and make the image softer.

11.12 Laser



Light Power Control	Light Power	The function to select the Eco, Normal or Custom Power Level mode. **Eco :** Projection operates in the energy-saving mode, which is equivalent to 80 % power of light source. **Normal :** Projection operating with normal light power can obtain the brightest projection display. **Custom Power Level :** User can decide the power level depending on his or her preference.
	Const. Brightness	Turn on or off
MUBC (Multi Unit Brightness Correction)		MUBC is available when multiple projectors are synced together. Over time, the output power of the lasers in the projector will diminish. The output power of the lasers in different projectors may diminish at different rates. When multiple units are synced, this can lead to different units operating at different laser power levels, causing the projected images to display at differing brightnesses.

11.13 3D

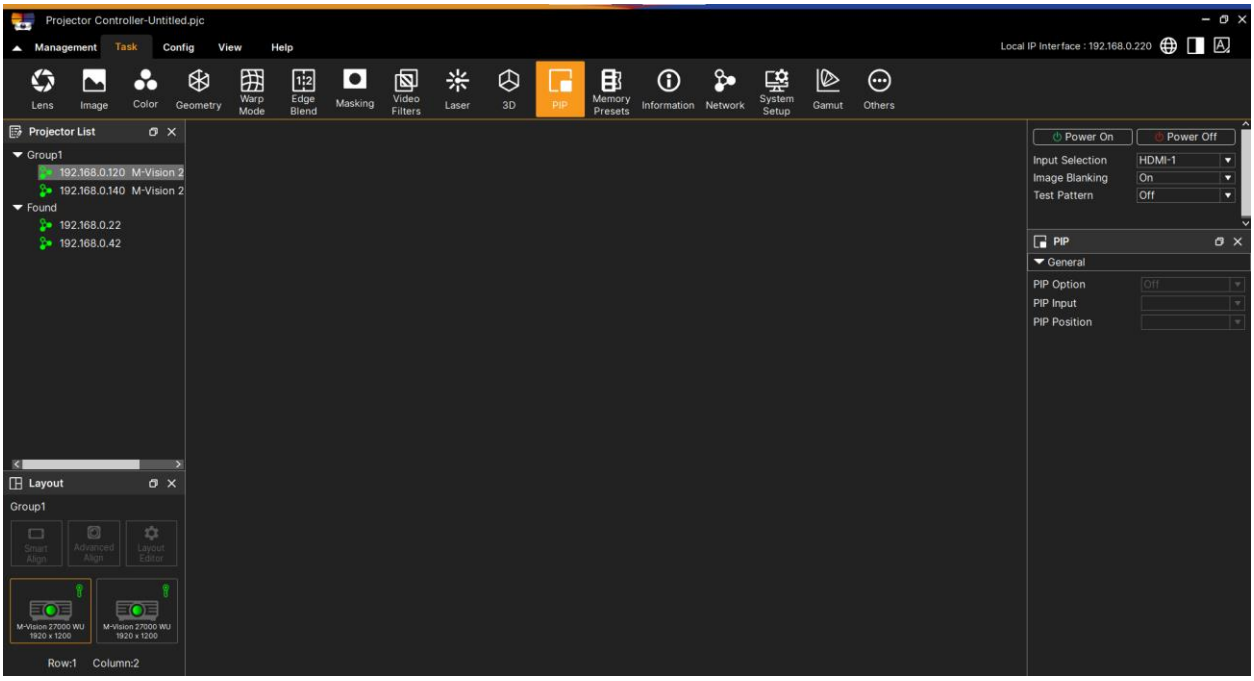


3D Format	**Off :** Turn off the 3D Display Mode. • When Auto, Side by Side, Top and Bottom, or Frame Sequential is selected, the 3D Mode will be turned on. • To turn off the 3D Mode, select “Off” and press “ENTER”. Auto: Allow the 3D format to automatically detect the formats of Frame Packing, • Top and Bottom, and Side by Side. The input signal is HDMI 1.4a 3D. **Side by Side (Half):** This option is only applicable to input signal HDMI 1.4a 3D or HDMI signal sent by HDBaseT Transmitter. **Top and Bottom:** This option is only applicable to input signal HDMI 1.4a 3D or HDMI signal sent by HDBaseT Transmitter. Frame Sequential: Set input format under Frame Sequential. This function is to set the 3D format and sync method. The projector detects the type of input signals and provides relevant options for setting. Before performing 3D setting, make sure that the input signal is connected.
Eye Swap	If the 3D image transmitted to the 3D glasses is reverse, you can set the Eye Swap to “Reverse” to normalize the image. Otherwise, keeping mode of “Normal” would be suggested.
DLP Link	Turns a projector 3D function on or off.
Dark Time	Adjust 3D dark time (0.65ms,1.3ms,1.95ms) Creates a blank time interval between left and right frames to allow for LCD shutter glasses, Z screen, or rotating 3D wheel to synchronize the output. See Dark Time and Output Delay.
Sync Delay	The non-image time in Microseconds (μS). Offset 3D stereo sync output in relation to dark time interval. Valid values are -0 to 99.
Sync Reference	**External :** Signal is sent from external 3D sync signal receiver. **Internal :** Signal is sent by the projector, 3D sync signal is DLP Link The projector provides DLP Link and 3D IR sync for 3D display, you can specify the built-in DLP Link or external 3D IR transmitter to synchronize the signal of the 3D glasses, or select Auto to set the sync signal depended on the 3D format and

	if external 3D sync device is connected. This function is only applied to the condition that 3D Format is Frame Sequential or external 3D sync device is connected to the projector.

11.14 PIP

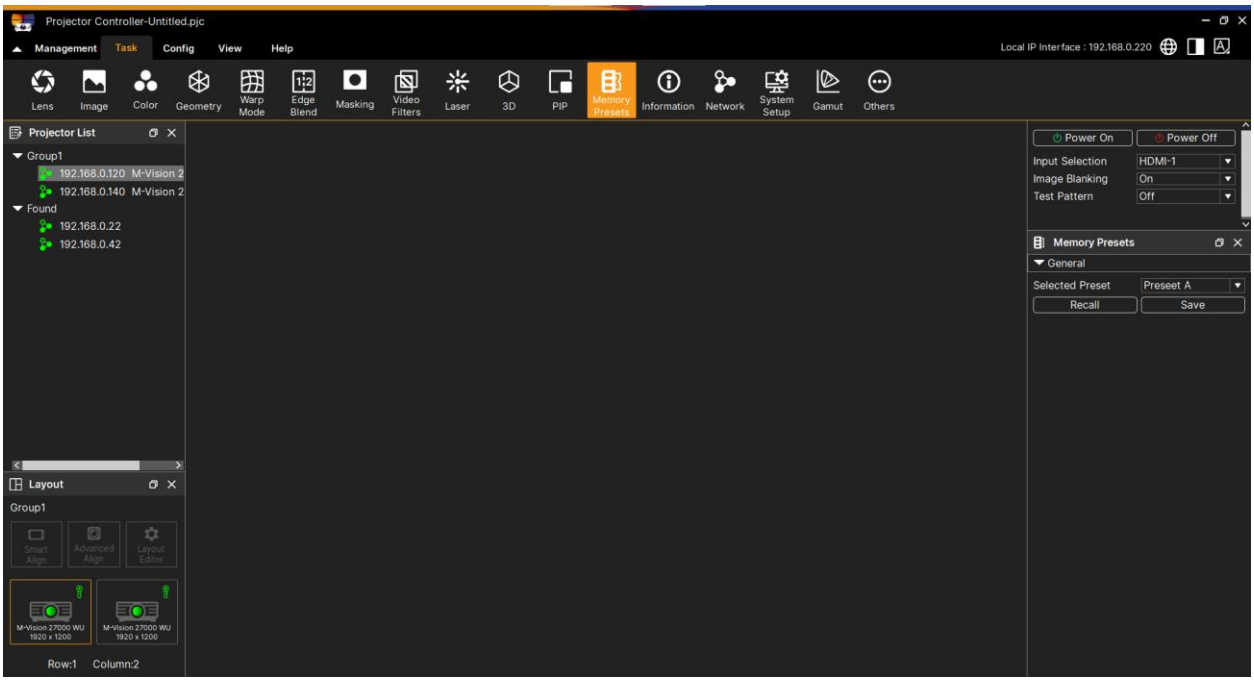
This function allows you to split the screen for displaying the images from two input sources.



PIP Option	on/off, enable PIP by choosing “ON”, and two windows will be shown on the projected picture. The larger one is the primary picture, the smaller one is the sub picture. By choosing “Off”, PIP function will be disabled, and only one picture window projected.
PIP Input	HDMI1, HDMI2, VGA, Component BNC, DVI-D, 3GSDI, New Item, HDBaseT, Select the display available sources for the sub picture, and then select a source.
PIP Position	To find preferred location of PIP window :Top Left, Top Right, Bottom Left, Bottom Right, Picture By Picture,

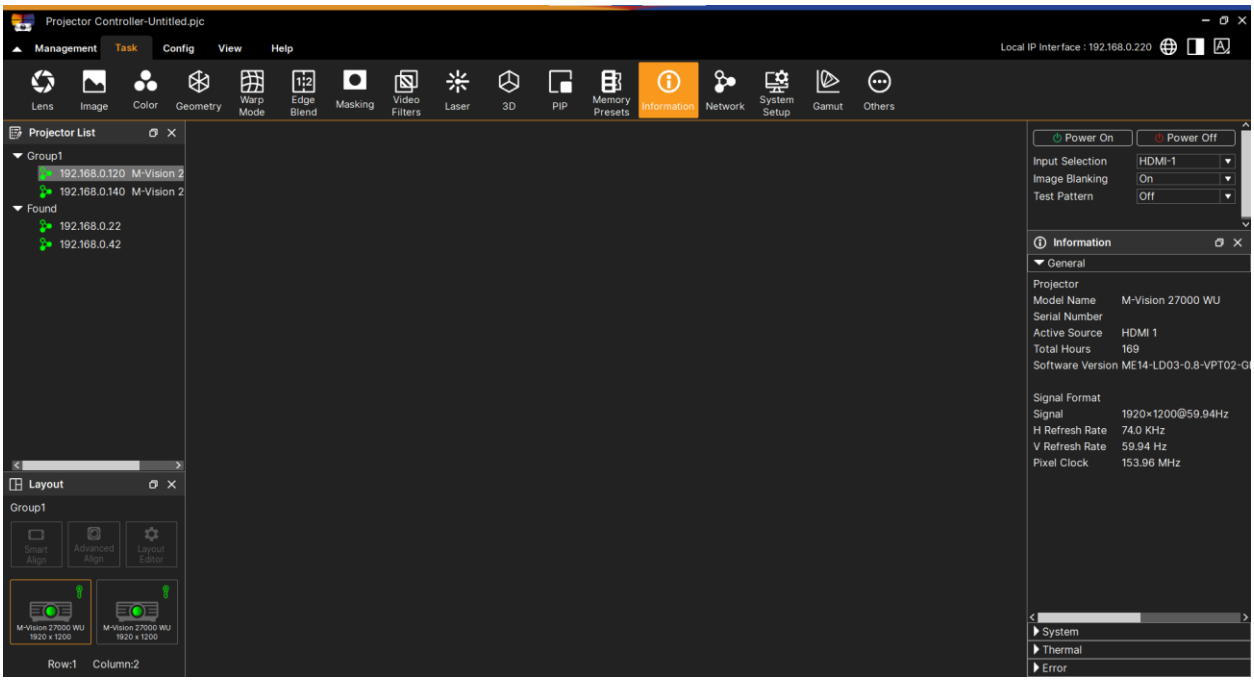
11.15 Memory Presets

Access this submenu to save up to four presets containing custom combinations of image settings, or to recall a saved preset.

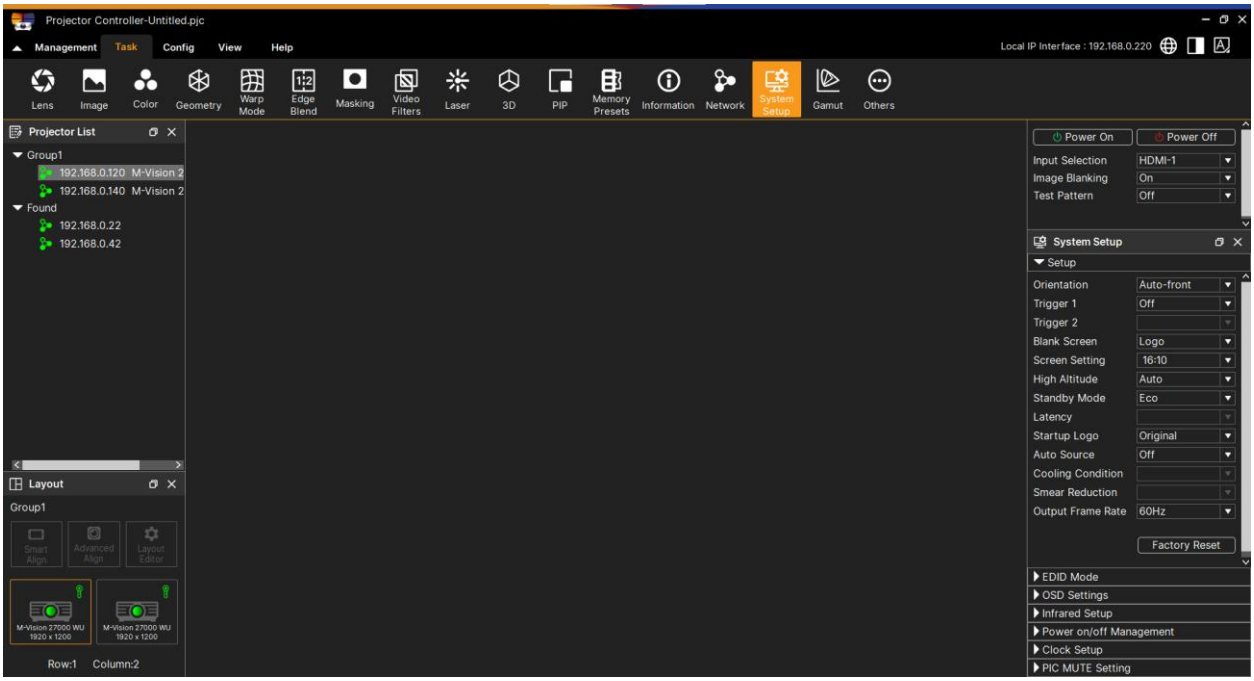


11.16 Information

This menu gives information about software and hardware configuration, input source and laser operating times.



11.17 System Setup



11.17.1 Display Option

Language	Select desisted language, the available languages options are English, Española, Deutsch, Portuguese, 简体中文, 繁體中文, 日本語, 한국어. depend on different model.
Position	Adjust projector OSD menu position through this function, the available position options are at Top-Left, Top-Right, Bottom-Left, Bottom-Right and center of the screen.
Transparency	Change the transparency of projector OSD Menu, the background color of the OSD can be adjusted from darker to lighter if you want to display complete projected image.
Time Out	Set up the timer to exit OSD menu, the available options are Always On, 10 Seconds, 30 Seconds and 60 Seconds.
Message Box	This function allows you to disable the pop-up message at bottom-right of the screen.

11.17.2 Projector Setup

Projection Mode	The projection mode option can be used to change the orientation of the projected image or flip the projected image. **Front Desktop :** Install the projector on the table and project the image on the screen forward. **Front Ceiling :** Mount the projector on the ceiling and project the image on the screen forward, the image is overturned. **Rear Desktop :** Install the projector on the table and project the image from the rear of the screen. **Rear Ceiling :** Mount the projector on the ceiling and project the image from the rear of the screen, the image is overturned.
Auto Source	The Auto Source functions “ON” lets projector automatically search for the input signal.

Auto Power off	This function is set to OFF by default. When it is set to ON and no input signal is received within 20 minutes, the projector will turn off automatically.
Auto Power on	This function is set to OFF by default. When it is set to ON, the projector will turn on automatically when y AC power is turned on next time. You can use this function and the power switch (instead of the remote control) to turn on the projector. Set this function to OFF if it's unnecessary.
Screen Format	Sleet the screen format to 16:10, 16:9 and 4:3.
Trigger	The projector is provided with a set of trigger output. User can connect the trigger to the screen with projector by the cable. If user does so, once the projector is powered, the screen would be automatically turned on as well. There is a 2-3 second delay to activate this function. The selectable aspect ratios are as follows: **Off :** Turn off screen trigger. **5:4 :** Outputs 12V of power on Trigger when Aspect Ratio is set to 5:4. **4:3 :** Outputs 12V of power on Trigger when Aspect Ratio is set to 4:3. **16:10 :** Outputs 12V of power on Trigger when Aspect Ratio is set to 16:10. **16:9 :** Outputs 12V of power on Trigger when Aspect Ratio is set to 16:9. **1.88 :** Outputs 12V of power on Trigger when Aspect Ratio is set to 1.88. **2.35 :** Outputs 12V of power on Trigger when Aspect Ratio is set to 2.35. **Letterbox :** Outputs 12V of power on Trigger when Aspect Ratio is set to Letterbox. **Native :** Outputs 12V of power on Trigger when Aspect Ratio is set to Native. **Unscaled :** Outputs 12V of power on Trigger when Aspect Ratio is set to Unscaled. **Auto :** Outputs 12V of power on Trigger automatically.
Remote Sensor	The default is On. However, there are three conditions that will be suggested to turn off "Remote Sensor"; the possible condition is that if the user uses wired control, he can set this function to Off, or that if the projector IR location is exposed to the bright sunlight or fluorescence, or that projector control is not controlled by remote. If the user would like to reset to On, user can only set by OSD panel.

11.17.3 Service

Colling Condition	The projector is equipped with orientation sensor for switching cooling condition automatically; you can set it to Auto or adjust the cooling condition by manual. **Front:** The projector is installed on the table. **Ceiling** + Front: The Projector is mounted on the ceiling. **Freetilt :** The projector is installed with tile angle; the angle is over 30 degree. **Auto :** Built-in sensor detects the installation orientation and switches to corresponding cooling condition. **Note :** Incorrect Projection Mode setting may affect hot air exhausting from the projector, the heat and high temperature may cause the projector to enter system protection or damage component.
High Altitude	Use this function to adjust the cooling fan of the projector to get well cooling if the projector is installed in an area over 5000 feet. The projector is equipped with altitude sensor which is capable of detecting atmosphere pressure for estimating altitude; it can adjust automatically to corresponding

	setting based on estimated altitude if this option is set to Auto you can select On or Off. **Off :** Turn off High Altitude mode if the projector is installed in an area under 5000 feet. **On :** Turn on High Altitude mode if the projector is installed in an area over 5000 feet. **Auto :** Set up this mode automatically by estimated altitude. **Note :** • Estimate Altitude is calculated by atmosphere pressure, it may have the tolerance comparing to actual altitude. • If any over temperature or system protection message, please adjust High Altitude by Manual. • In some application, regular cooling fan setting may not supply enough cold air for system cooling even the projector is installed in an area under 5000 feet. In this case, please set High Altitude to On.
Temperature	Monitor all temperature values in the system in normal
Water Pump RPM	Monitor the Water Pump of system cooling
Factory Reset	Reset all system to default setting
Fan speed(RPM)	Monitor the speed of all cooling fans in the system is normal

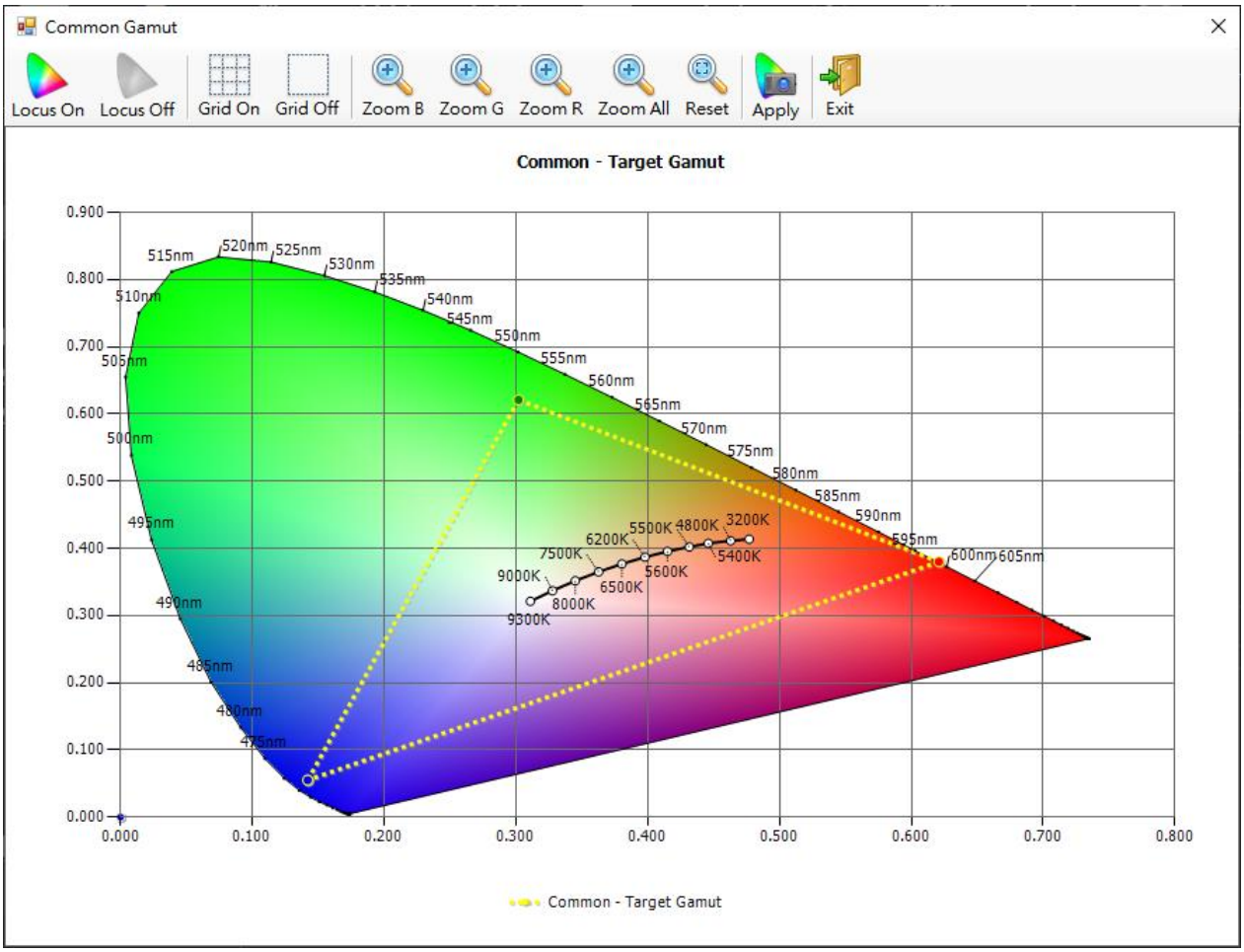
11.17.4 Network Config for projector

Standby Power	To turn on /off projector standby power.
IP Address	To specify an IP address, press the Enter button to show the IP address input window. Input the number in the IP address. Network IP Address 172. xxx. xxx. xxx.
Subnet Mask	Set the subnet mask. The input method is the same as the setting for IP address.
Gateway	Set the gateway. The input method is the same as the setting for IP address.
DSN	Set the DNS. The input method is the same as the setting for IP address.
DHCP	Set DHCP to ON/OFF. When DHCP is set to ON, the DHCP server of the domain will assign an IP address to the projector. The IP address will appear on the IP address window without need to make any input. If the domain cannot assign any IP address, 0.0.0.0 will be shown on the IP address window.
Apply	Changing network configuration. **Note :** Changing the Network configuration may interrupt the connection, please search the projector again. Some system might need to reset.

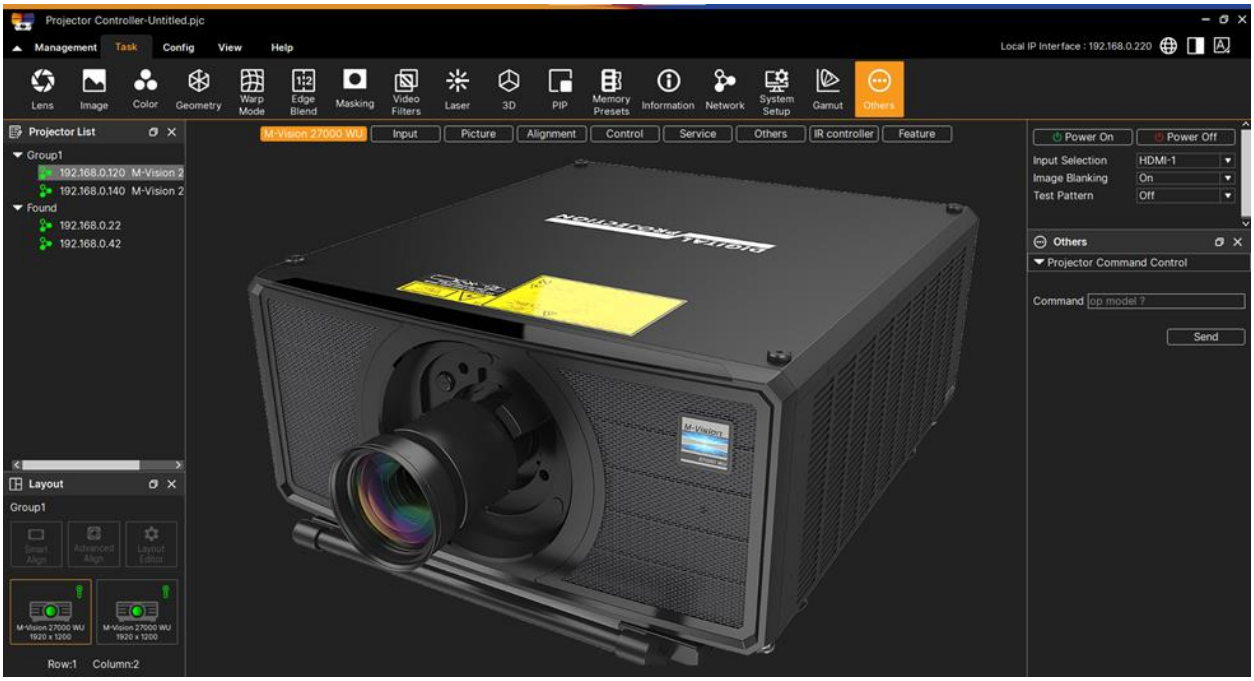
Note : Changing the Network configuration may interrupt the connection, please discovery the projector again. Some system might need to reset.

11.18 Gamut

Set up user-defined color gamut values.



11.19 Others



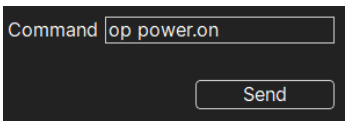
11.19.1 Projector Command Control

Instruction set, including function name, op command, value and console.

OP Name	OP name list
OP CMD	OP command list
Send	Send command to target projector

Op command functions example:

Turn On projector:



Turn Off projector:

12. Advanced Align

12.1 System Requirements

Part 1. Computer System

The software runs on Windows 10 and Windows 11

- Use NVIDIA Quadro based system whenever possible. This results in the greatest flexibility in number of projectors and supports all use cases. All current Quadro GPUs (from P series) have the capability to run warp & blend.
- Windows 10 and 11 recommended

Part 2. NVIDIA Card

For Desktop Hooking (Professional NVIDIA GPU, Support Mosaic Function).

2021 Release Information NVIDIA (Quadro / NVIDIA RTX Products).

NVIDIA RTX 6000 Ada Generation, NVIDIA RTX A6000, NVIDIA RTX A5500, NVIDIA RTX A5000, NVIDIA RTX A4500, NVIDIA RTX A4000, NVIDIA RTX A2000 | A2000 12GB, NVIDIA T1000 | T1000 8GB, NVIDIA T600, NVIDIA T400 | T400 4GB, Quadro RTX 8000, Quadro RTX 6000, Quadro RTX 5000, Quadro RTX 4000, Quadro GV100, Quadro GP100, Quadro P6000, Quadro P5000, Quadro P4000, Quadro P2000, Quadro P1000, Quadro P600, Quadro P400, Quadro M6000 24GB, Quadro M6000, Quadro M5000, Quadro M4000, Quadro M2000, Quadro K6000, Quadro K5200, Quadro K5000, Quadro K4000, Quadro K4200, Quadro K2200, Quadro K2000, Quadro K2000D, Quadro K1200, Quadro K620, Quadro K600, Quadro K420, Quadro 410

2023 Release information from NVIDIA (Quadro / NVIDIA RTX Products).

- NVIDIA RTX 6000 Ada Generation, NVIDIA RTX A6000, NVIDIA RTX A5500, NVIDIA RTX A5000, NVIDIA RTX A4500, NVIDIA RTX A4000, NVIDIA RTX A2000 | A2000 12GB, NVIDIA T1000 | T1000 8GB, NVIDIA T600, NVIDIA T400 | T400 4GB, Quadro RTX 8000, Quadro RTX 6000, Quadro RTX 5000, Quadro RTX 4000
- The version we already test.
- NVIDIA A2000 with driver Version.537.13
- NVIDIA K5000 with driver Versions. ---.--
- Consider very special driver and system configuration requirements.

Part 3 Nvidia Card Operating Procedures

Step1 Go to the website where we can download the driver of NVIDIA. Recommend download the driver from the official website

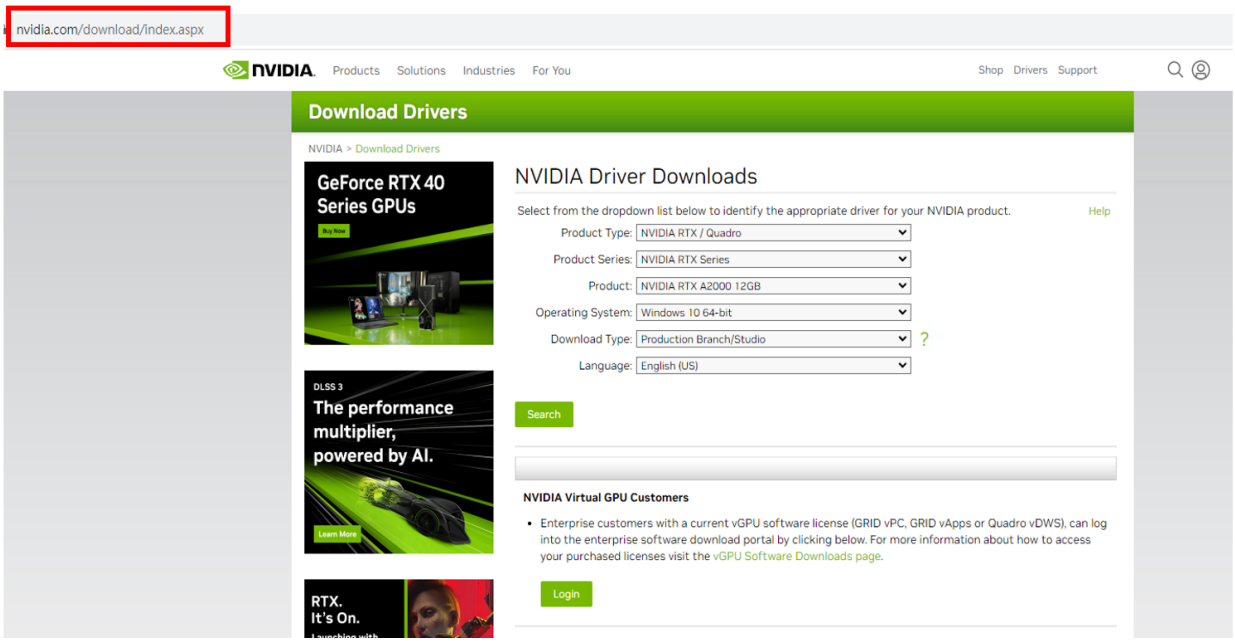


Fig 1.3.1 Nvidia driver search page – Web URL

Step 2 Select the version of NVIDIA and search the driver

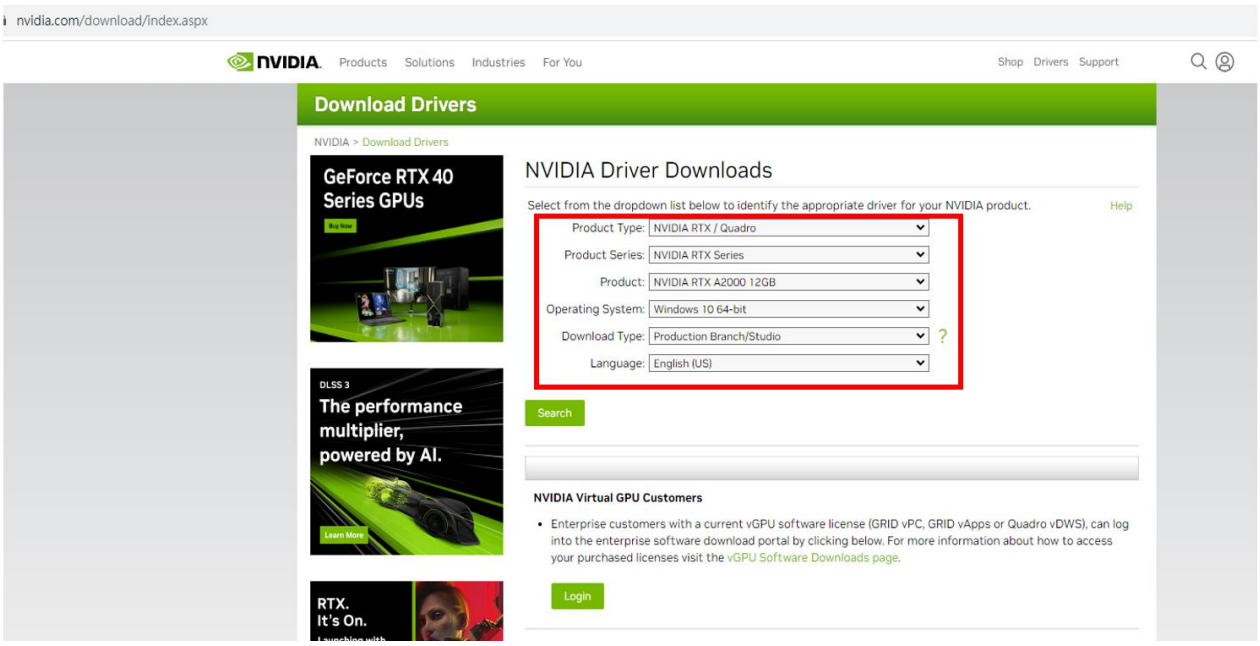
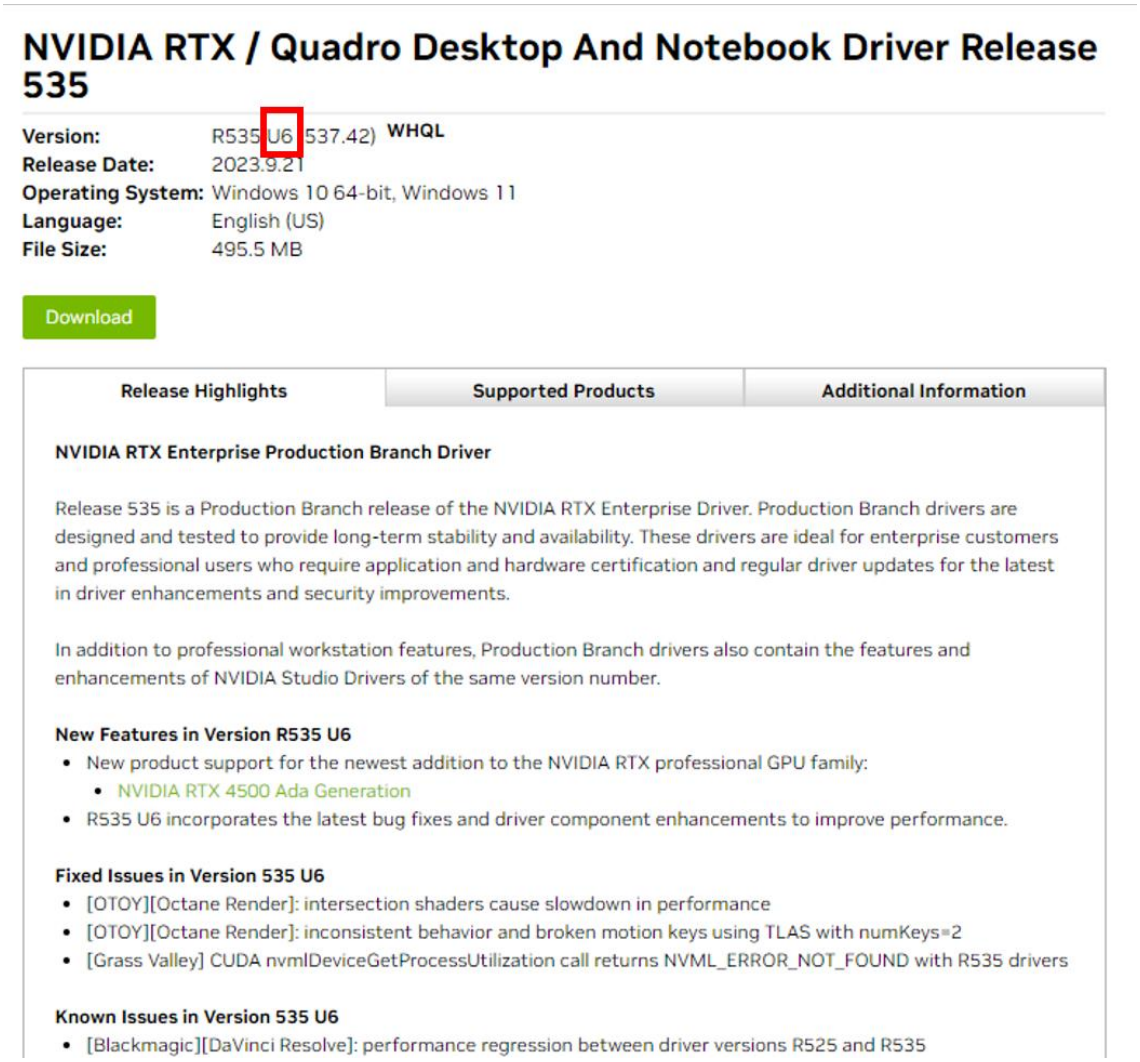


Fig 1.3.2 Nvidia driver search page – select option

Step3 Check the versions of NVIDIA Card must up U5 Versions and download it.



NVIDIA RTX / Quadro Desktop And Notebook Driver Release 535

Version: R535 U6 (537.42) **WHQL**
Release Date: 2023.9.21
Operating System: Windows 10 64-bit, Windows 11
Language: English (US)
File Size: 495.5 MB

Download

Release Highlights | Supported Products | Additional Information

NVIDIA RTX Enterprise Production Branch Driver

Release 535 is a Production Branch release of the NVIDIA RTX Enterprise Driver. Production Branch drivers are designed and tested to provide long-term stability and availability. These drivers are ideal for enterprise customers and professional users who require application and hardware certification and regular driver updates for the latest in driver enhancements and security improvements.

In addition to professional workstation features, Production Branch drivers also contain the features and enhancements of NVIDIA Studio Drivers of the same version number.

New Features in Version R535 U6

- New product support for the newest addition to the NVIDIA RTX professional GPU family:
  - NVIDIA RTX 4500 Ada Generation
- R535 U6 incorporates the latest bug fixes and driver component enhancements to improve performance.

Fixed Issues in Version 535 U6

- [OTOY][Octane Render]: intersection shaders cause slowdown in performance
- [OTOY][Octane Render]: inconsistent behavior and broken motion keys using TLAS with numKeys=2
- [Grass Valley] CUDA nvmlDeviceGetProcessUtilization call returns NVML_ERROR_NOT_FOUND with R535 drivers

Known Issues in Version 535 U6

- [Blackmagic][DaVinci Resolve]: performance regression between driver versions R525 and R535

Fig 1.3.3 Nvidia driver download page

12.2 Software Installation

Part 1. Digital Projection Projector Control Tool Installation Procedure

Step 1. Run the execution file as following execution file.

Fig 2.1.1 Digital Projection.exe

Step 2. Press Next to skip the installation

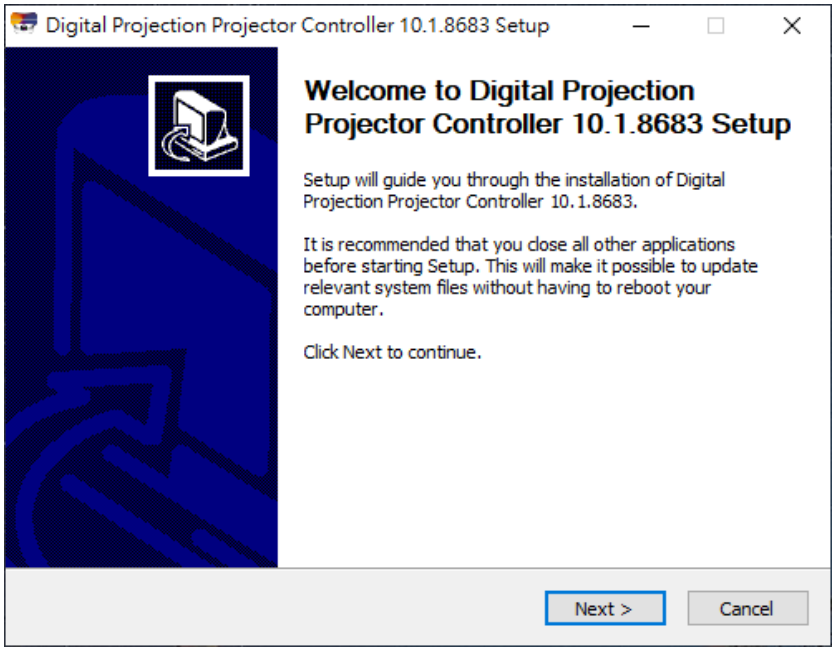


Fig 2.1.2 Software introduction

Step 3. Agree the license

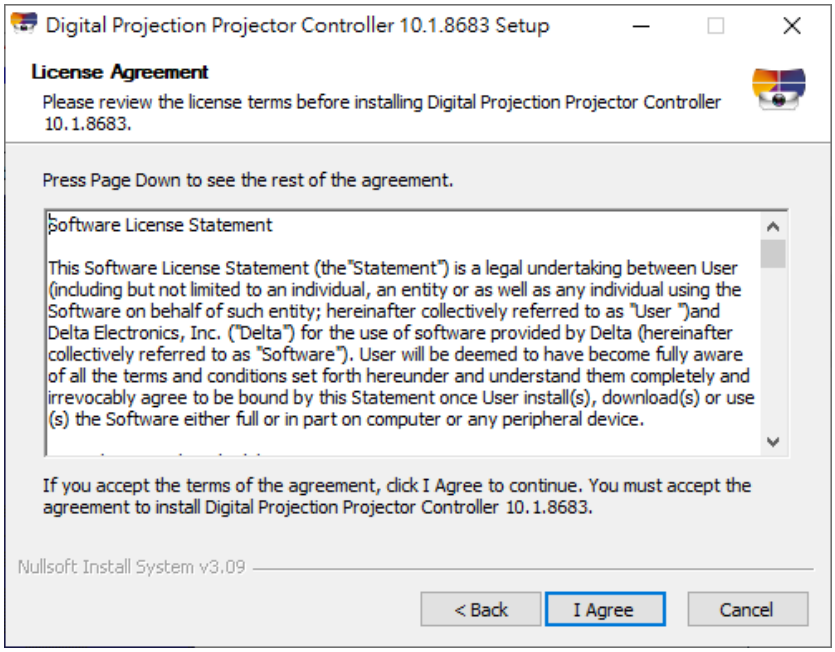


Fig 2.1.3 License agreement

Step 4. Set the destination folder of software

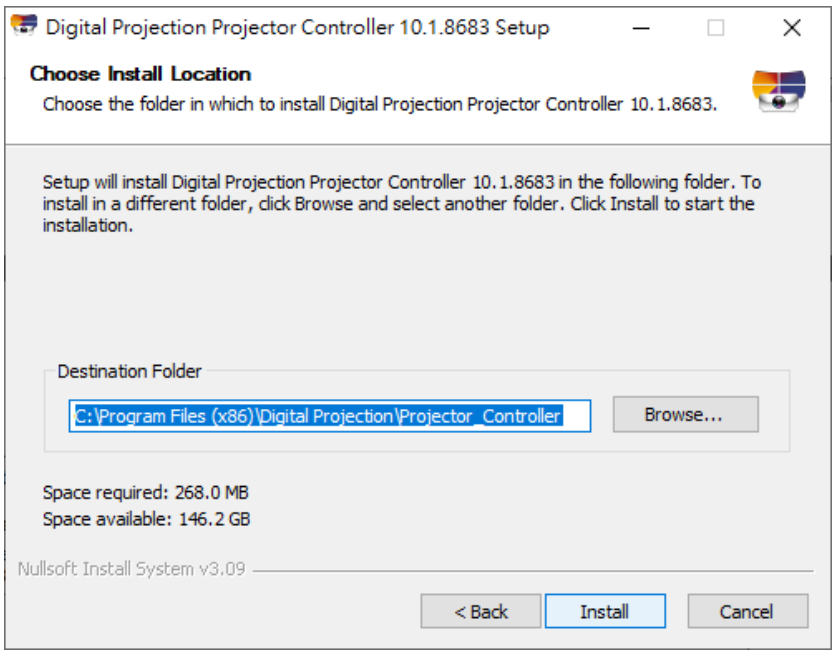


Fig 2.1.4 Destination folder

Step 5. Installing

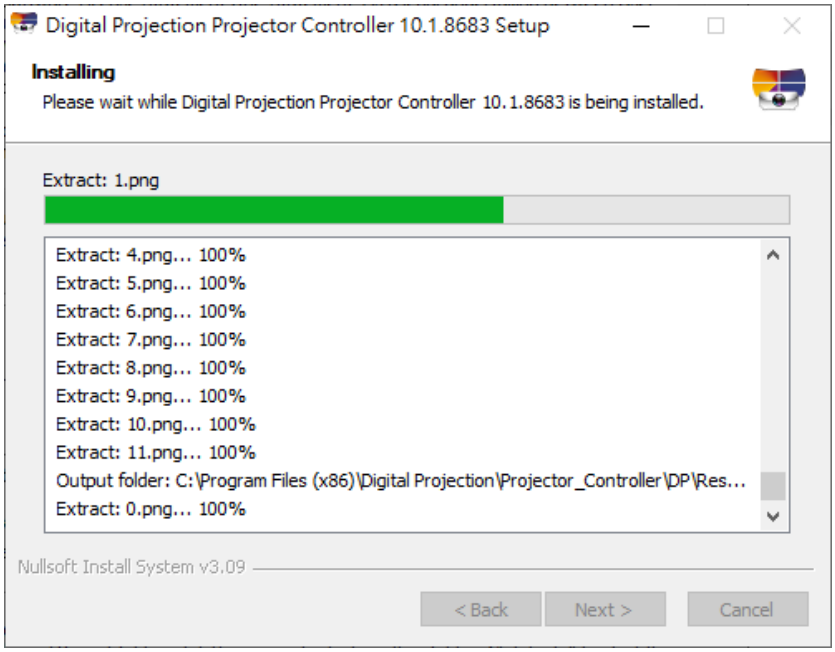


Fig 2.1.5 Installation procedure

Step 6. Finish

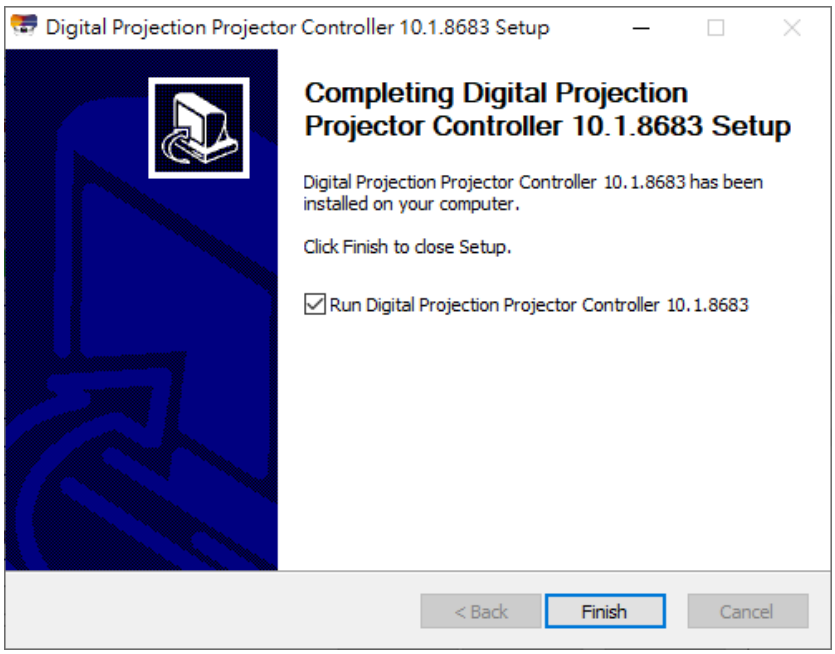


Fig 2.1.6 Finish installation

Part 2. Advanced Align

Step 1. Run the execution file as following execution file.

Fig 2.2.1 Advanced Aligned.exe

Step 2. Select the language

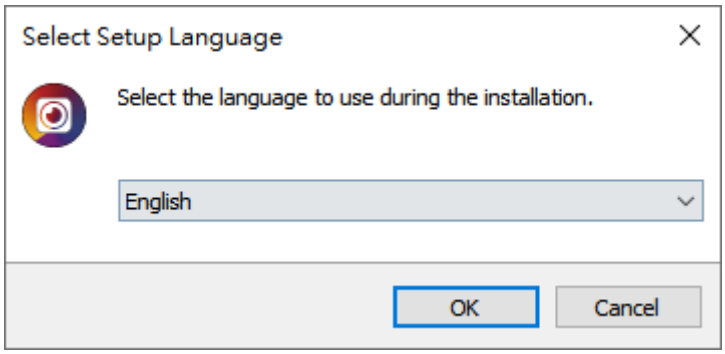


Fig 2.2.2 Select language

Step 3. If you already installed the software, it will uninstall first.

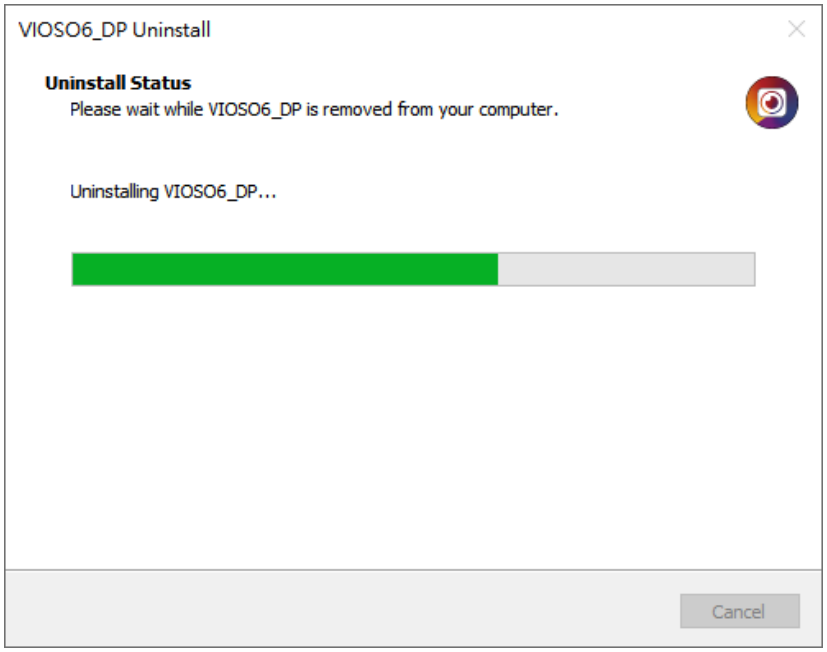


Fig 2.2.3 Uninstall the previews version

Step 4. Accept the agreement and go next.

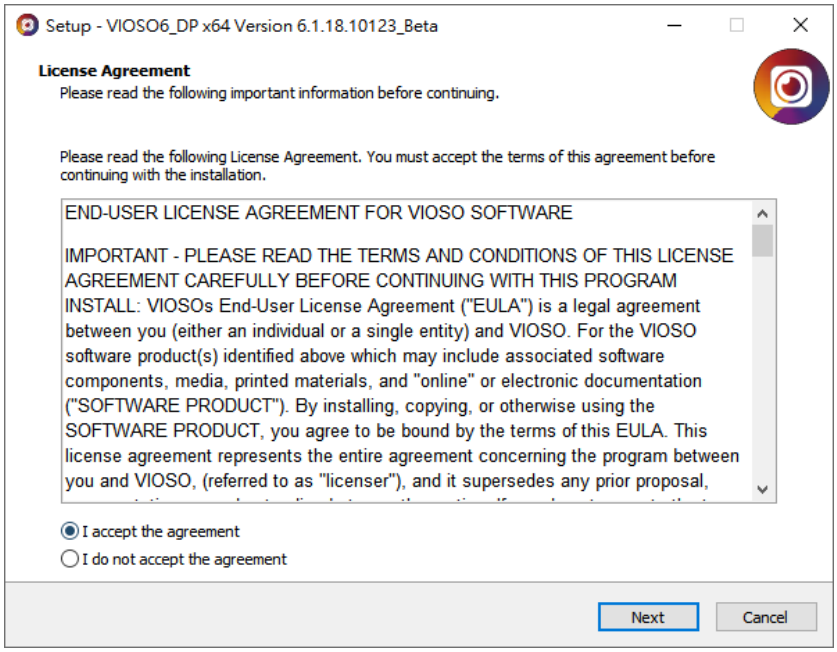


Fig 2.2.4 License agreement

Step 5. Browse the installation folder.

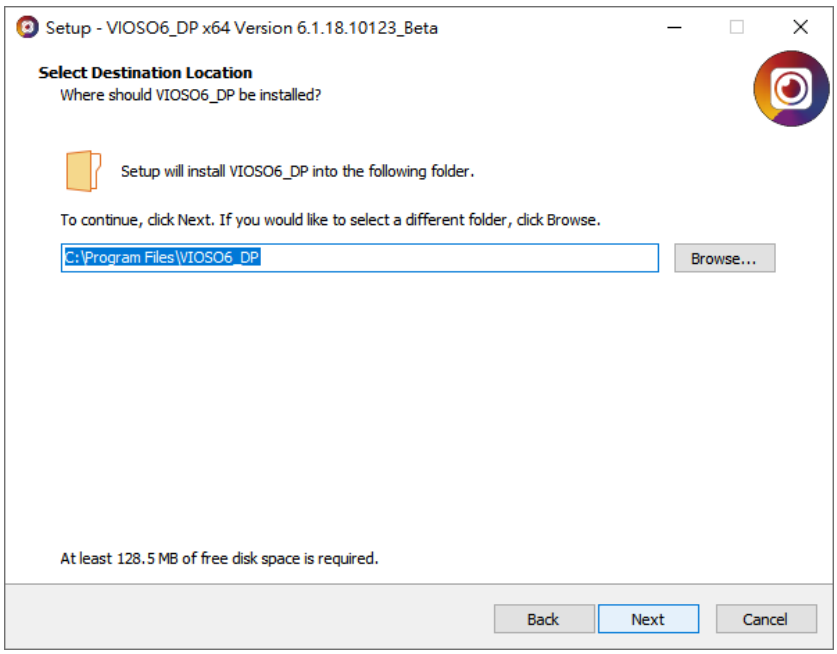


Fig 2.2.5 Select the destination location to install

Step 6. Select Full Installation

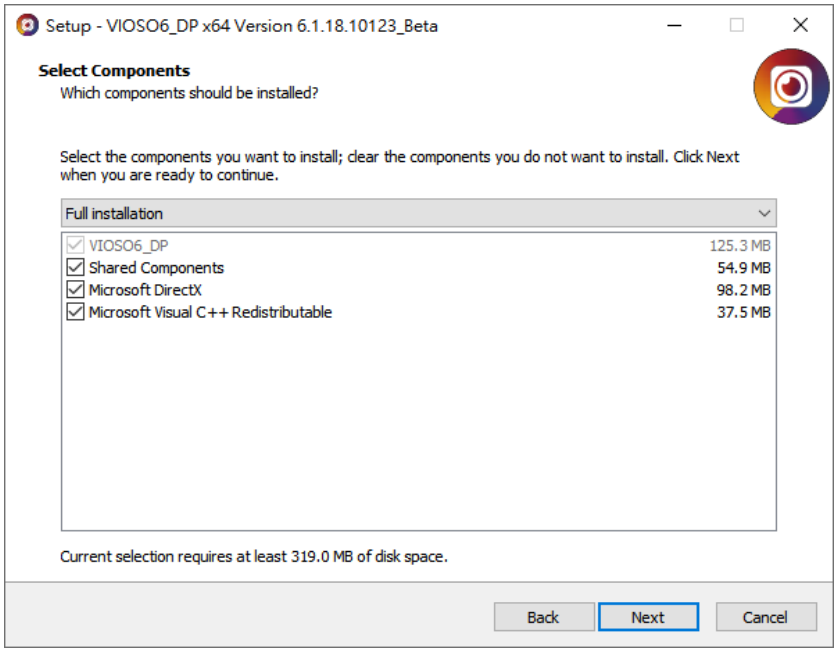


Fig 2.2.6 Select the components to install

Step 7. Select Start Menu Folder

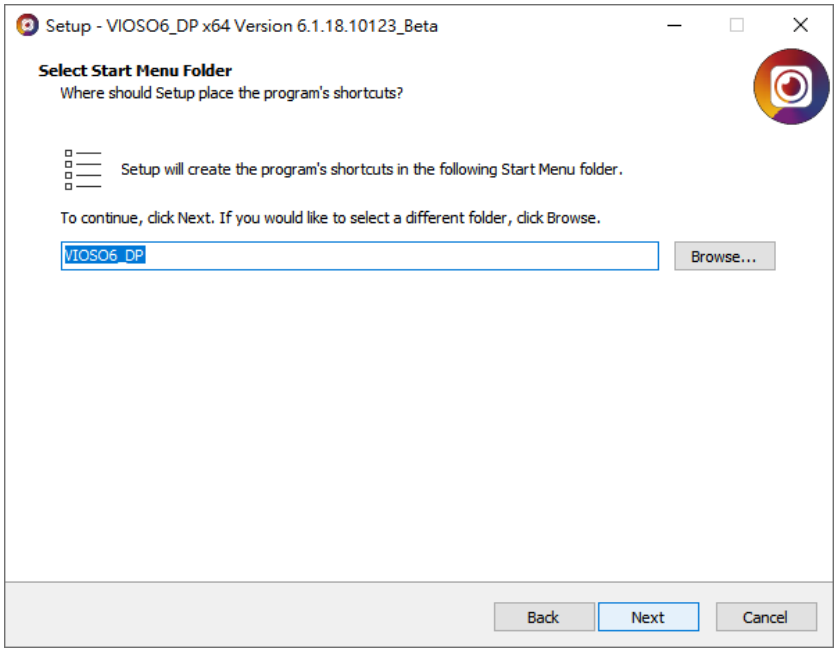


Fig 2.2.7 Set start menu folder

Step 8. Create shortcut

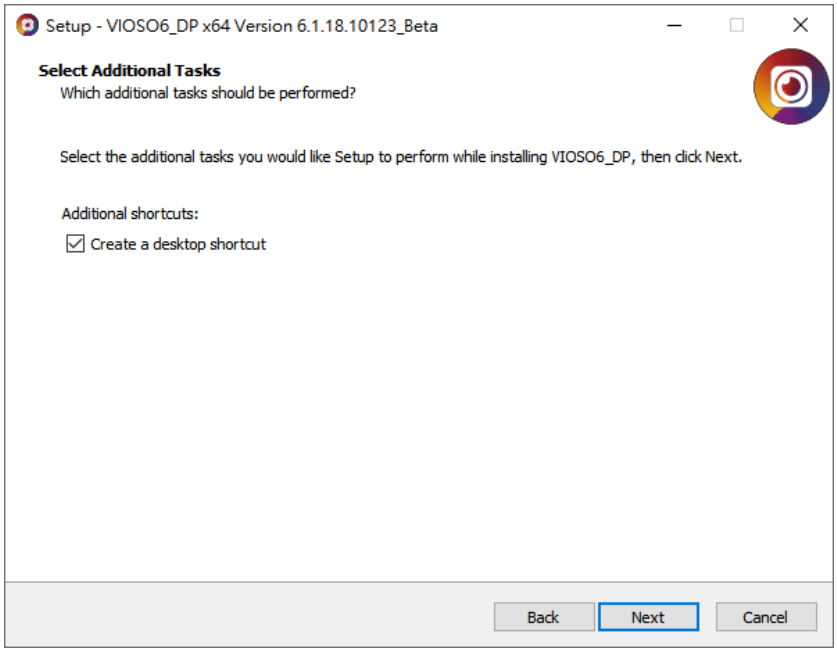


Fig 2.2.8 Create shortcut

Step 9. Check the installation item and install.

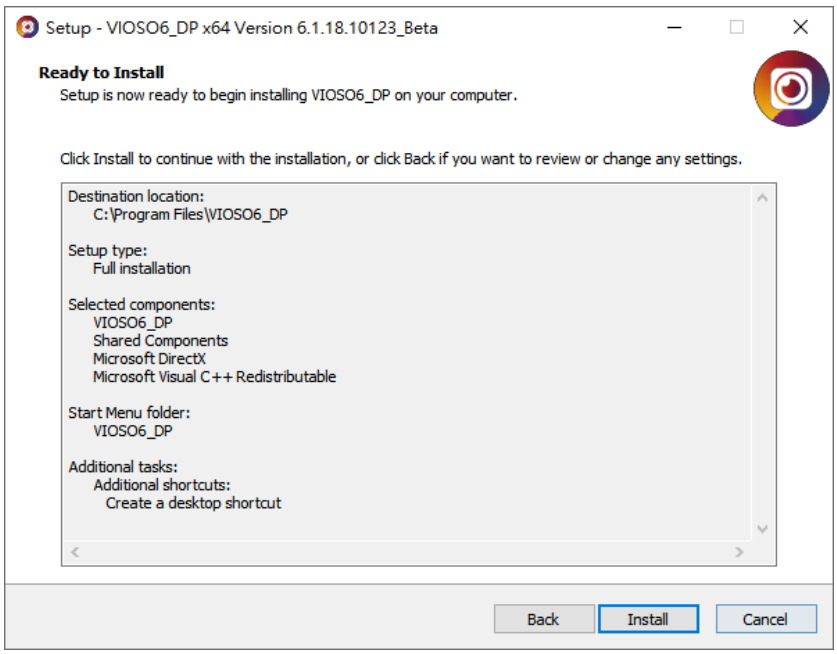


Fig 2.2.9 Ready to install

Step 10. Installing

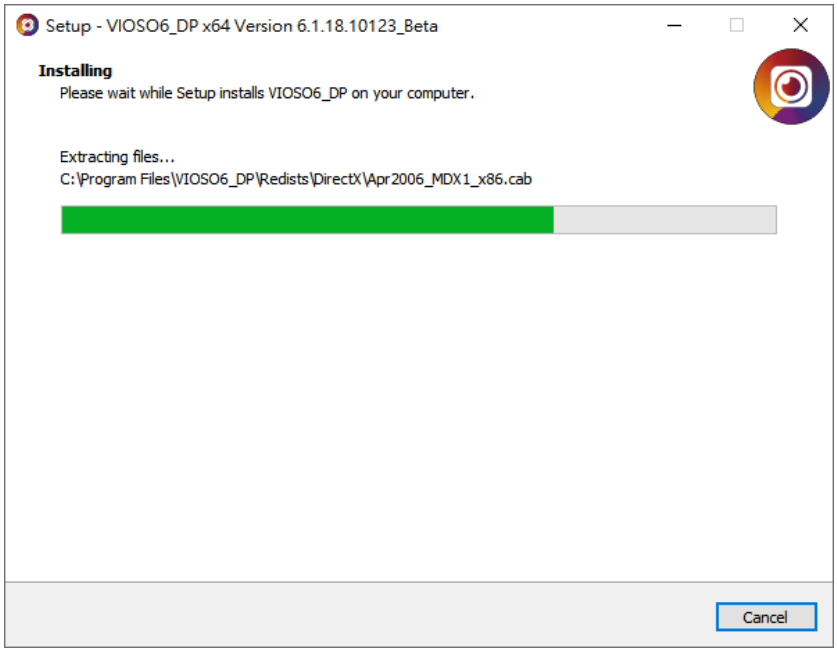


Fig 2.2.10 Ready to install

Step 11. Finish

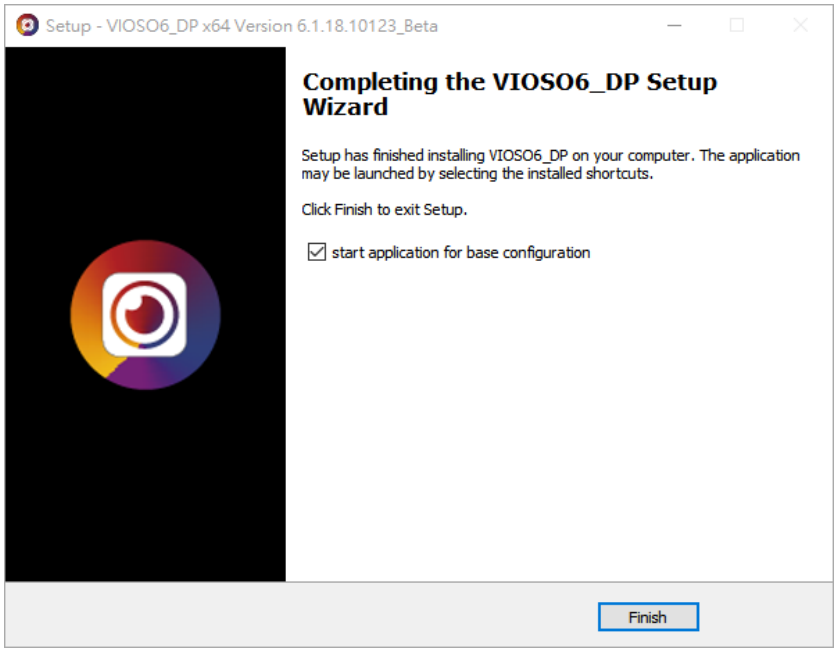


Fig 2.2.11 Finish

Step 12. First Start, just configured

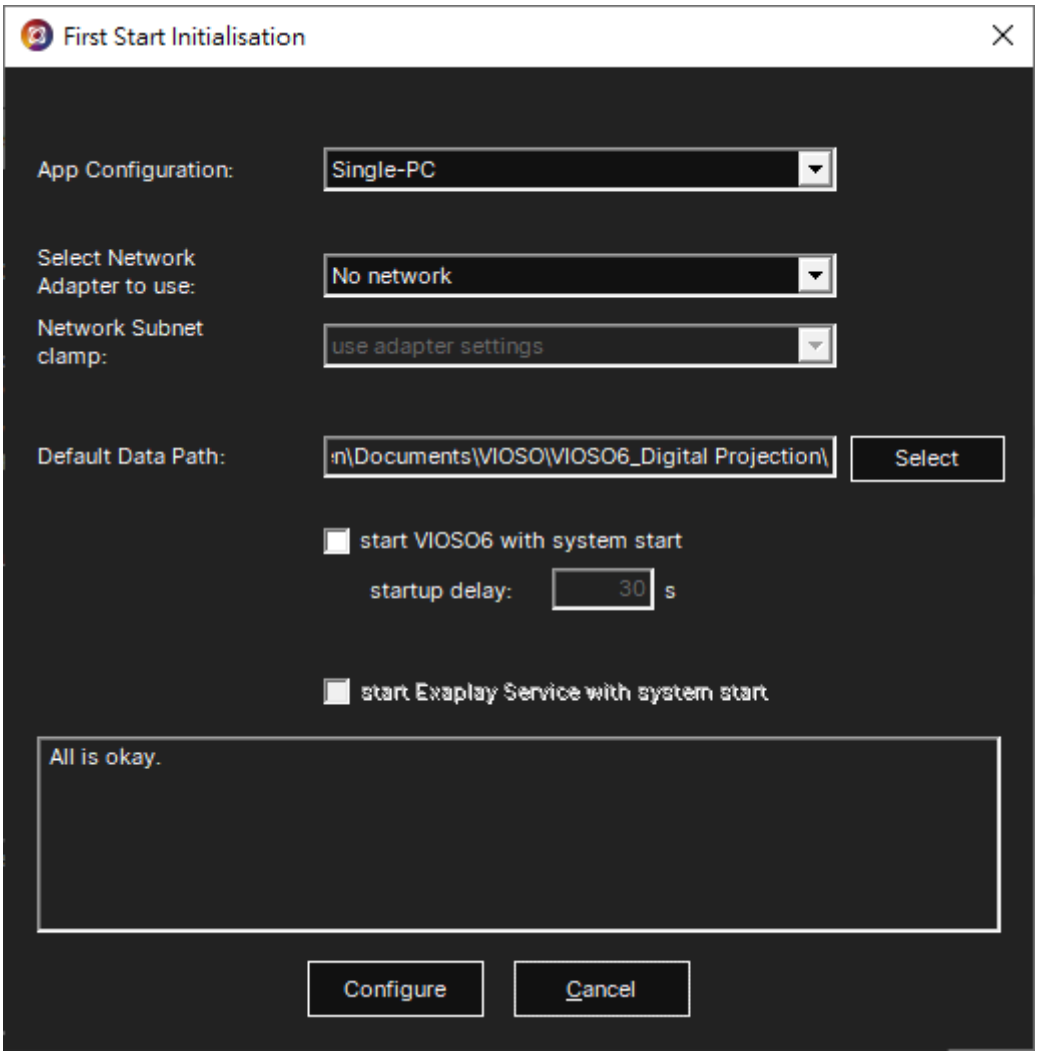


Fig 2.2.12 Configure

12.3 System Preparation Installation

Part 1 NVidia graphics card setup

Before start the calibration, we should follow the procedure as below. Check the NVDIA Driver and Install the driver.

Step 1. Check the NVIDIA driver is in a stable version, Higher than U5, you can follow the section 1.

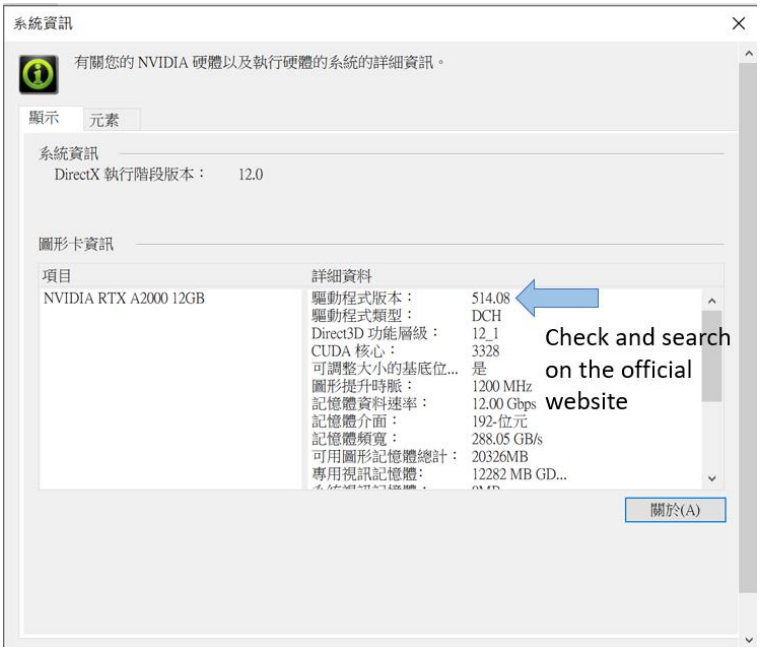


Fig 3.1.1 System information

Step 2. If not, recommend to uninstall current versions before you release the MOSAIC status, then install the stable versions.

There is some situation we encountered that you should reinstall NVIDIA Driver

- GPUs are missing in NVIDIA system topology.
- Connected displays not showing up in Windows, but listed in NVIDIA system topology (check adapters and signal cables first).
- NVIDIA control panel works very slowly.
- NVIDIA control panel nearly empty or not showing the usual set of features.
- Blue screen when operating with NVIDIA features (e.g. setting up Mosaic).
- Other anomalies.

Part 2. EDID Minding Setup

We have the following steps to setup the EDID.

Step 1. Right click on your desktop and click 'NVIDIA Control Panel'.

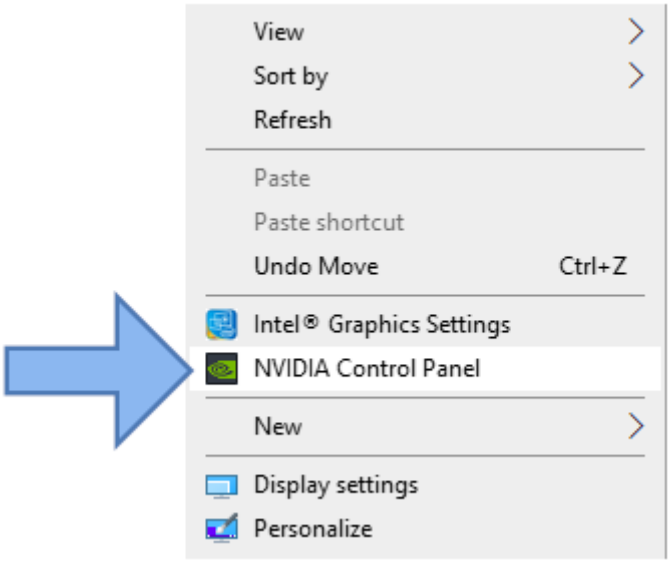


Fig 3.2.1 Right click on desktop and click NVIDIA Control Panel.

Step 2. Click on "View System Topology" and locate the display you want to modify and export EDID data. Click on 'EDID' (it should be marked as "Monitor").

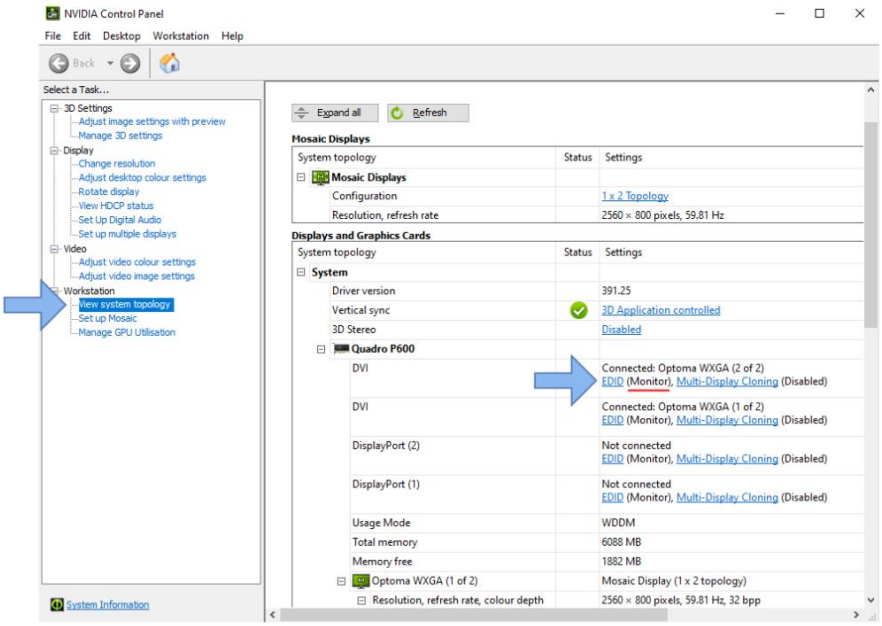


Fig 3.2.2 Click NVIDIA system topology

Step 3. On the "EDID management window", select the "Export" tab. Export the EDID data from the selected projector and save it onto the disk as a file.

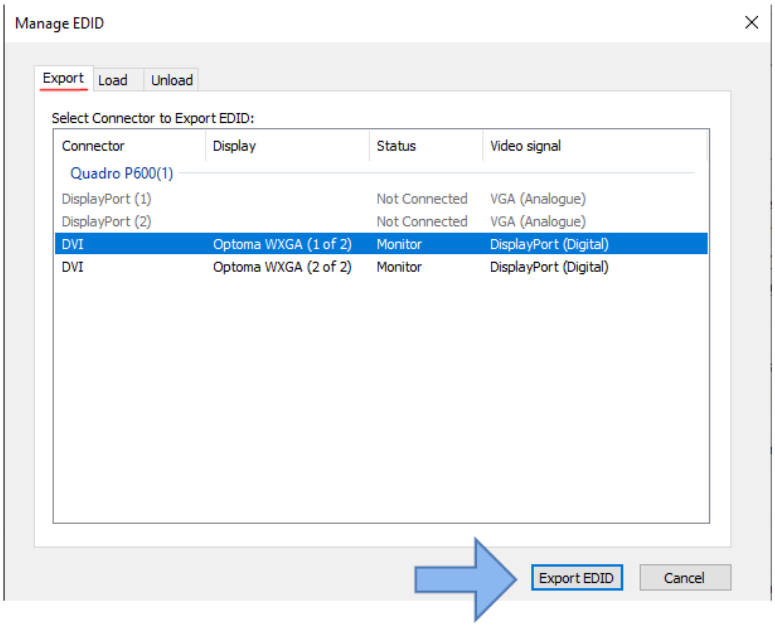


Fig 3.2.3 Manage EDID – Export EDID

Step 4. Load tab, browse, select the output and press load EDID.

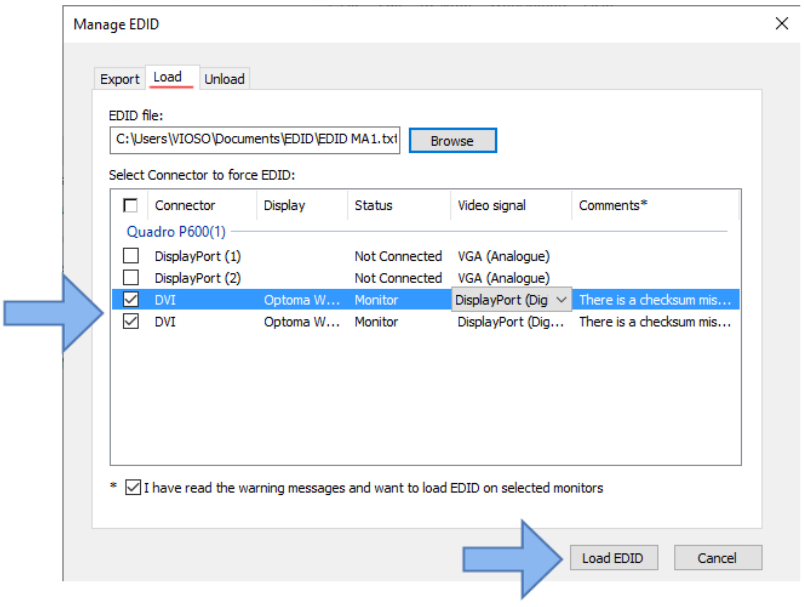


Fig 3.2.3 Manage EDID – Load EDID

Step 5. Check the result.

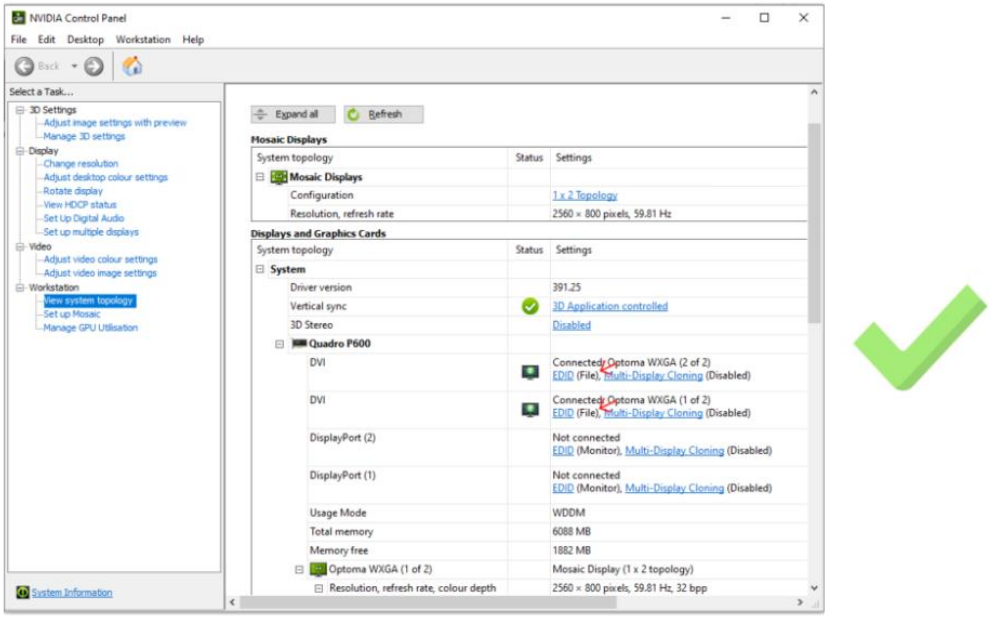


Fig 3.2.4 Check the result

Part 3. MOSAIC Setup

We have the following steps to setup the EDID as follows.

Step 1. Right click on your desktop and click 'NVIDIA Control Panel'.

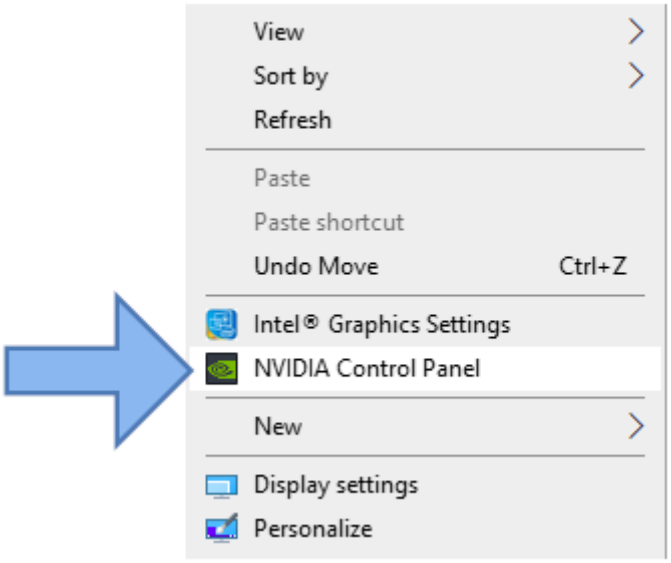


Fig 3.3.1 Right click on desktop and click NVIDIA Control Panel.

.

Step 2. Select "Set up Mosaic" tab and click 'Create new configuration' in order to start the NVIDIA Mosaic set up.

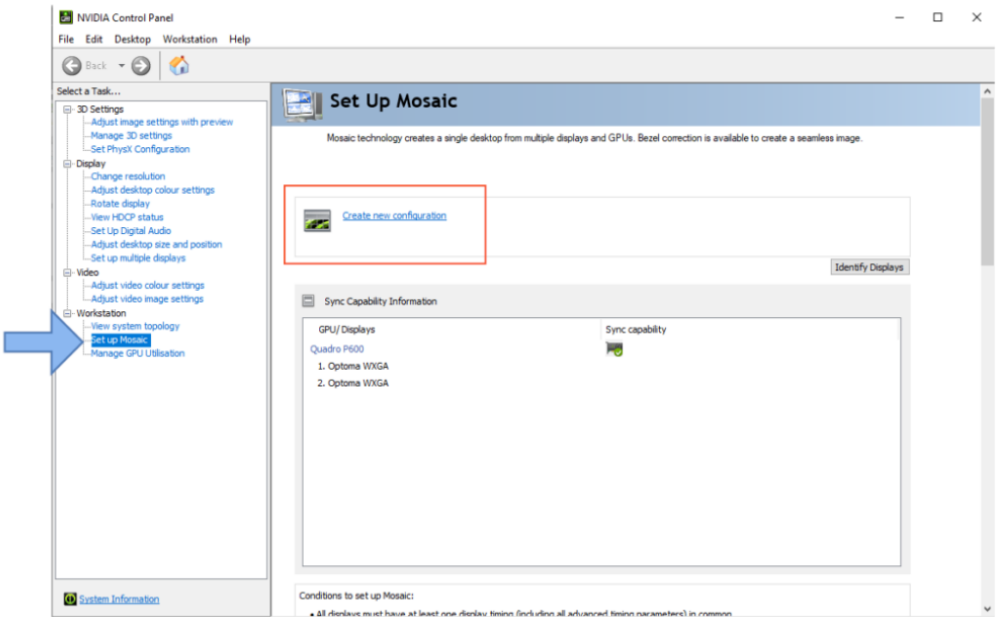


Fig 3.3.2 Click set up MOSAIC

Step 3. Select the correct configuration for your setup.

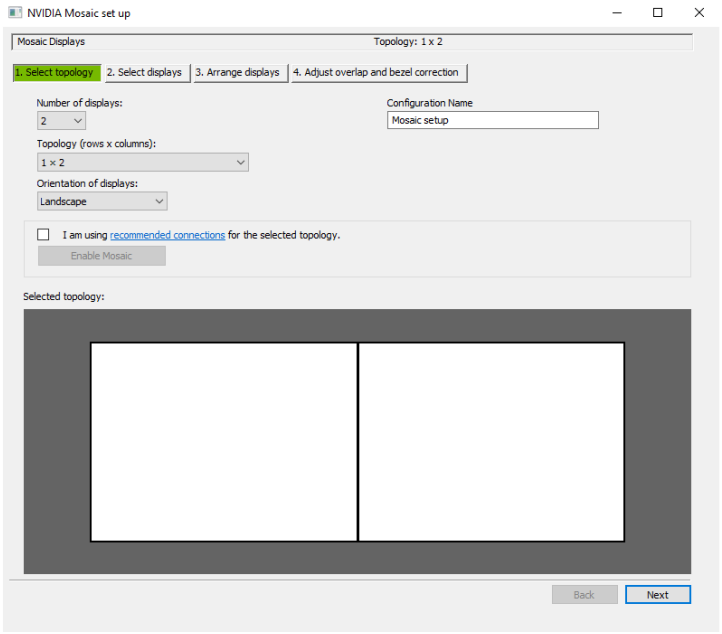


Fig 3.3.3 Select topology

Step 4. Check the refresh rate and resolution in each display, you must make the same resolution and refresh rate to your displays.

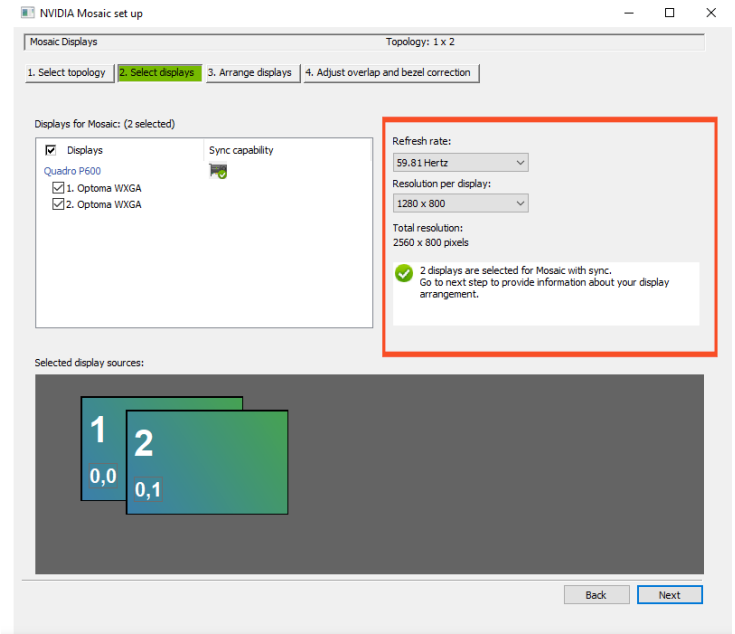


Fig 3.3.4 Select display

Step 5. Arrange displays according to their topology by drag and drop or typing the numbers into display slots (you will see the numbers in the projectors or click right on your desktop and go into the “Display settings” and click “Identify displays”).

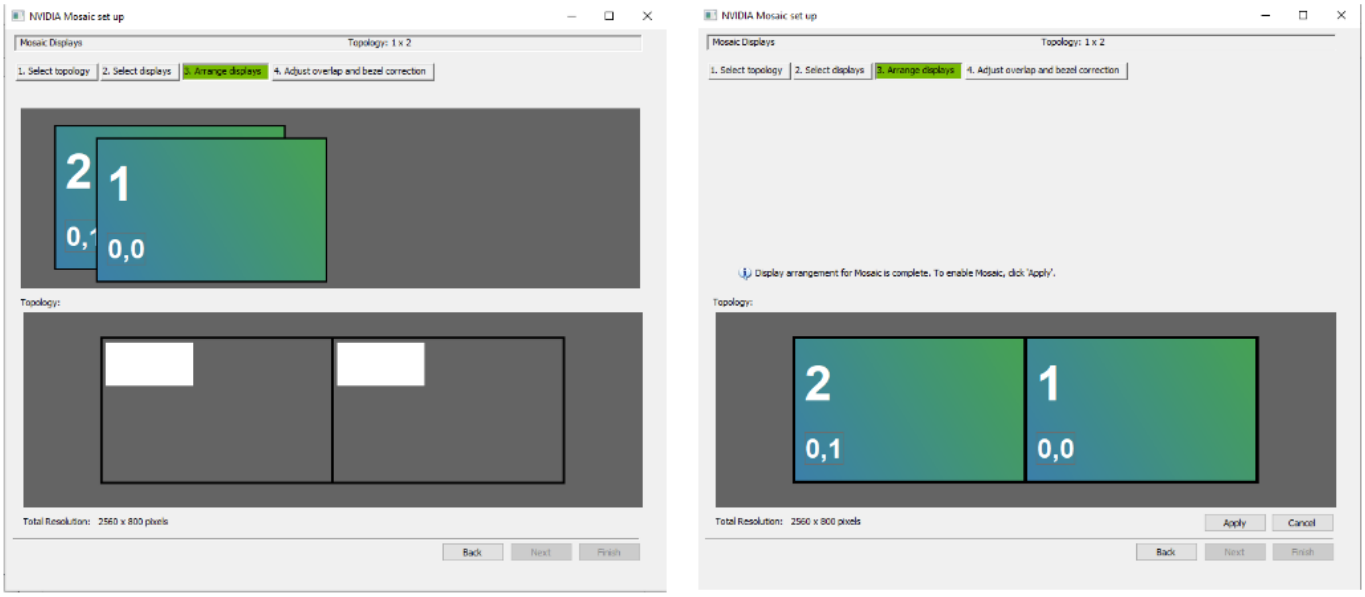


Fig 3.3.5 Arrange display and finish

12.4 Software Activation & Projector Activation

Part 1 License activation from Advanced Align

The Status of PJ-Crtl default is unactivated when finish the installation. If you want to have advanced function as Smart Align or Advanced Align please activate the license first.

Step 1. Your can directly click advanced align and smart align. There will have a reminder to ask you to go to the activation page.

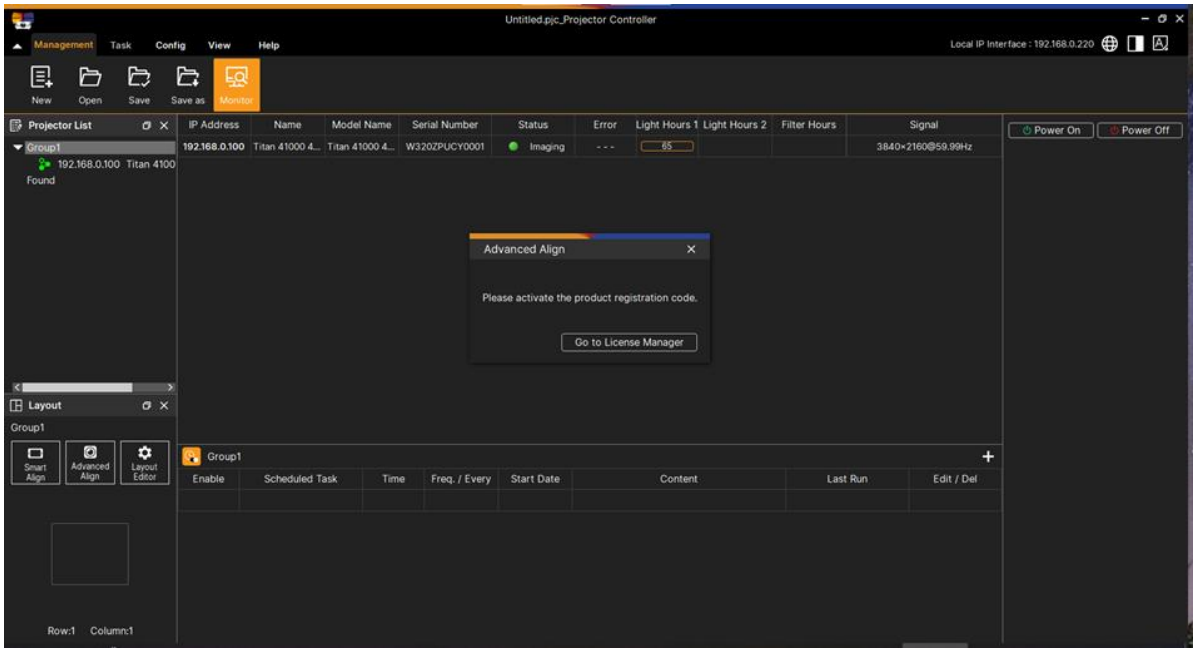


Fig 4.1.1 Activate license

Step 2. You can choose the Free 30-days Trial and activate product code..

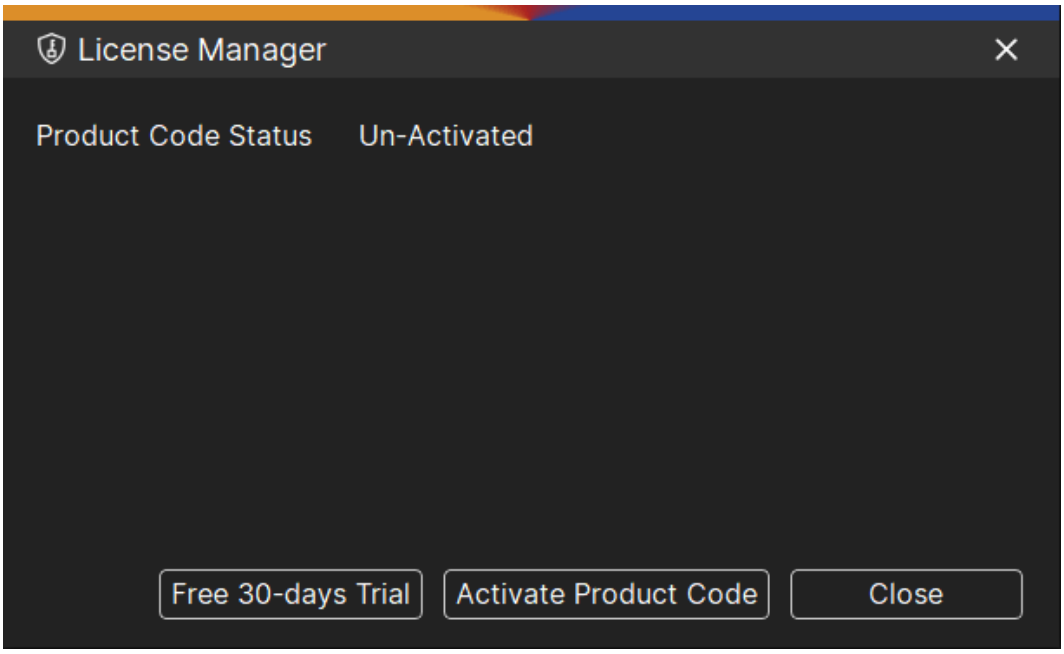


Fig 4.1.2 Activate Trial license

Step 3. You should confirm to make the license as trial versions. Then click ok to activate as a trial version. PJ-Ctrl will restart to be a trial version.

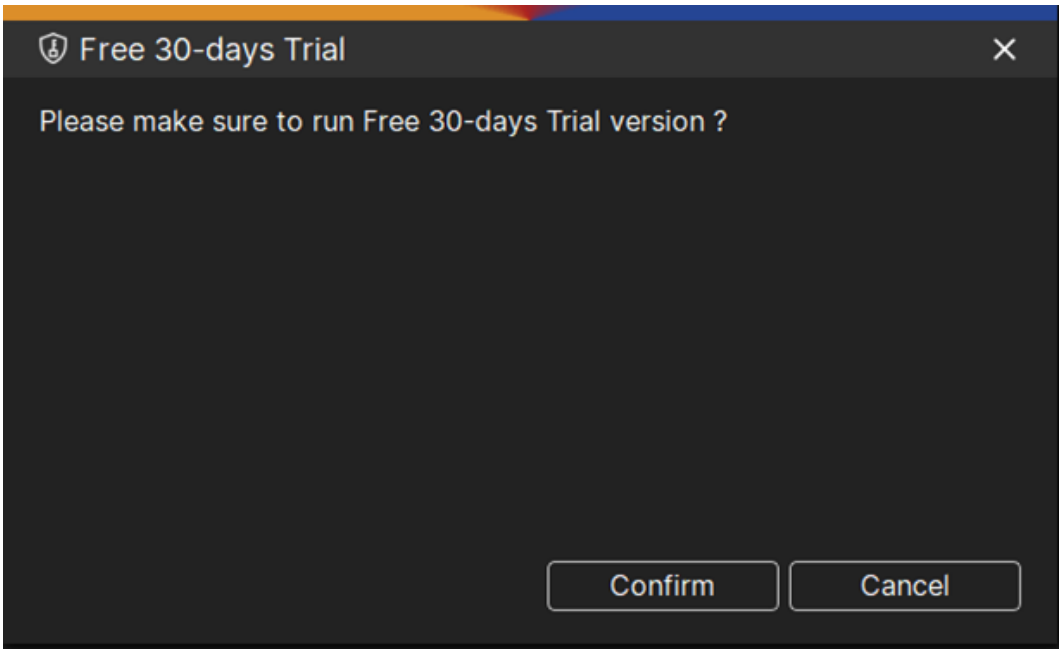


Fig 4.1.3-1 Confirm

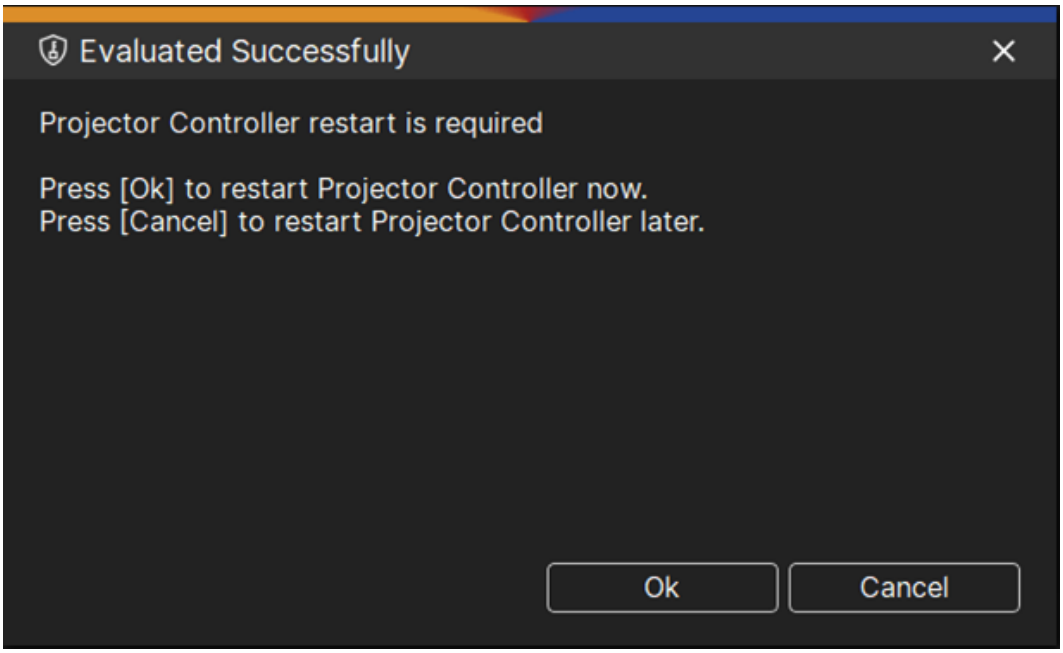


Fig 4.1.3-2 Ok

Step 4. After restart, you should go to licence manager page to check the versions, also you can purchase a license from the vendor and activate the license there.

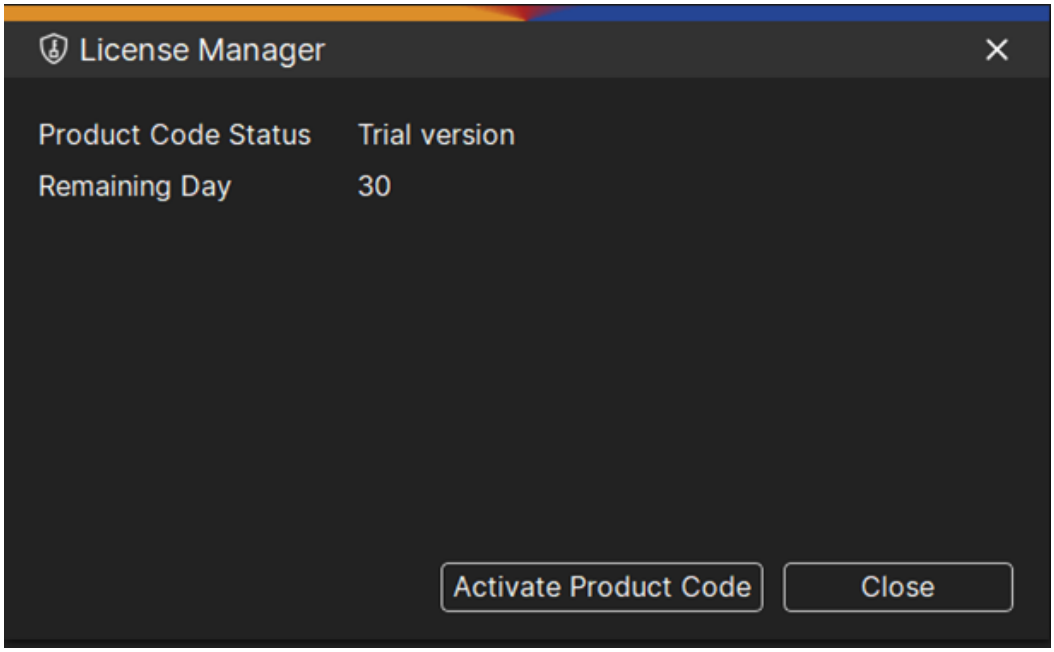


Fig 4.1.4 Check license status

Step 5. Vendor will give you a key code to activate the license.

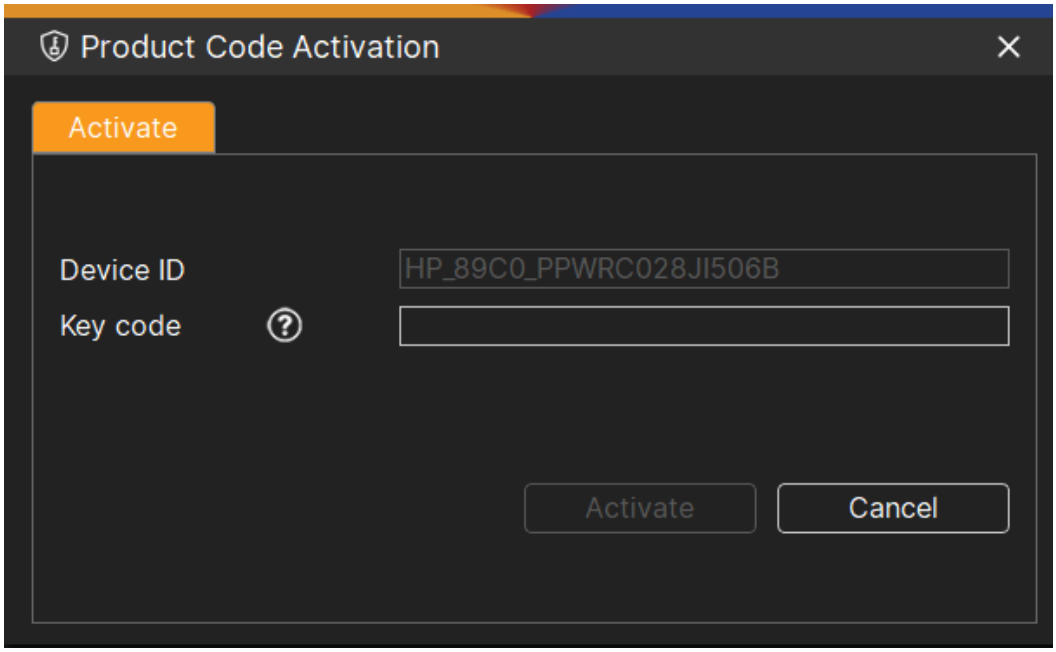


Fig 4.1.5 Product code activation

Step 6. After activating the license, you should restart the program again.

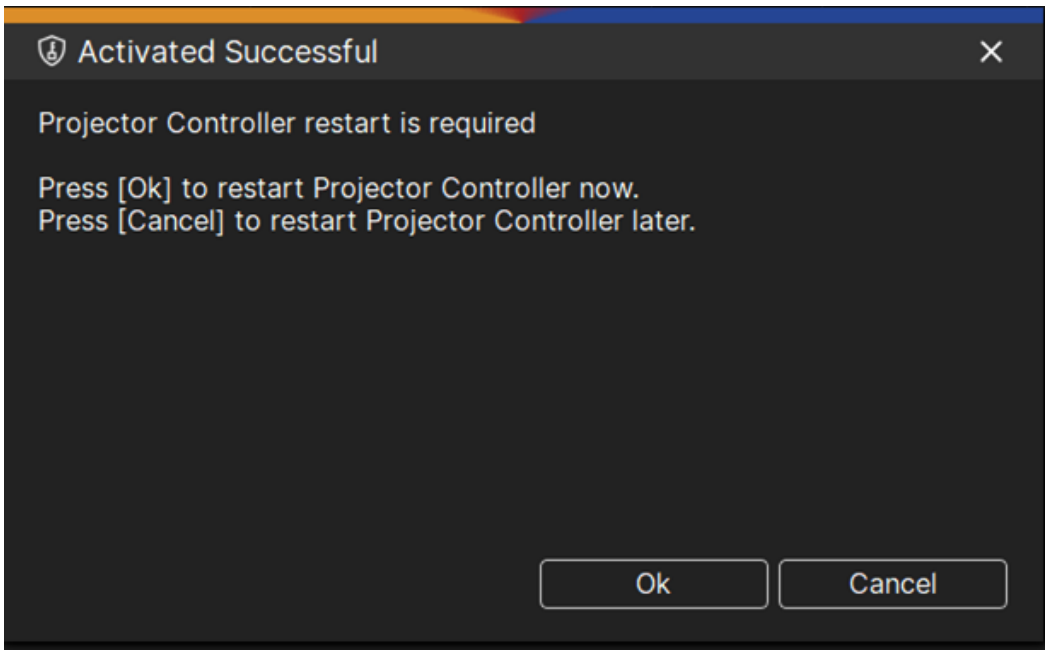


Fig 4.1.6 Ok

Step 7. You can check the license status from the license manager after license activation.

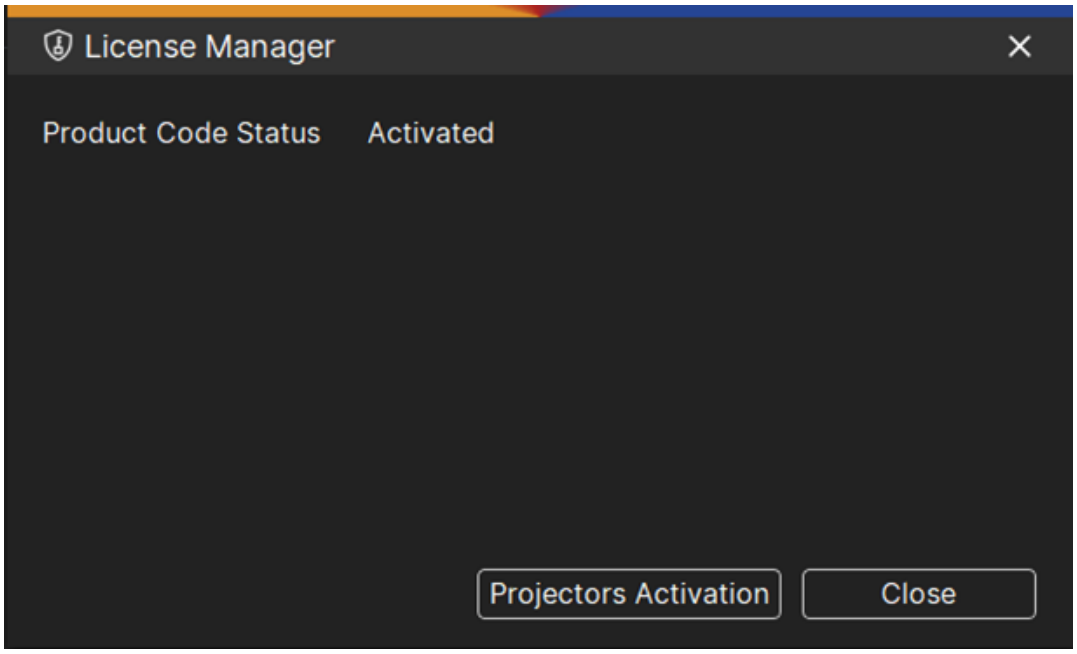


Fig 4.1.7 Check license status

Part 2. Projectors Activation from license manager

Help → License Manager

Click [Projectors Activation] to activate projector

Step 1. The list will show projectors with a status of Running and not yet activated, please press [Un-Activated], enter the keycode to activate the projector.

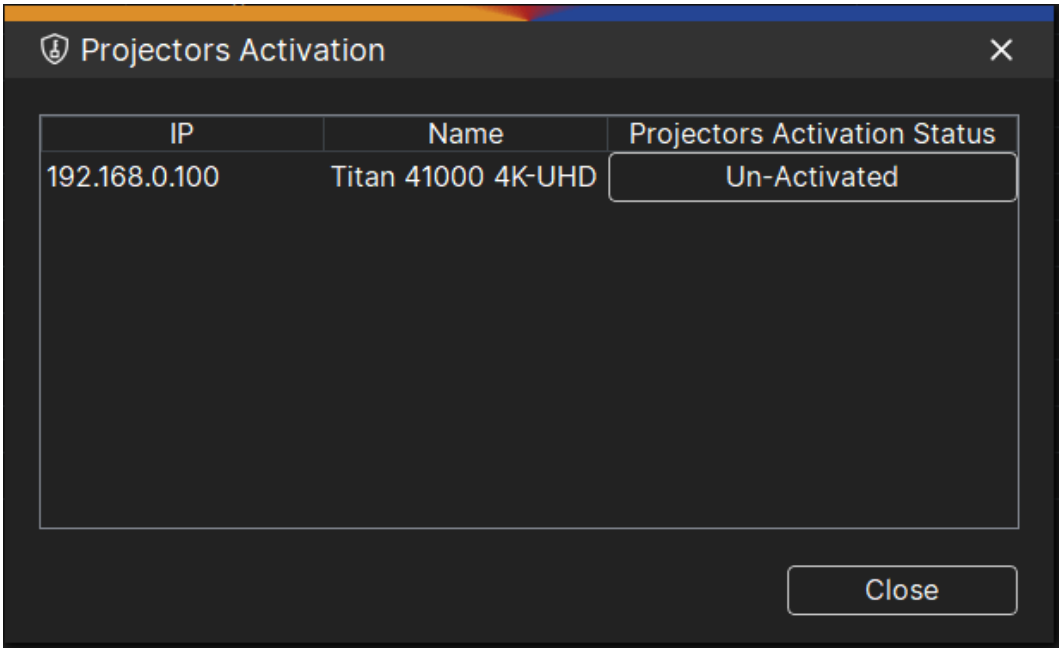


Fig 4.2.1-1 Projectors Activation Status

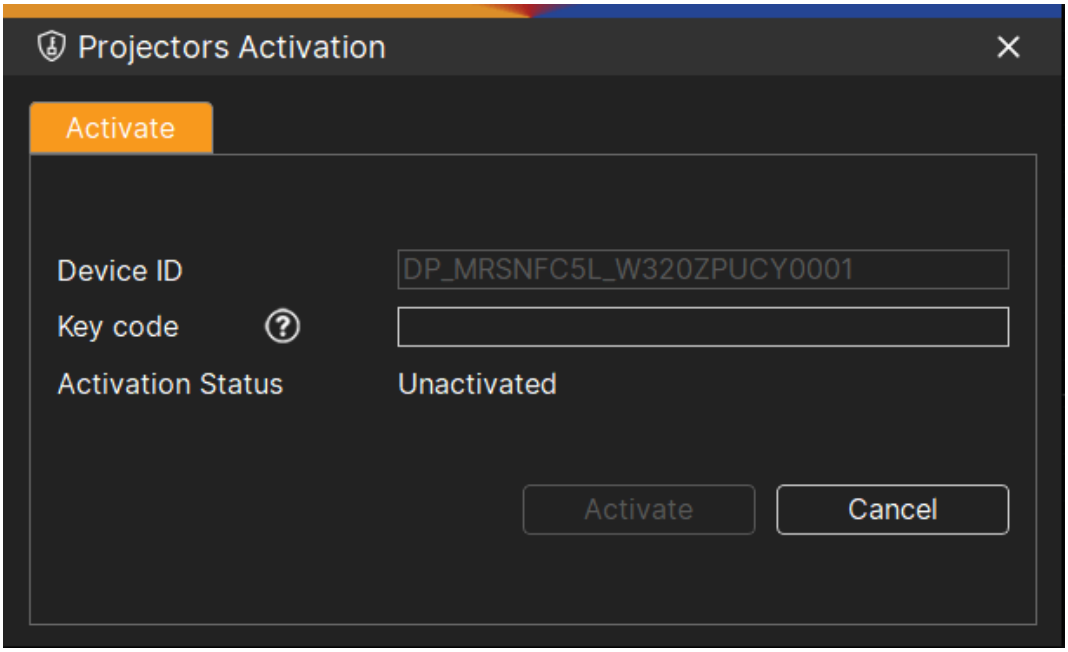


Fig 4.2.1-2 Projectors Activation

Step 2. Computer must keep in connect with the internet to make sure can be connected

to the license server to activate the license.

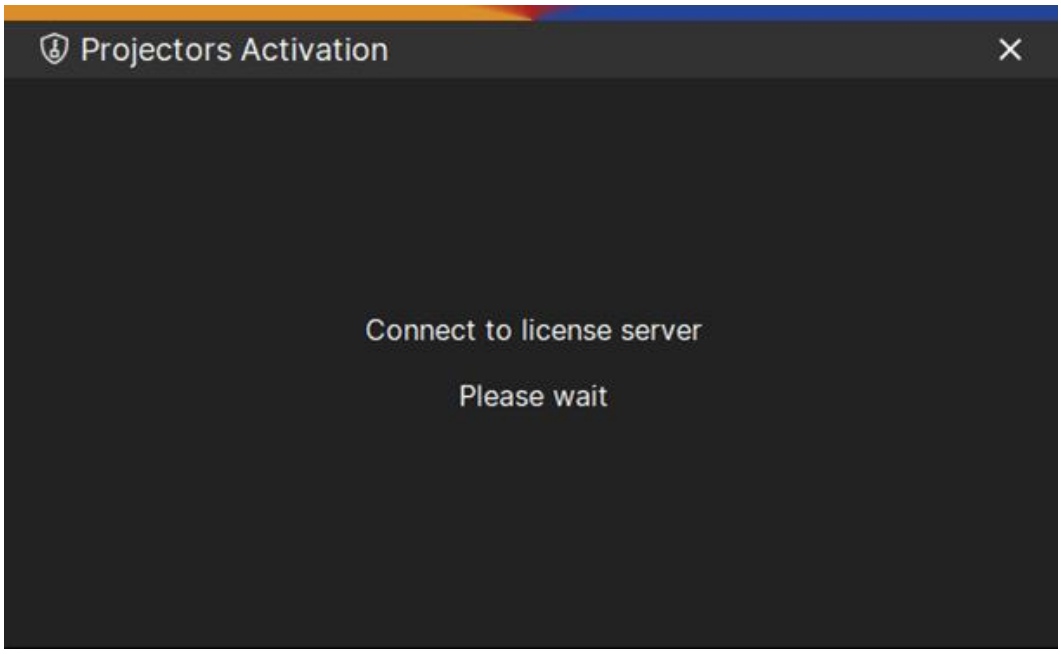


Fig 4.2.2 Connect to license server

Step 3. Activate Successful

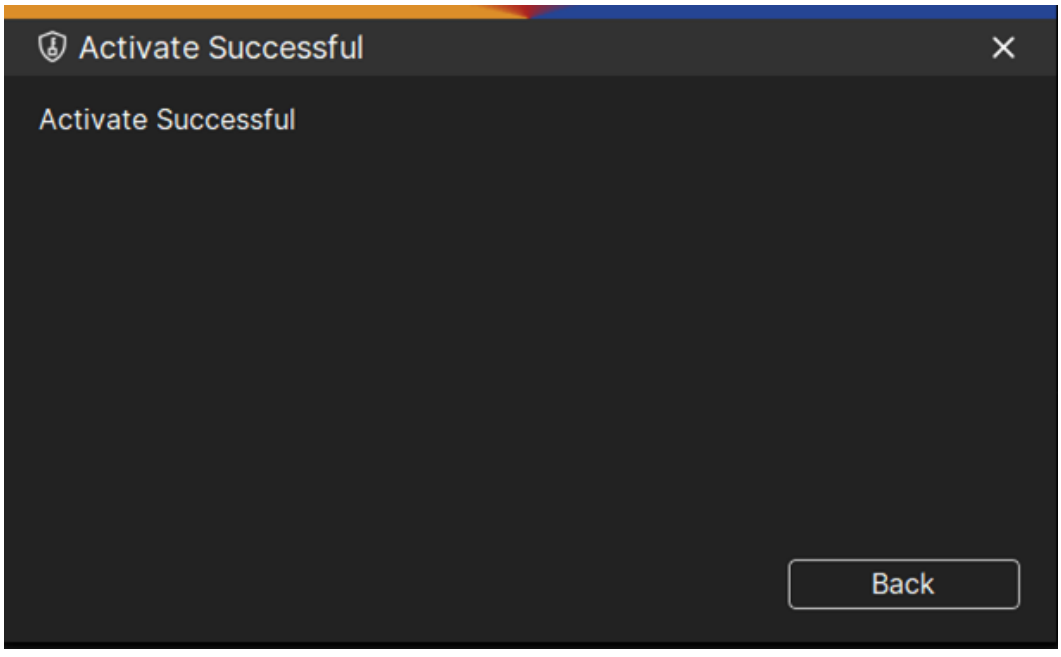


Fig 4.2.3 Activate successful

Step 4. It will show the activation status after activating projectors.

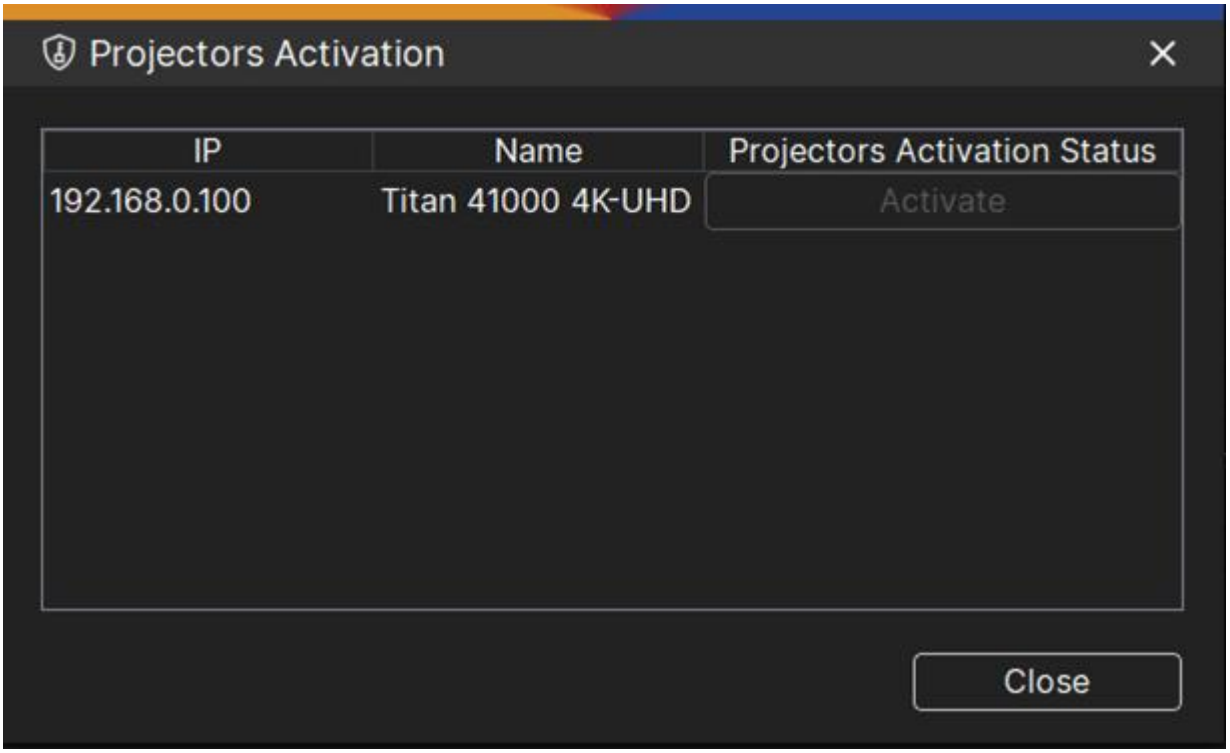


Fig 4.2.4 Check the license status

Part 3. Layout Editor

Step 1. Main window → Layout Editor

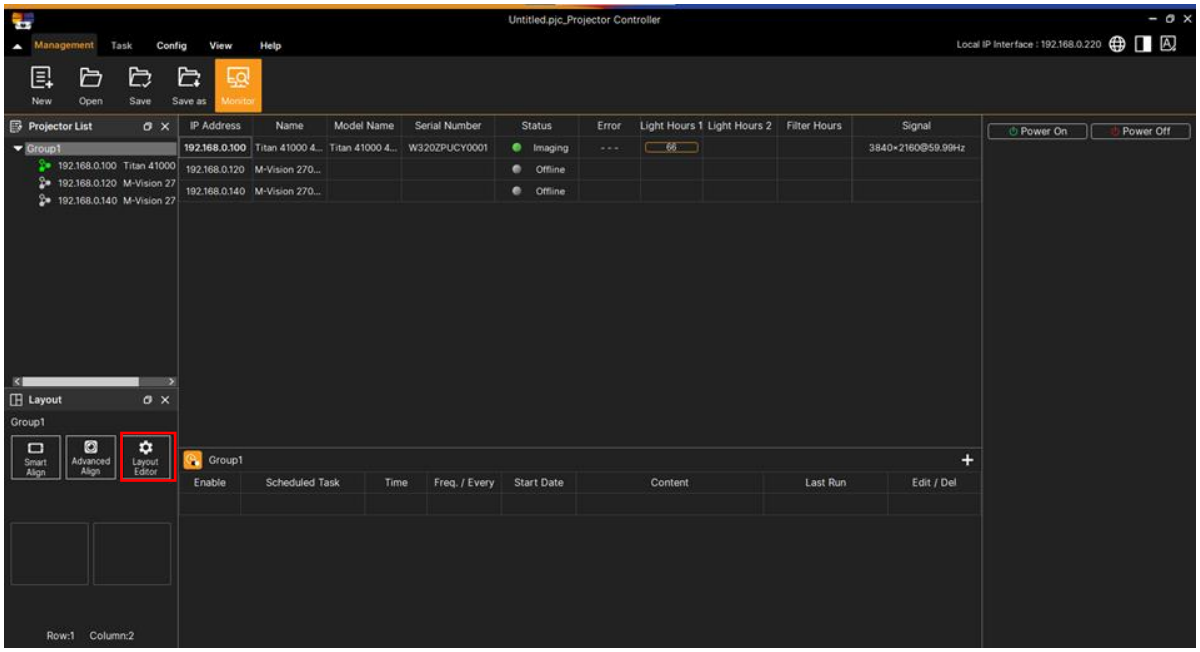


Fig 4.3.1 Layout editor

Step 2. Change the Column value to 2 and use mouse to drag the projector in the left list to the space in the right.

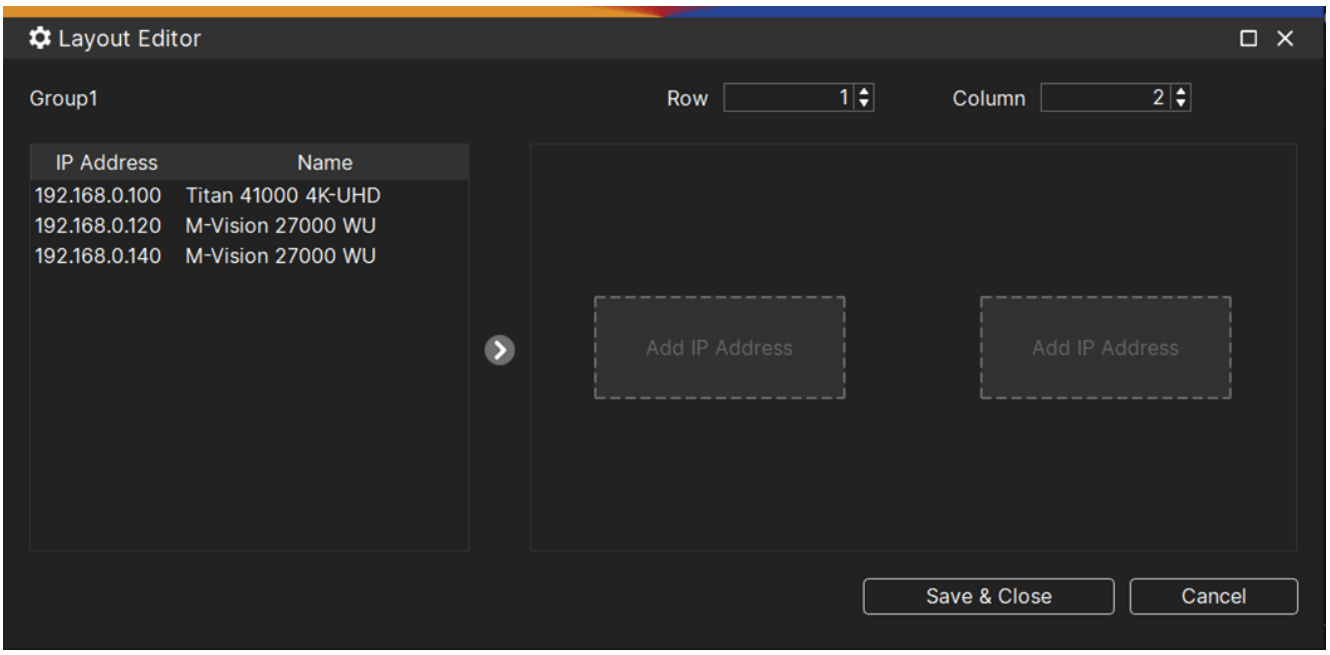


Fig 4.3.2 Drag IP to add IP Address in the right space

Step 3. Make first projector to the target space.

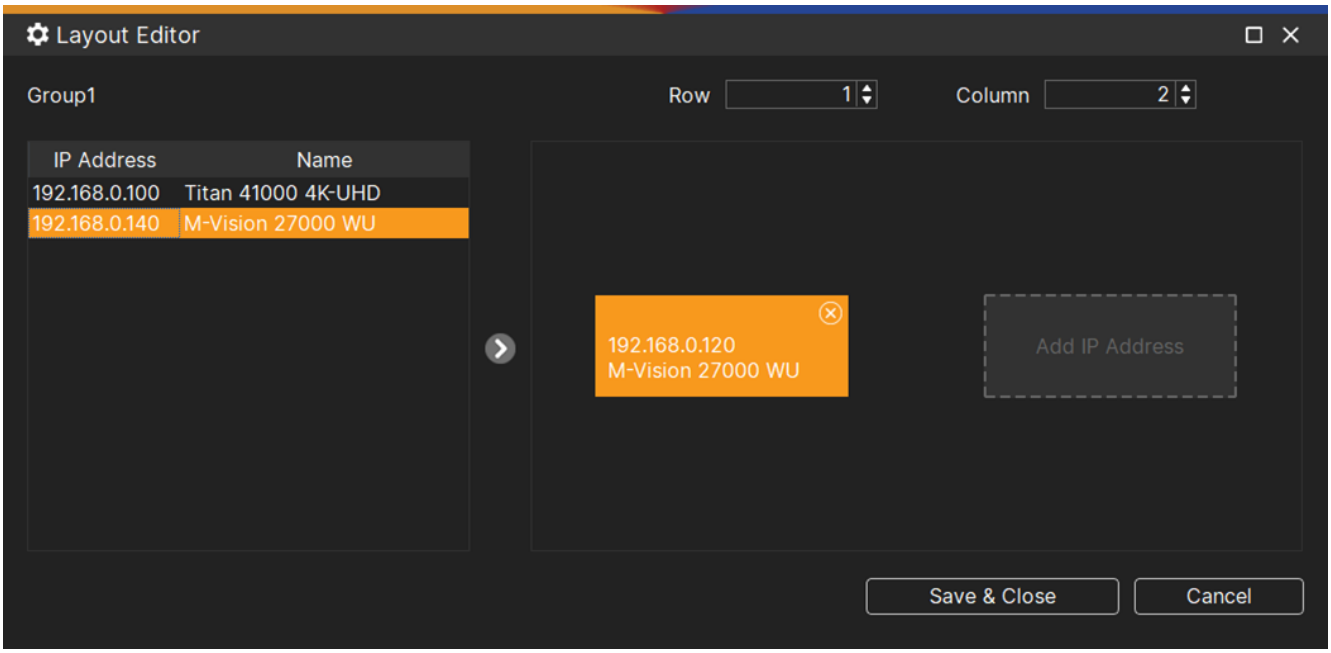


Fig 4.3.3 Drag the first IP to target location

Step 4. Make second projector to the right space.

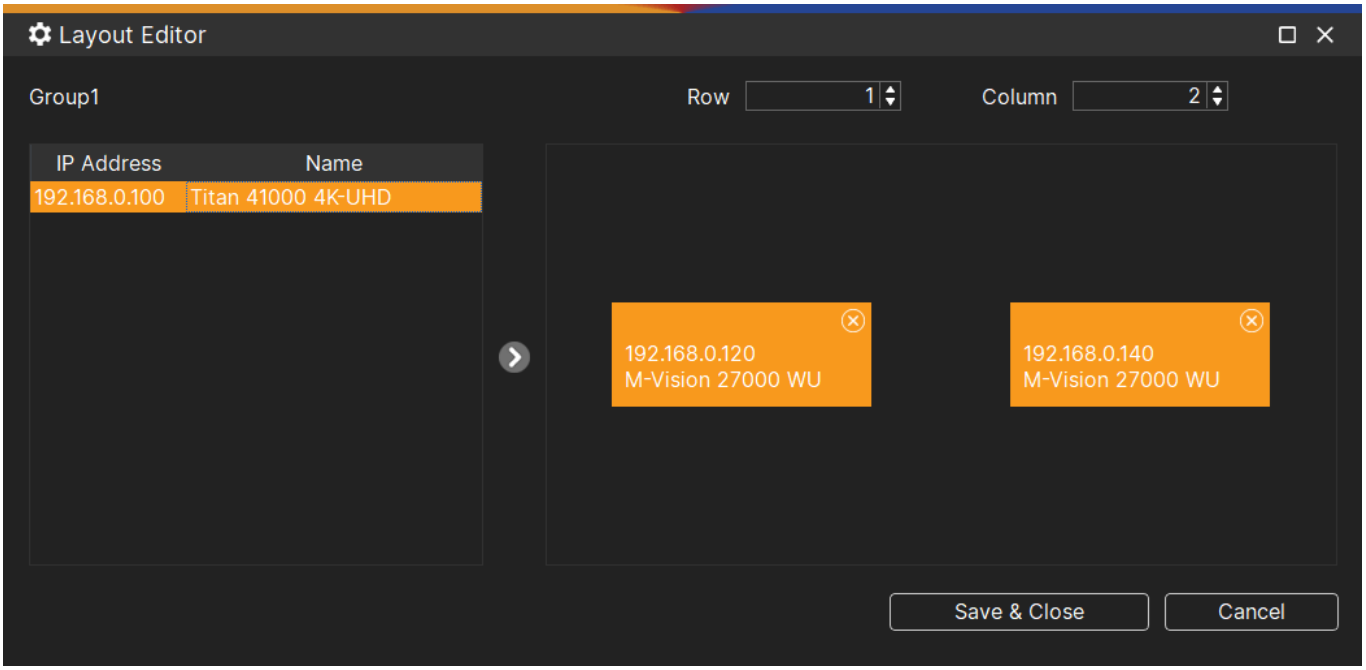


Fig 4.3.4 Finish the layout editor

Part 4. Advanced Align

Step 1. Main window → Advanced Align

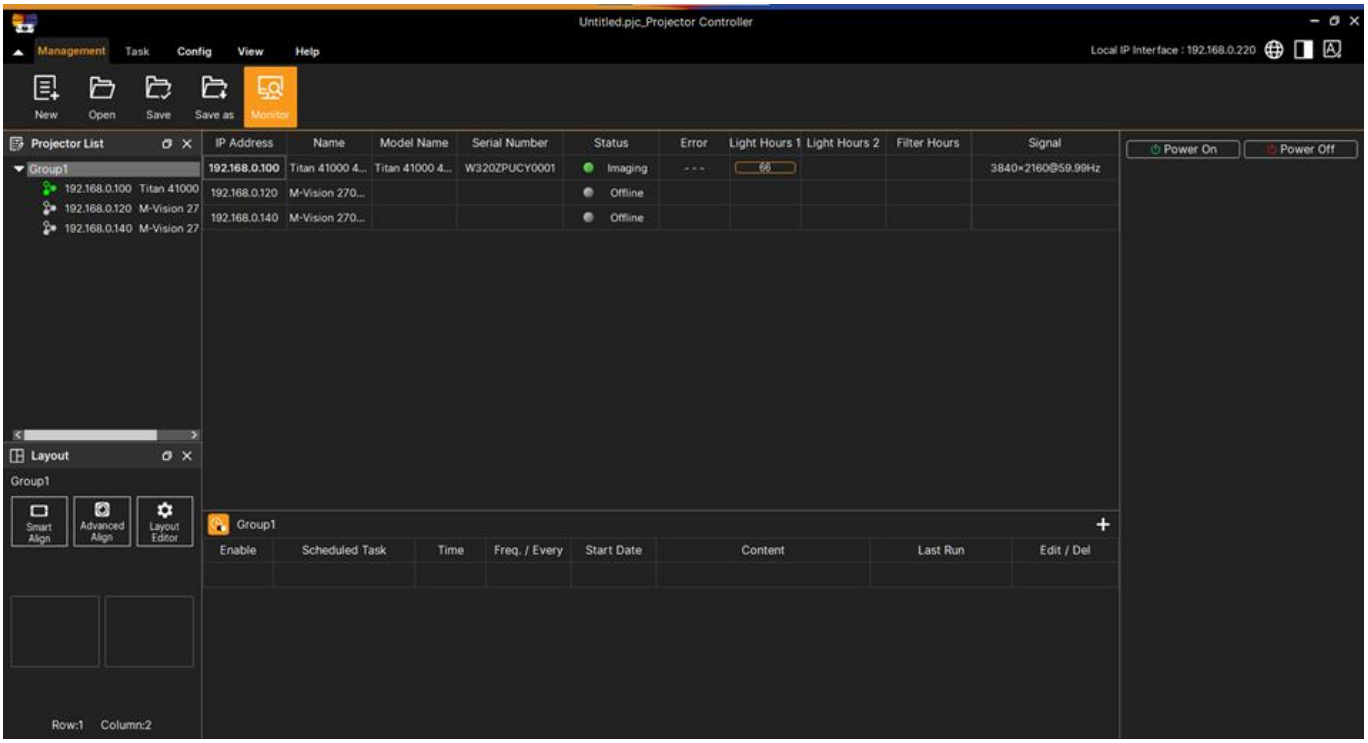


Fig 4.4.1 Select Advanced Align

Step 2. Advanced Align will show the remaining day for the trial version.

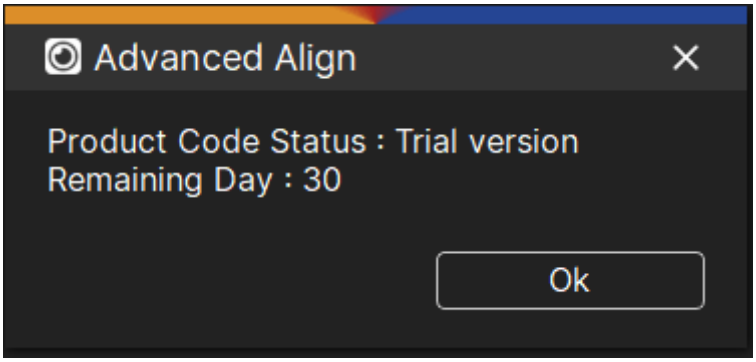


Fig 4.4.2 Remaining day

Step 3. Use your mouse in the Display list on the left, press and hold the Display you want to configure, and drag it to the space on the right.

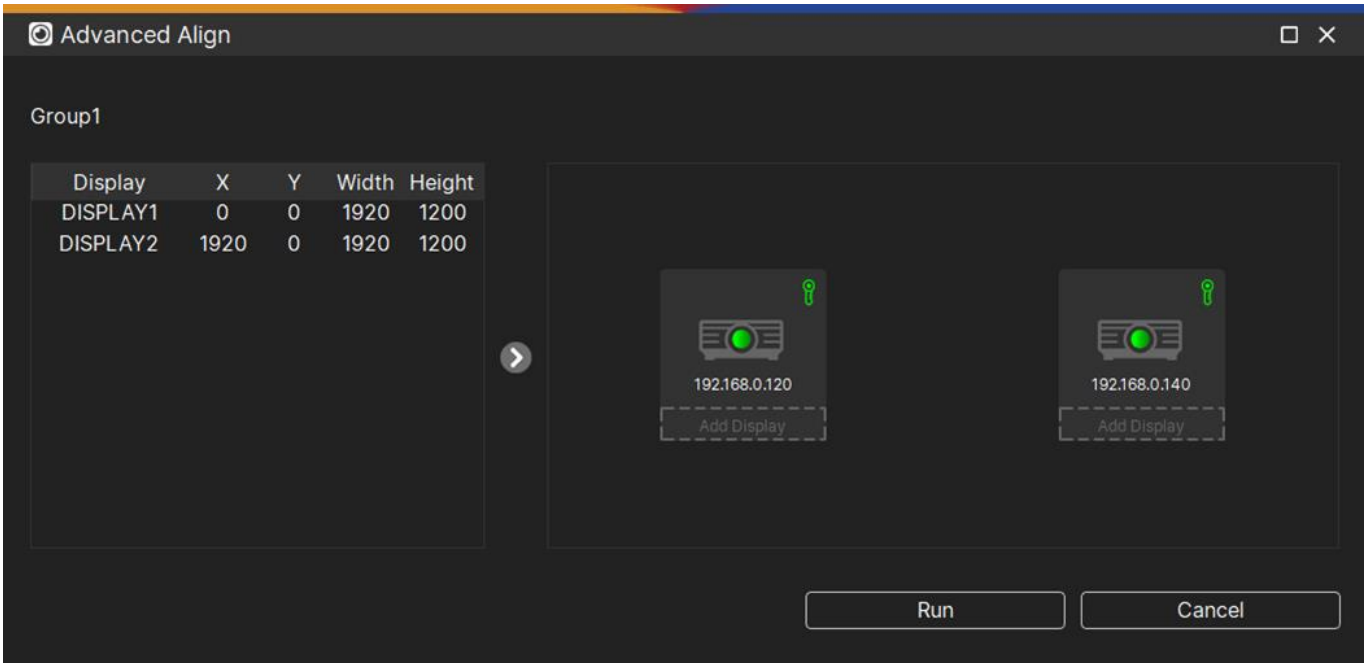


Fig 4.4.3 Drag display to the IP Layout

Step 4. Finish the display settings and click [Run]

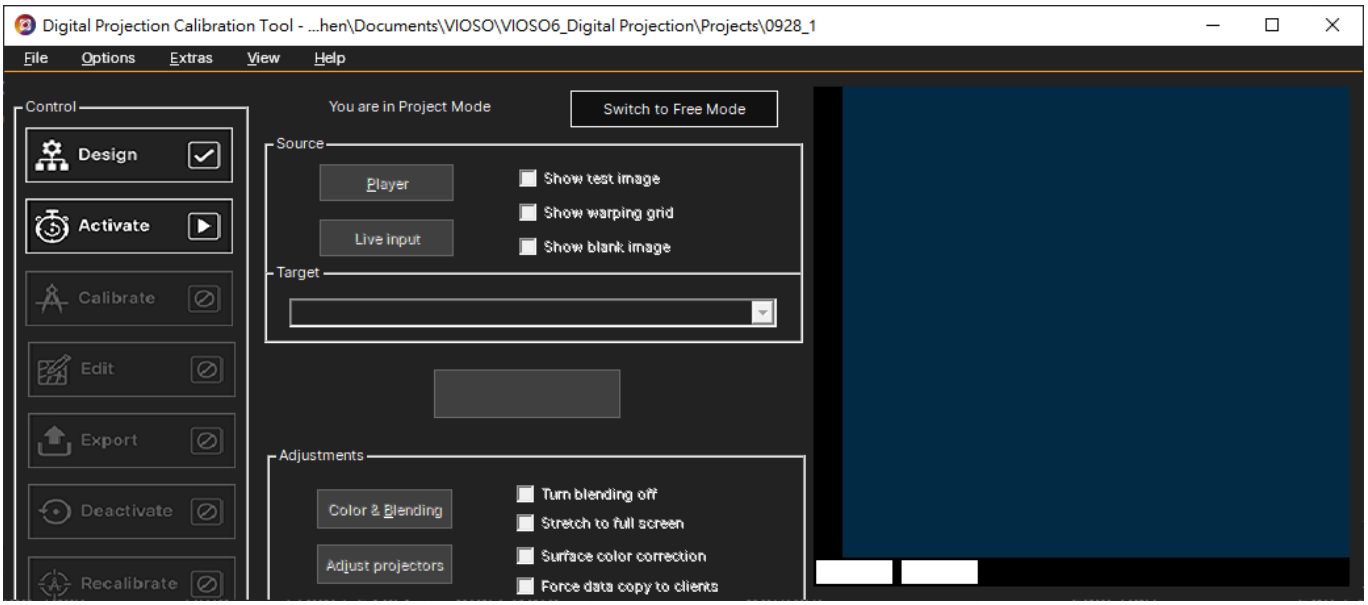


Fig 4.4.4 Advanced Align

12.5 Advanced Align Procedure

Step 1. Open the network connection to change the connection IPV4

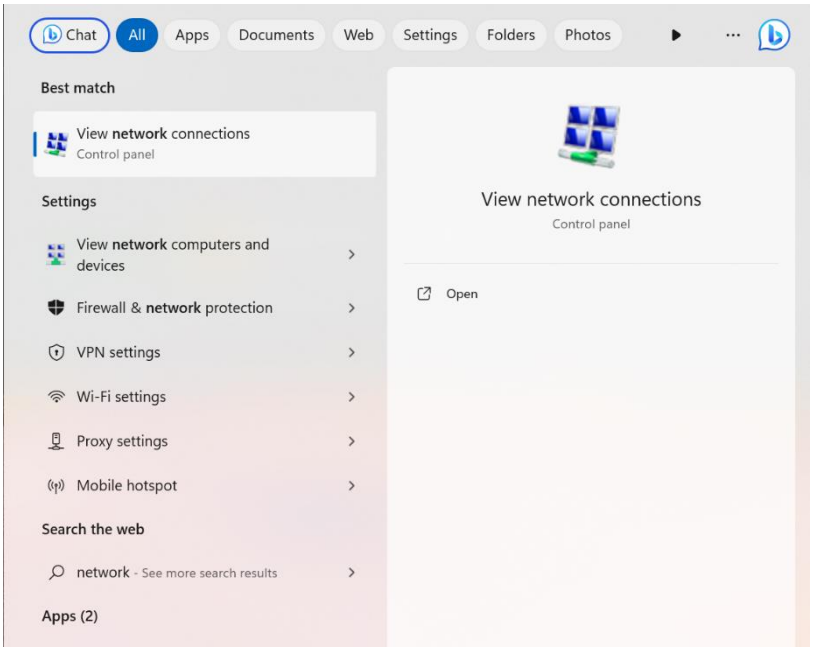


Fig 5.1 Open the start menu

Step 2. Right click the Ethernet. Here the example is Ethernet 3.

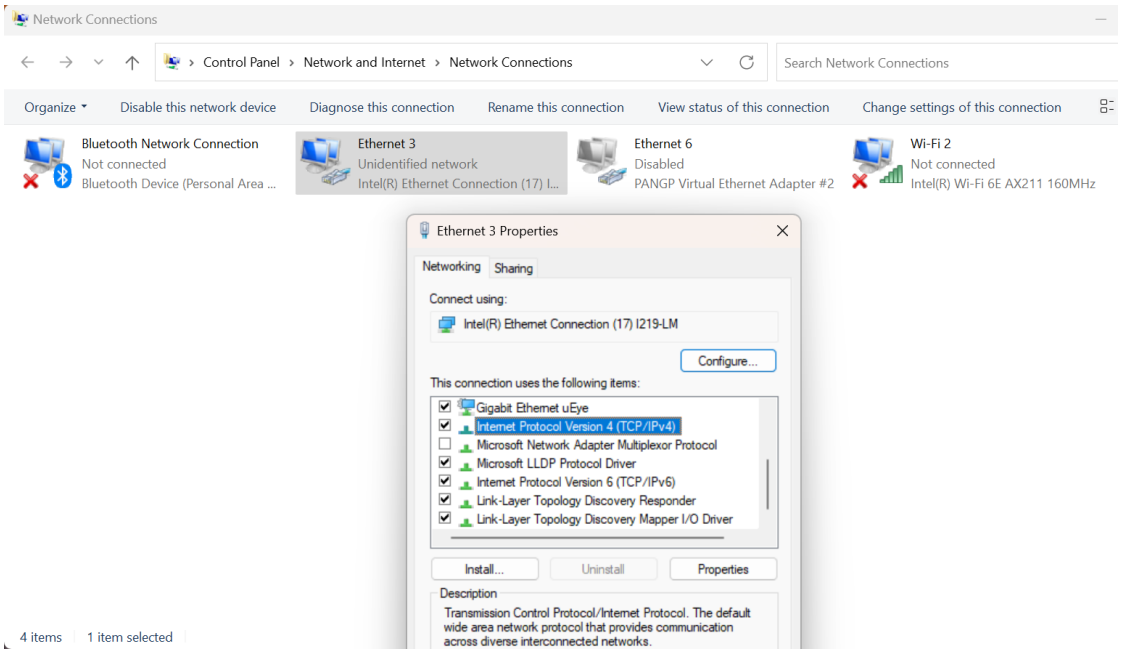


Fig 5.2 Connection Setting

Step 3. Change the IP Address by router and projectors.

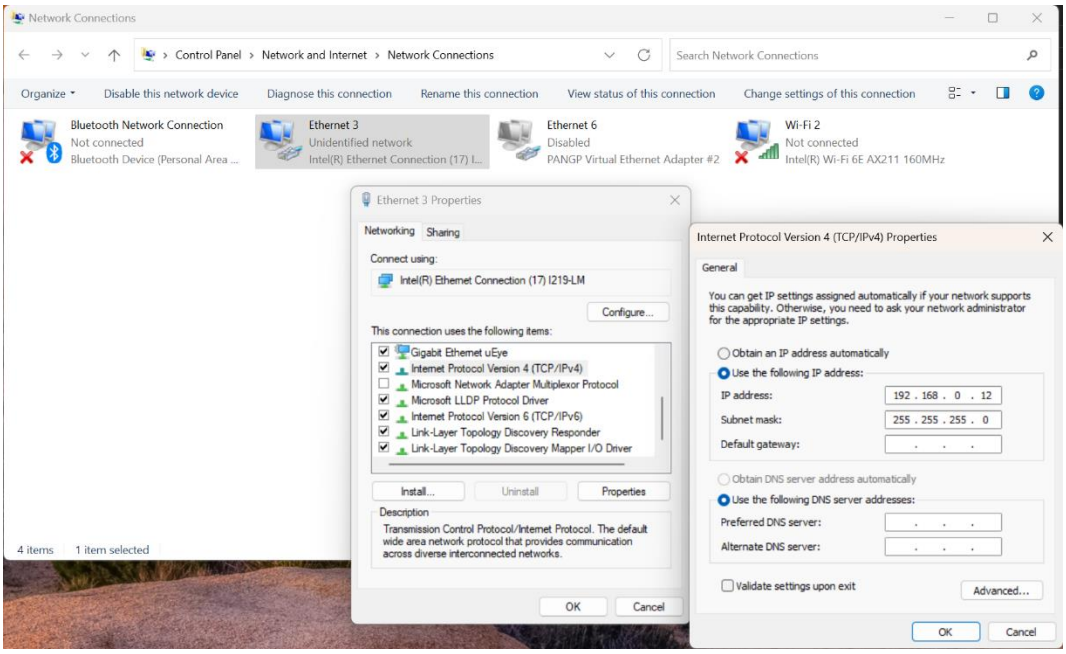


Fig 5.3 Set up IP of PC

Step 4. ① The projectors should be in the same group. ② Check the network settings, Port and Local IP Interface are correct.

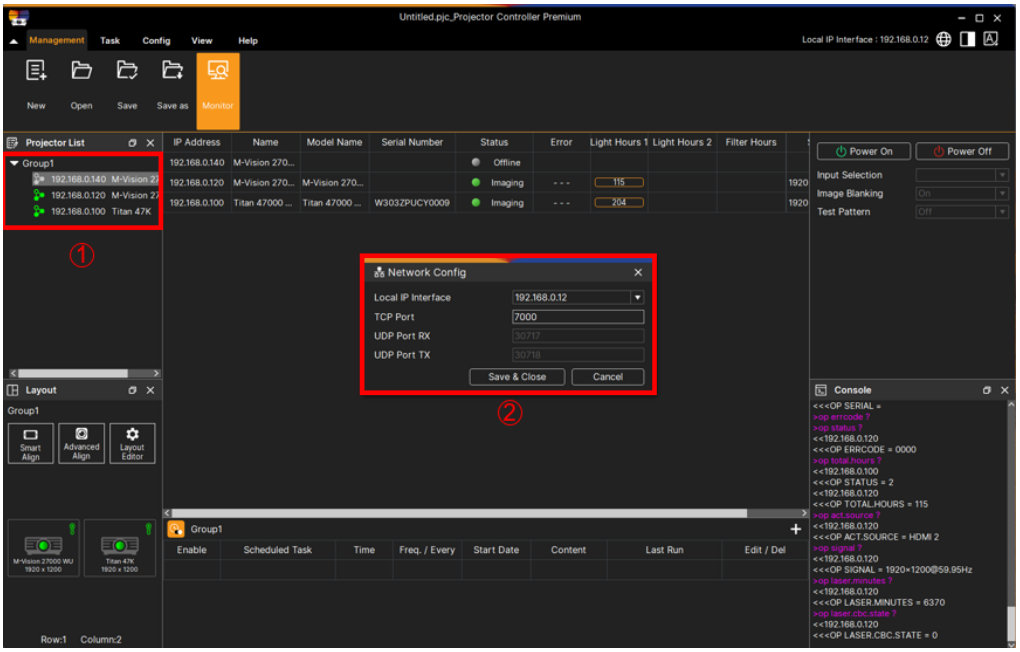


Fig 5.4 Set up projectors IP and Port

Step 5. ① Jump to help page, ② and click the license manager

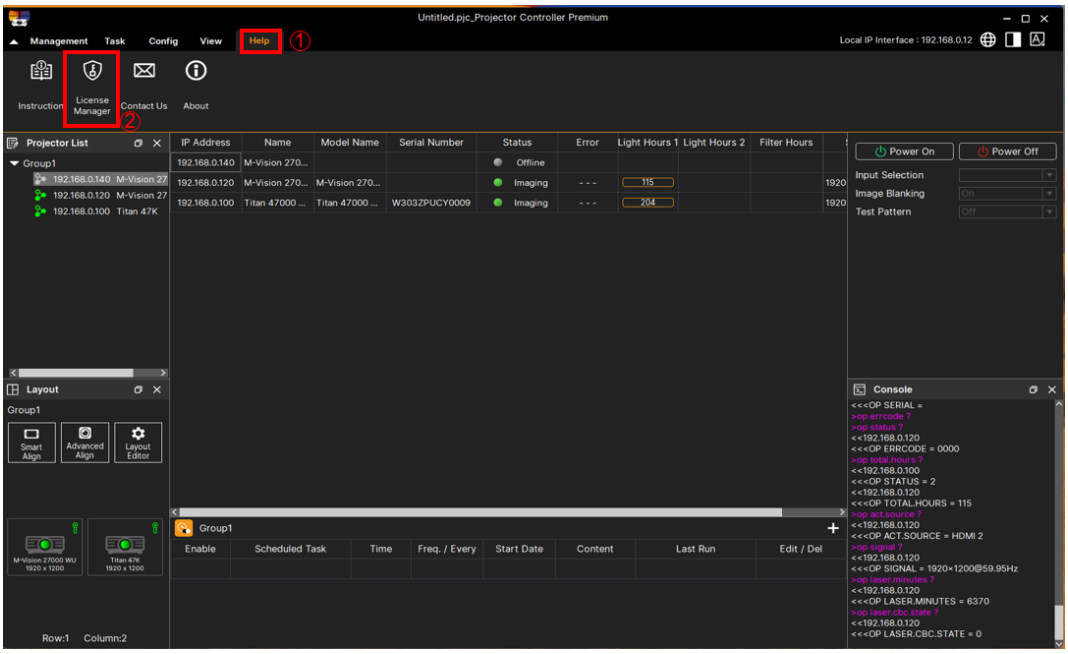


Fig 5.5 Set the license

Step 6. Click projector activation

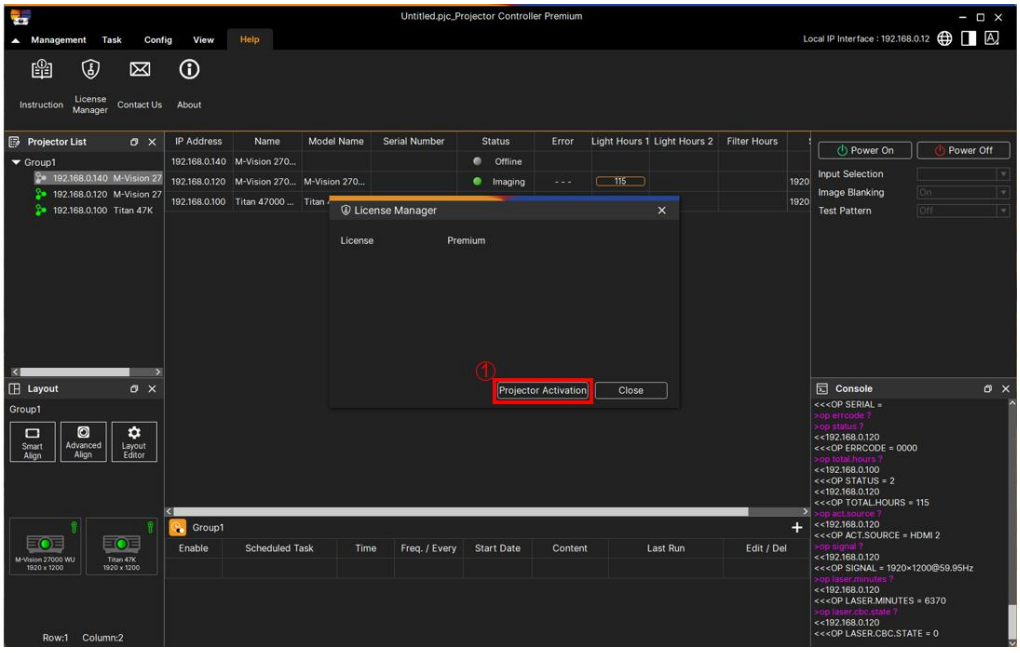


Fig 5.6 Activate

Step 7. Click activate.

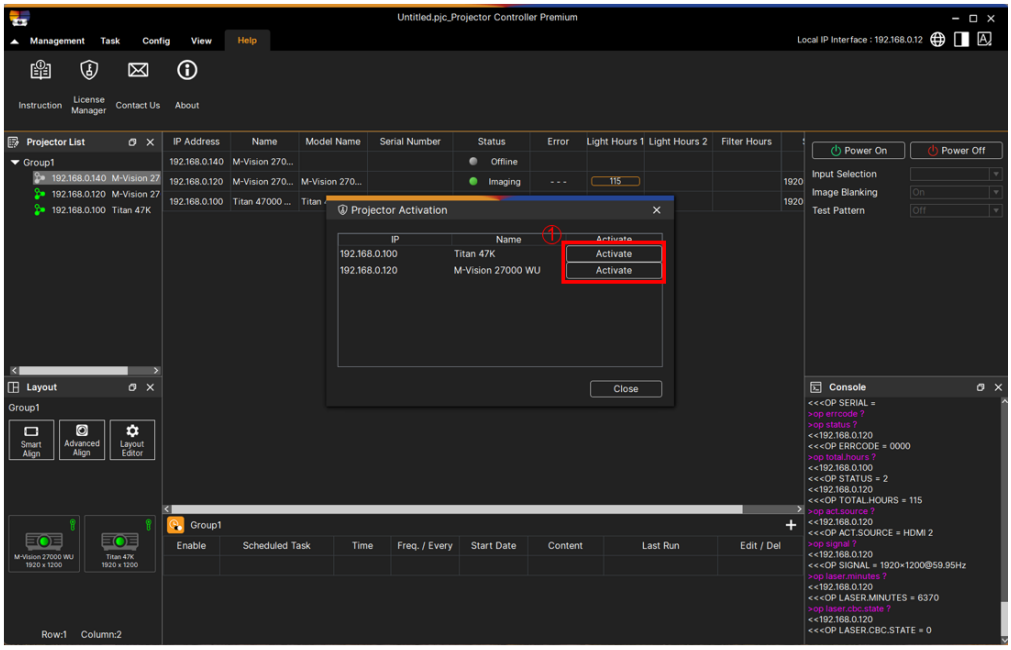


Fig 5.7 Click Activate

Step 8. Activate the projector

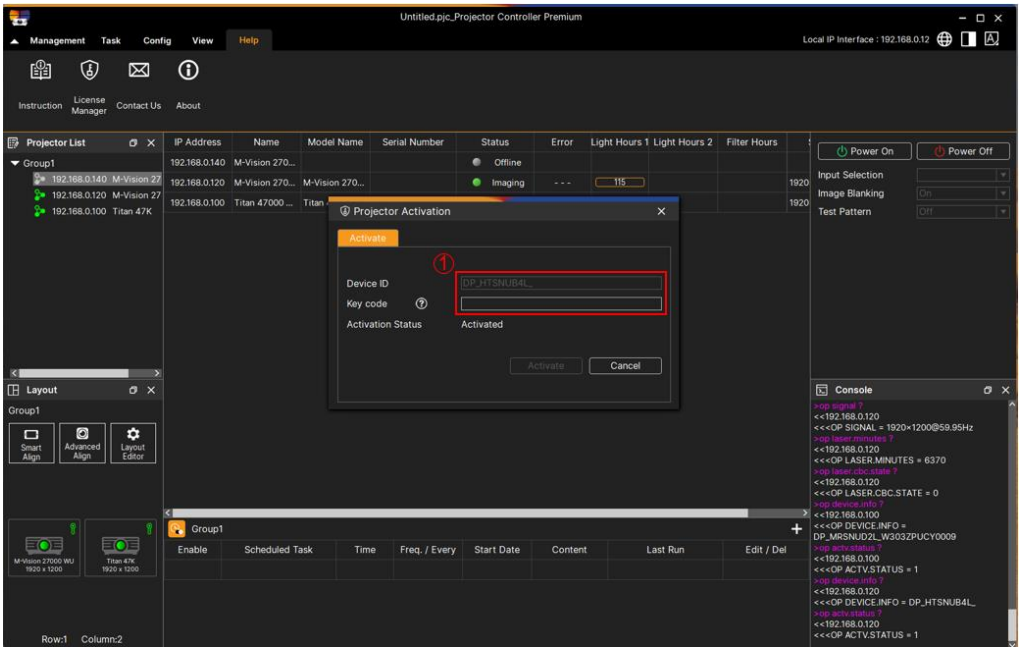


Fig 5.8 Enter the key code and activate

Step 9. ① Click layout editor. ② Drag IP to box..

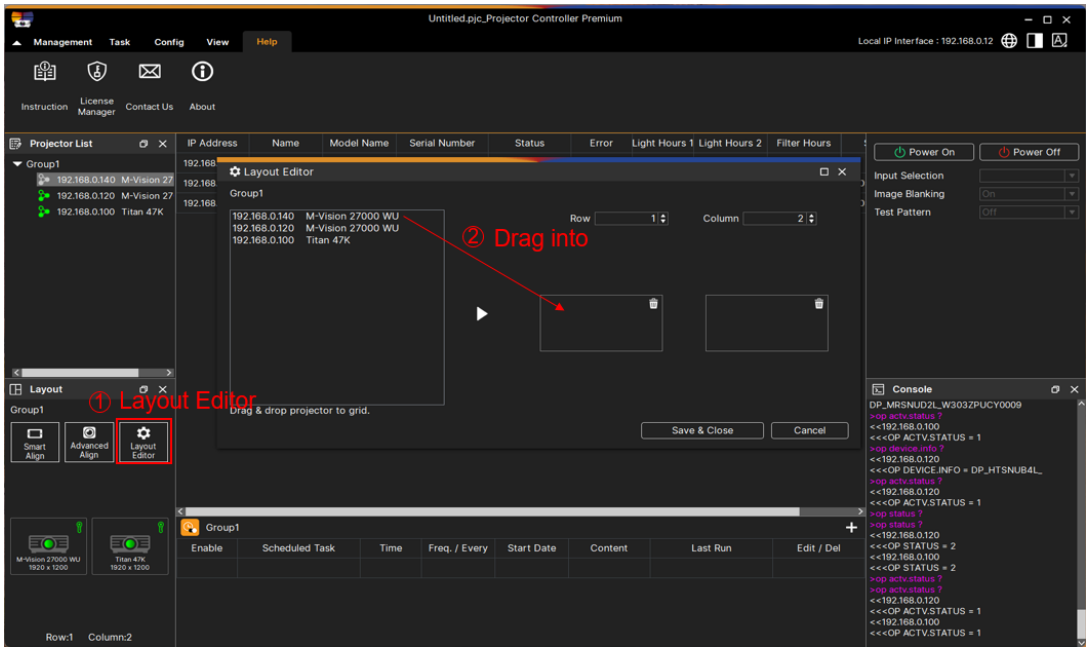


Fig 5.9 Set up IP Layout

Step 10. ① Click advanced align. ② Drag display into Layout Editor Box.③.Run the program

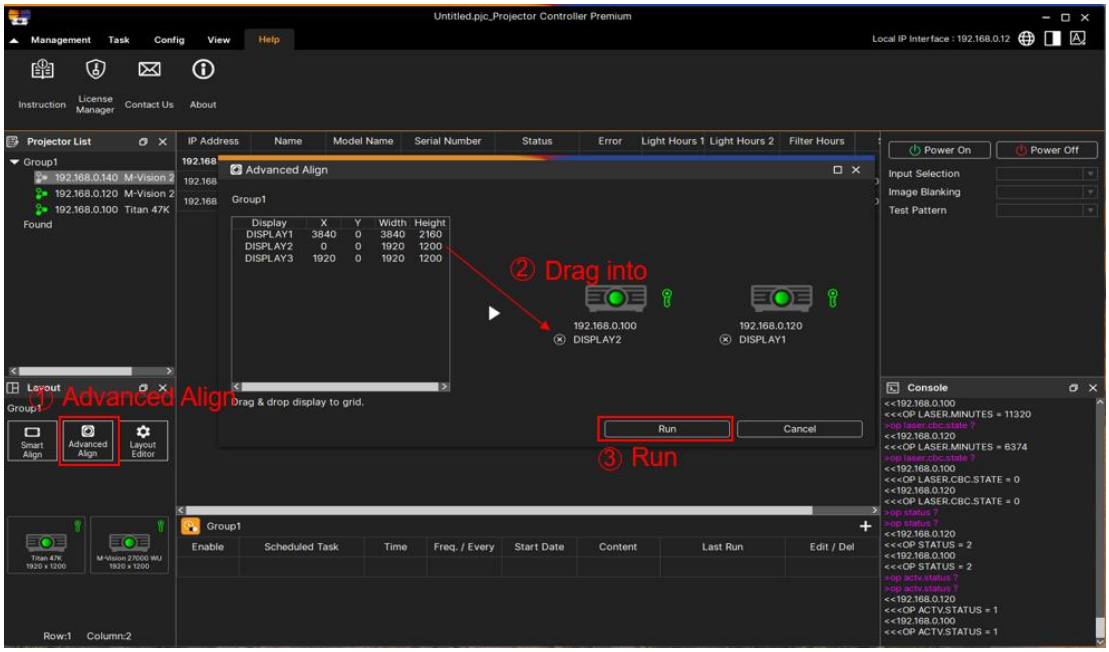


Fig 5.10 Set up Display

Step 11. Get into VIOSO Program

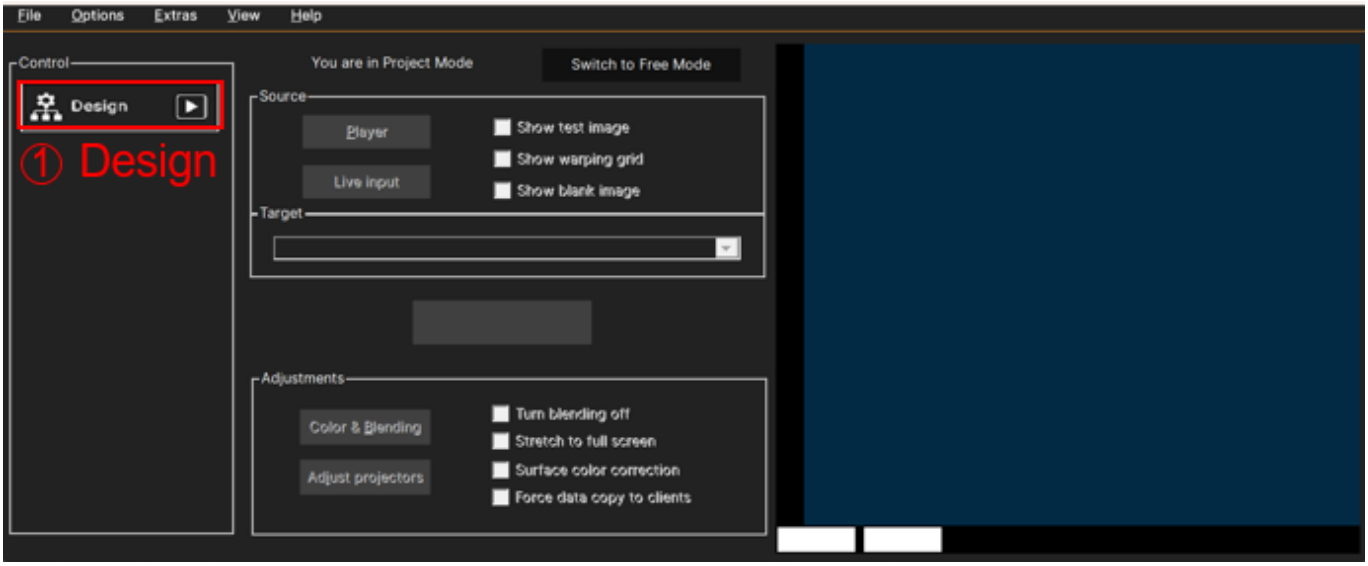


Fig 5.11 Click Design

Step 12. Check the topology of calibration projector if ok, finish.

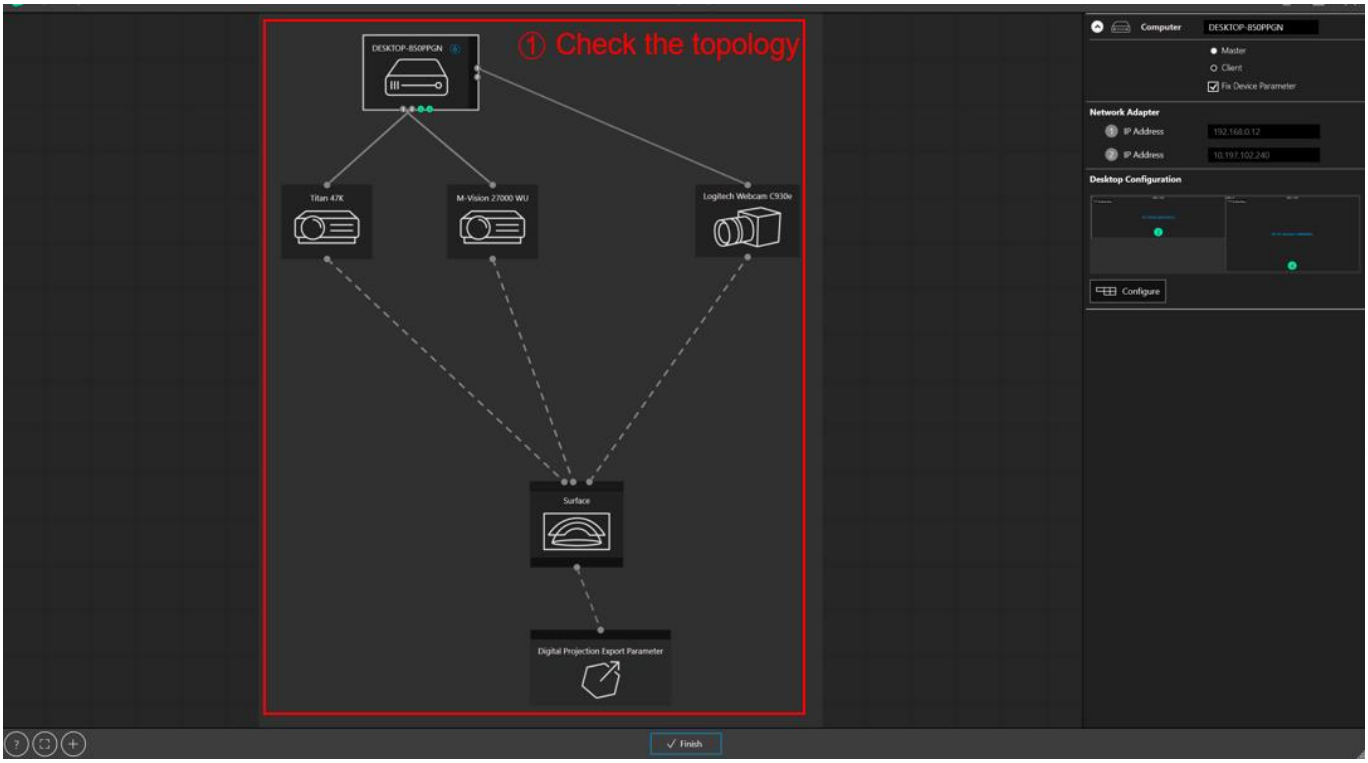


Fig 5.12 Check the design

Step 13. Activate the projectors.

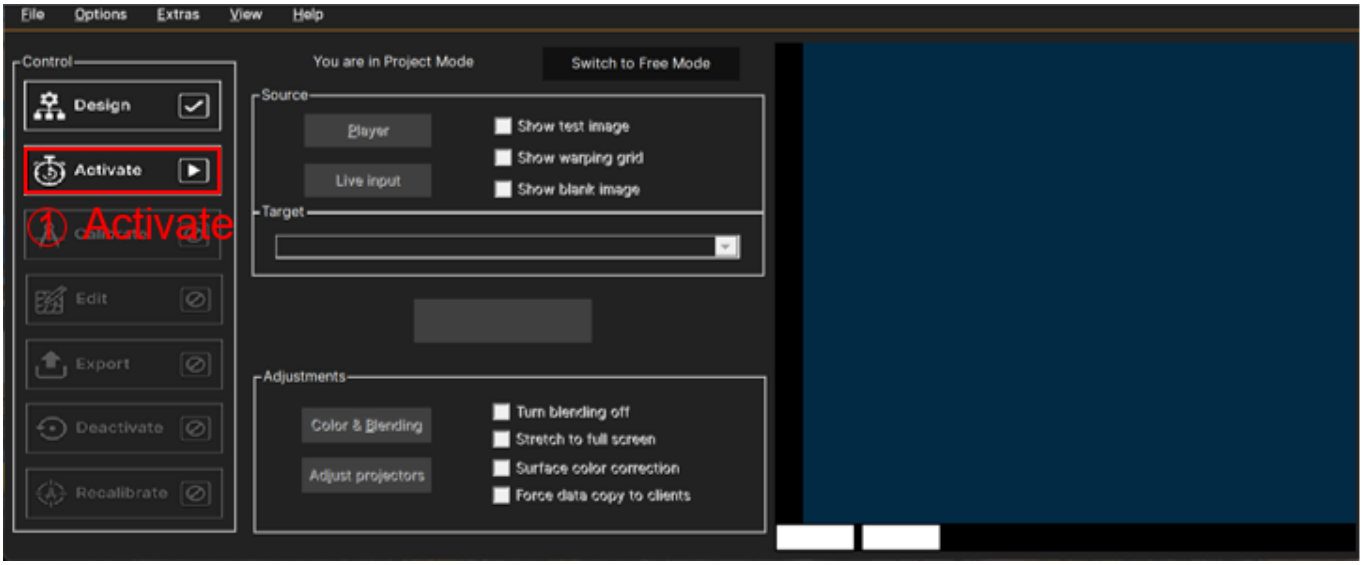


Fig 5.13 Activate the projectors

Step 14. Start to Calibrate

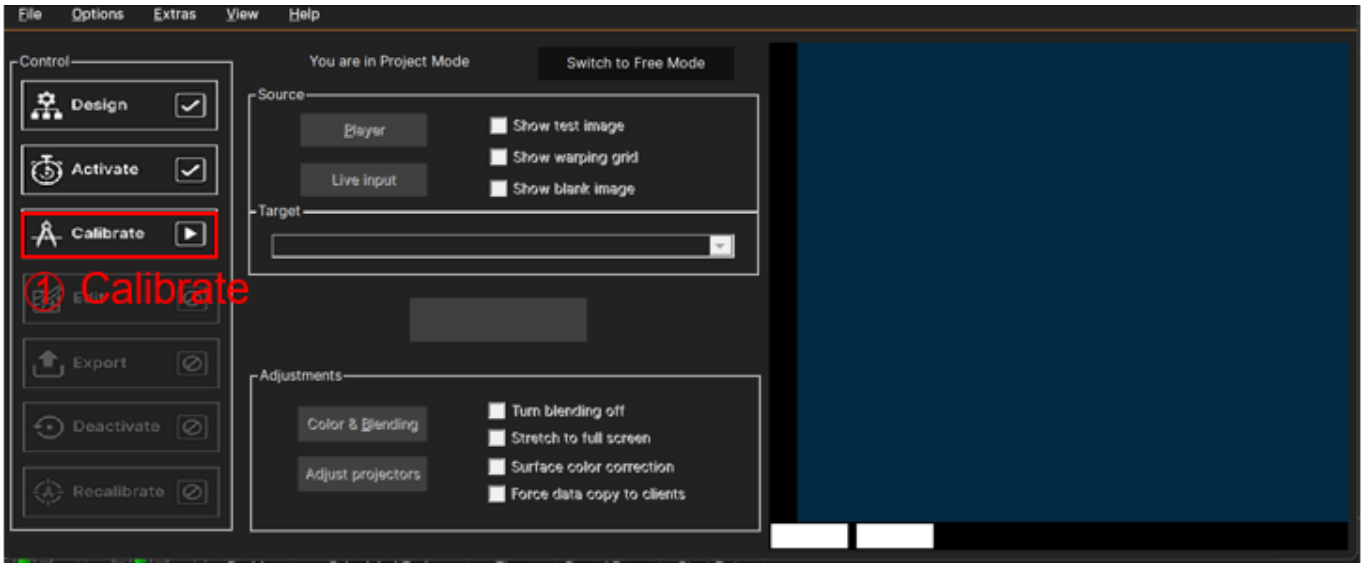


Fig 5.14 Calibrate

Step 15. Select the method and next

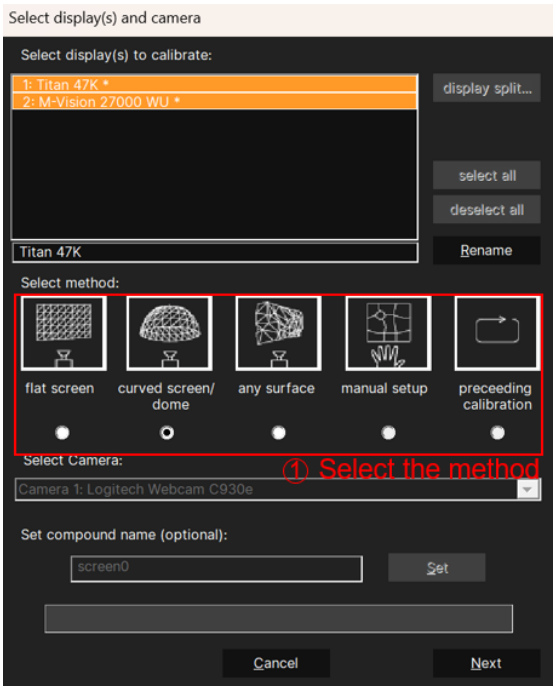


Fig 5.15 Select the method

Step 16. Set display arrangement and next

Fig 5.16 Set display arrangement

Step 17. Set the mask and camera to the adaptable situation and next.

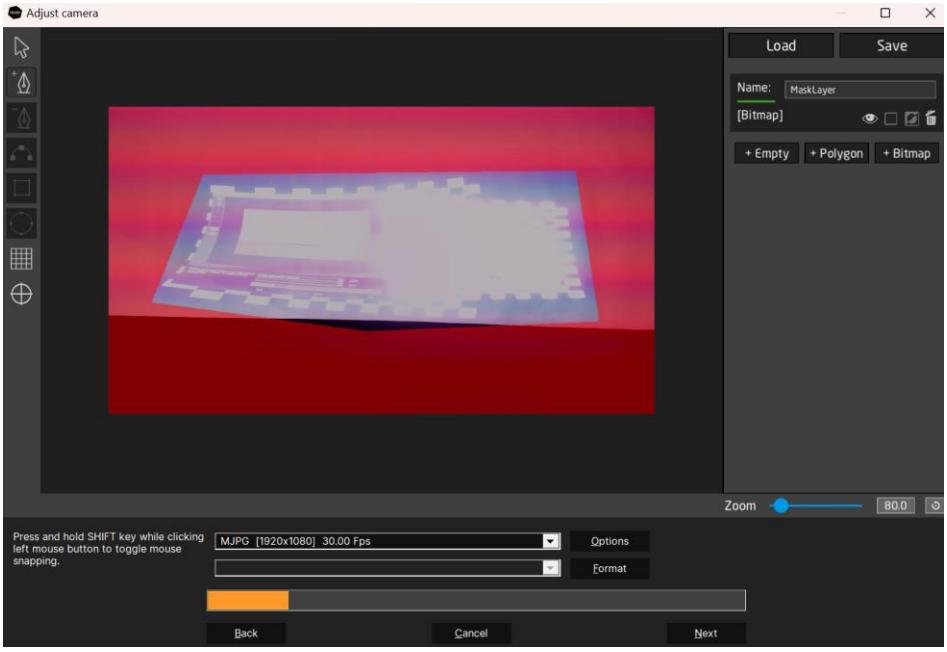


Fig 5.17 Adjust camera

Step 18. Set up the brightness of display to be suitable for calibration

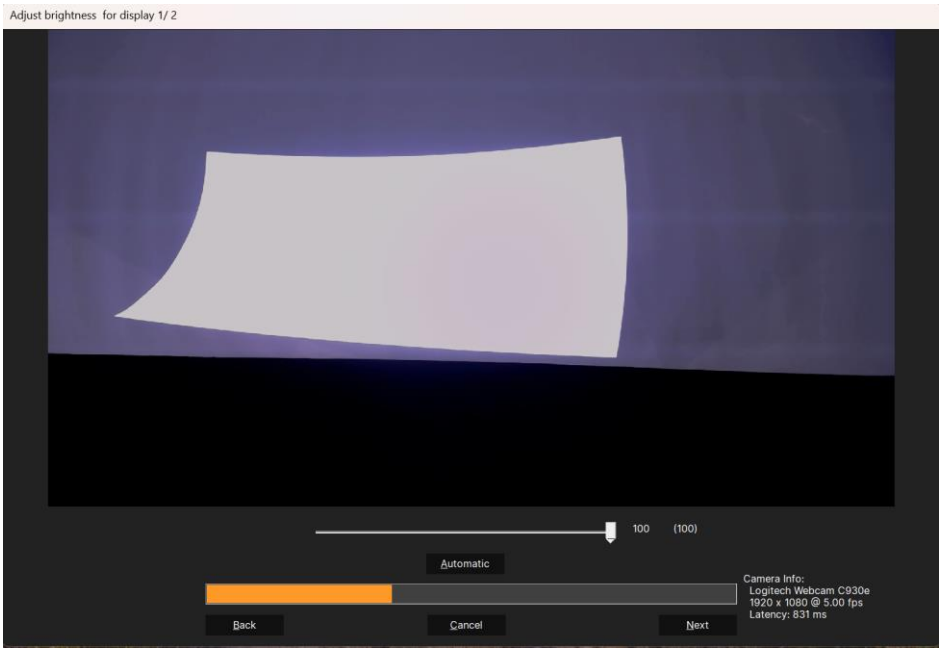


Fig 5.18 Adjust Brightness for display

Step 19. Perform new scan

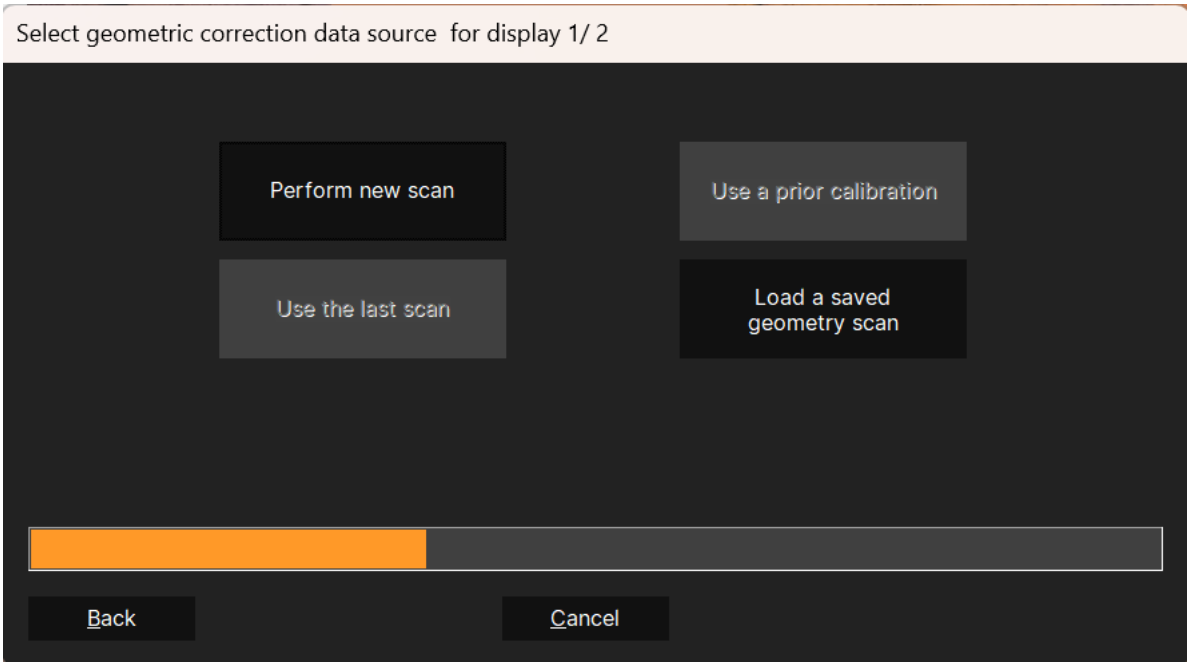


Fig 5.19 Perform new scan

Step 20. Adjust size of scan pattern for display. You can change the size and margin to be suitable value. Then click next to calibrate.

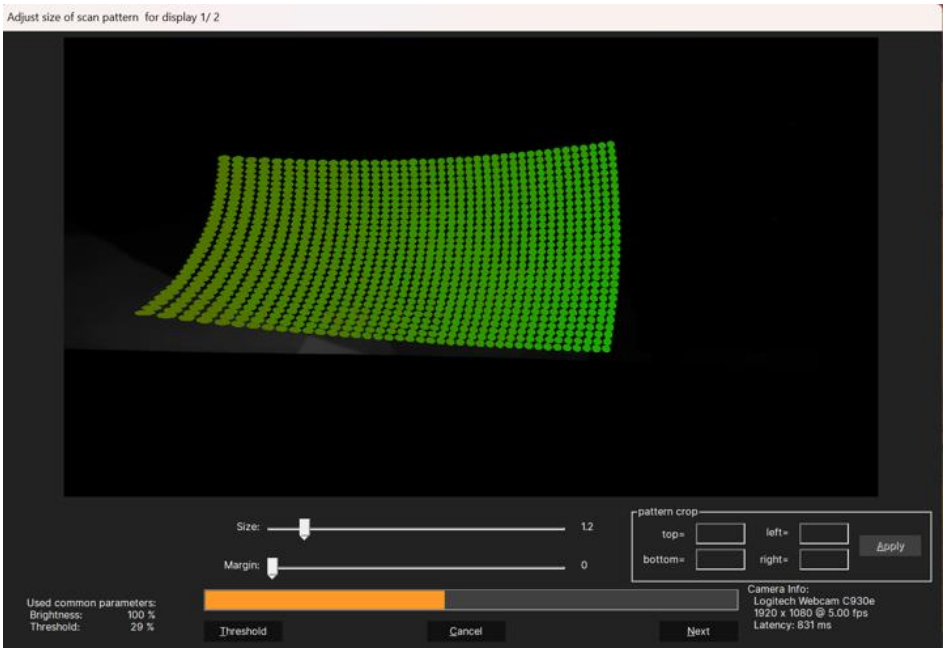


Fig 5.20 Adjust size of scan pattern for display

Step 21. Calibrating

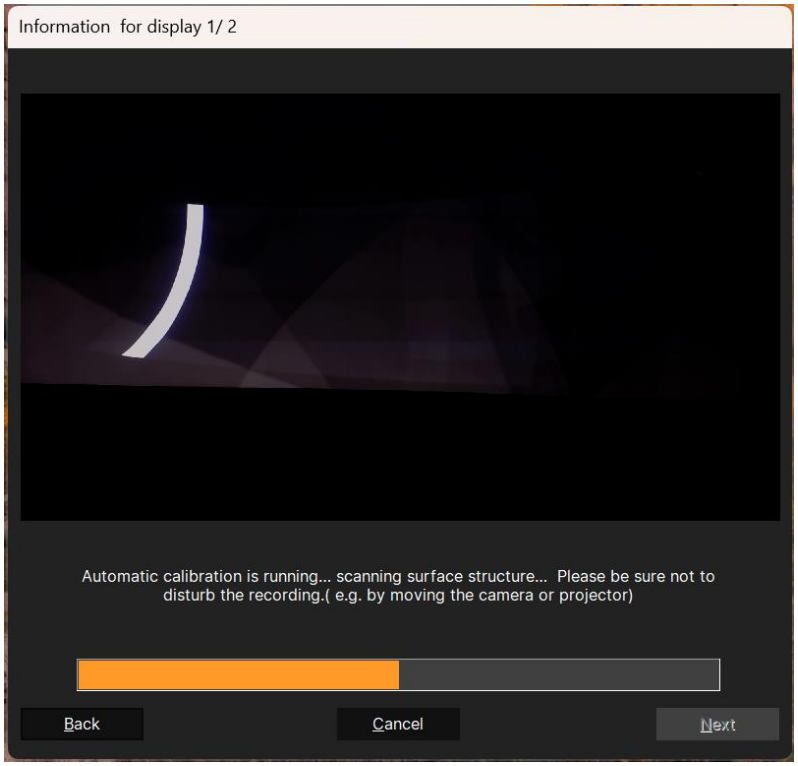


Fig 5.21 Calibrating

Step 22. Check the parameters and use different method to make feature collection better.

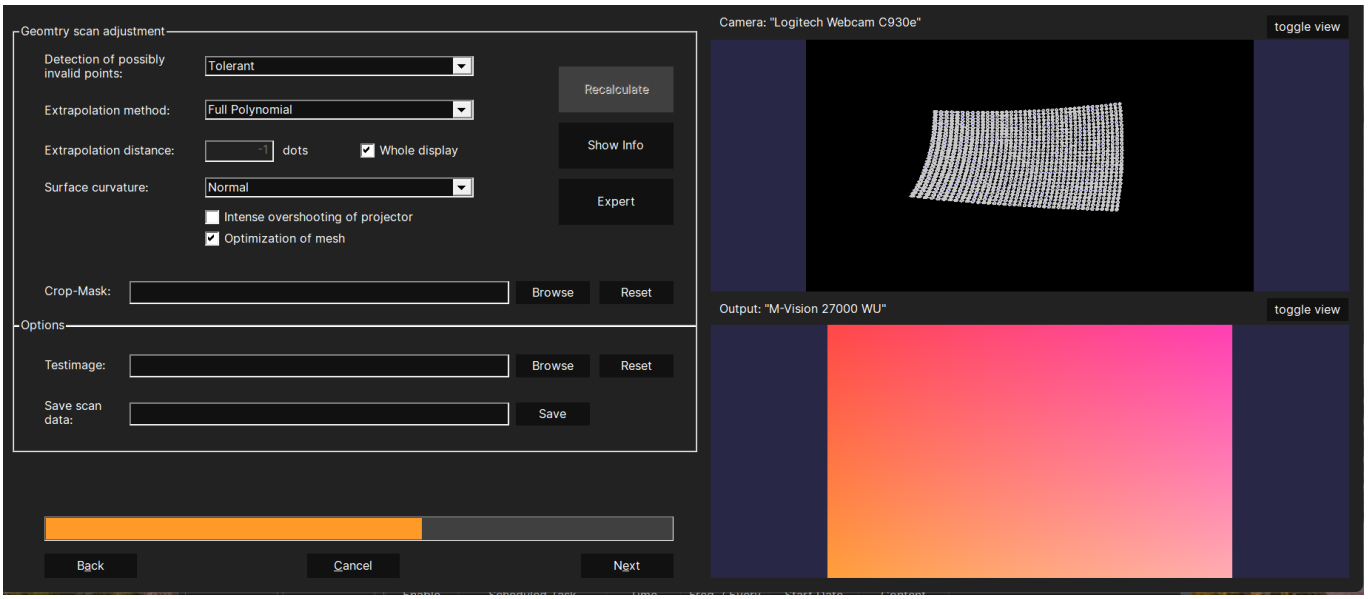


Fig 5.22 Adjust the computing parametric

Step 23. Inspect calibration for display.

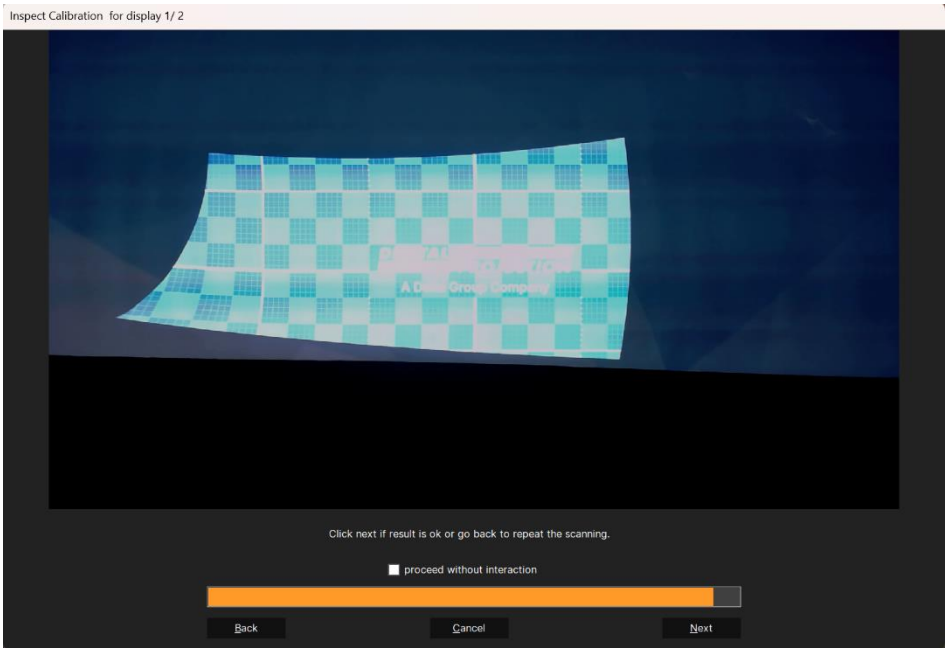


Fig 5.23 Inspect the calibration result for display

Step 24. Redo the step 18~23 steps to other projectors.

Step 25. Click Edit

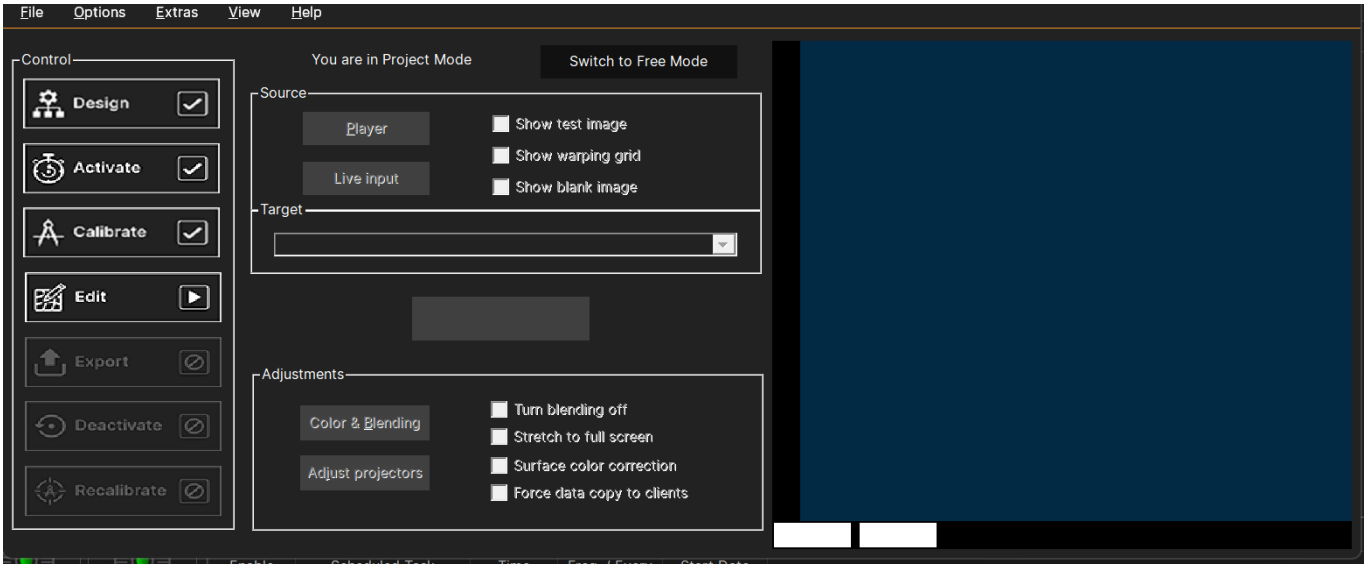


Fig 5.24 Click Edit

Step 26. Edit the calibration result

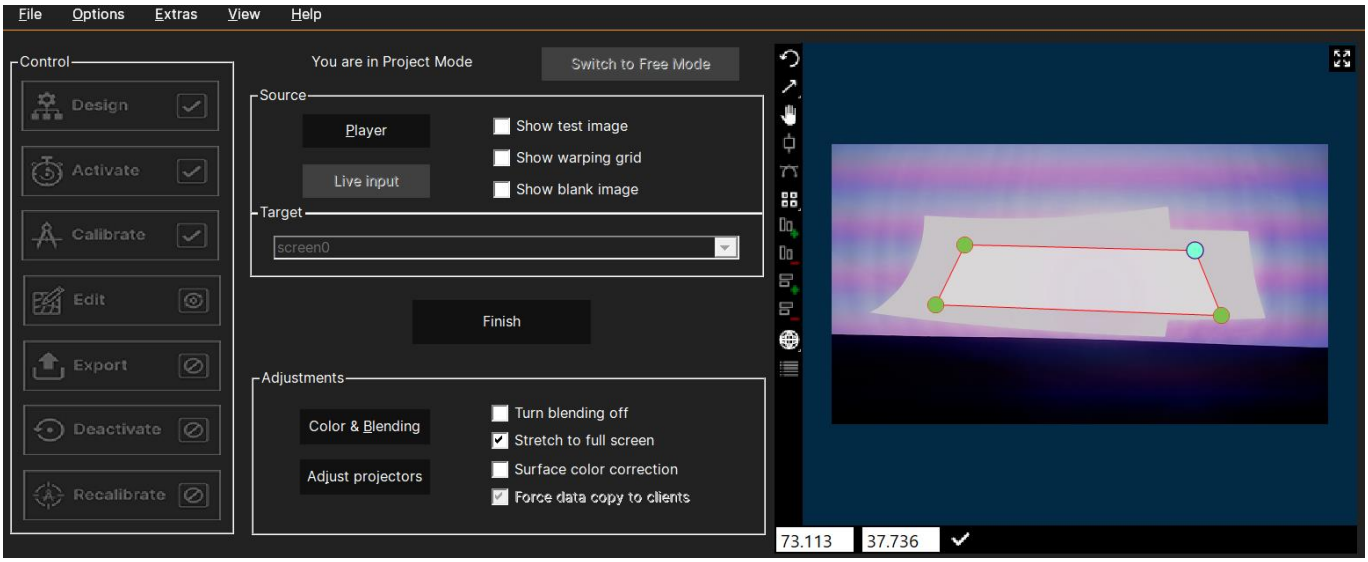


Fig 5.25 Click Design

Step 27. Export calibration result

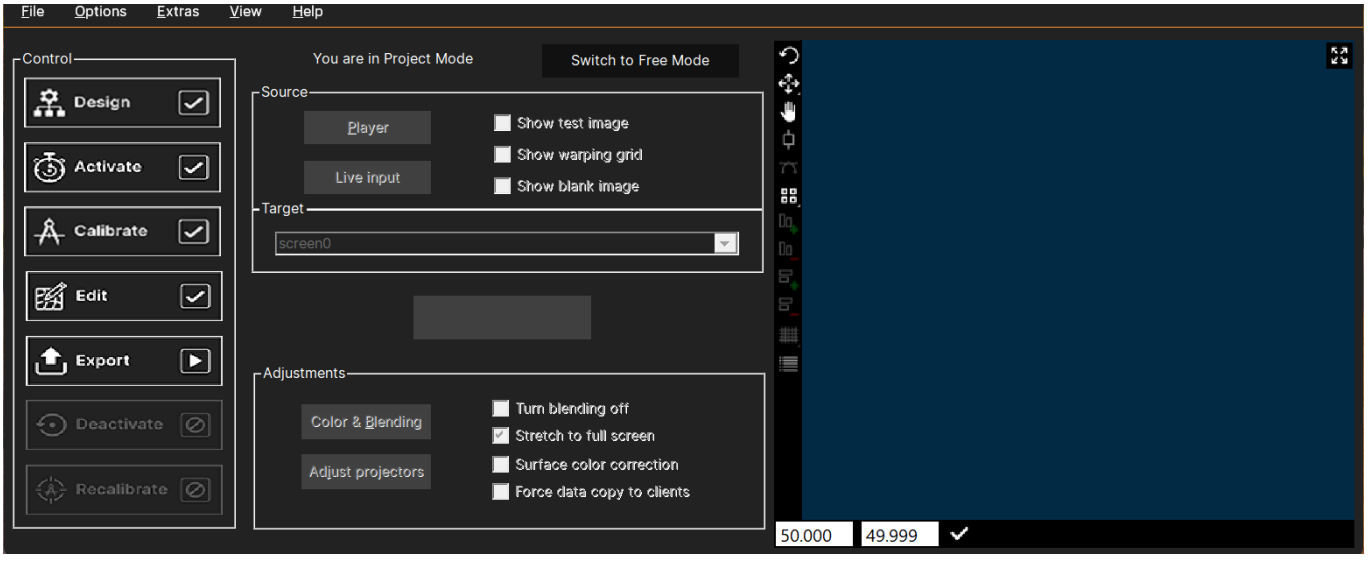


Fig 5.26 Export

Step 28. Deactivate to make the display to be the expected shape.

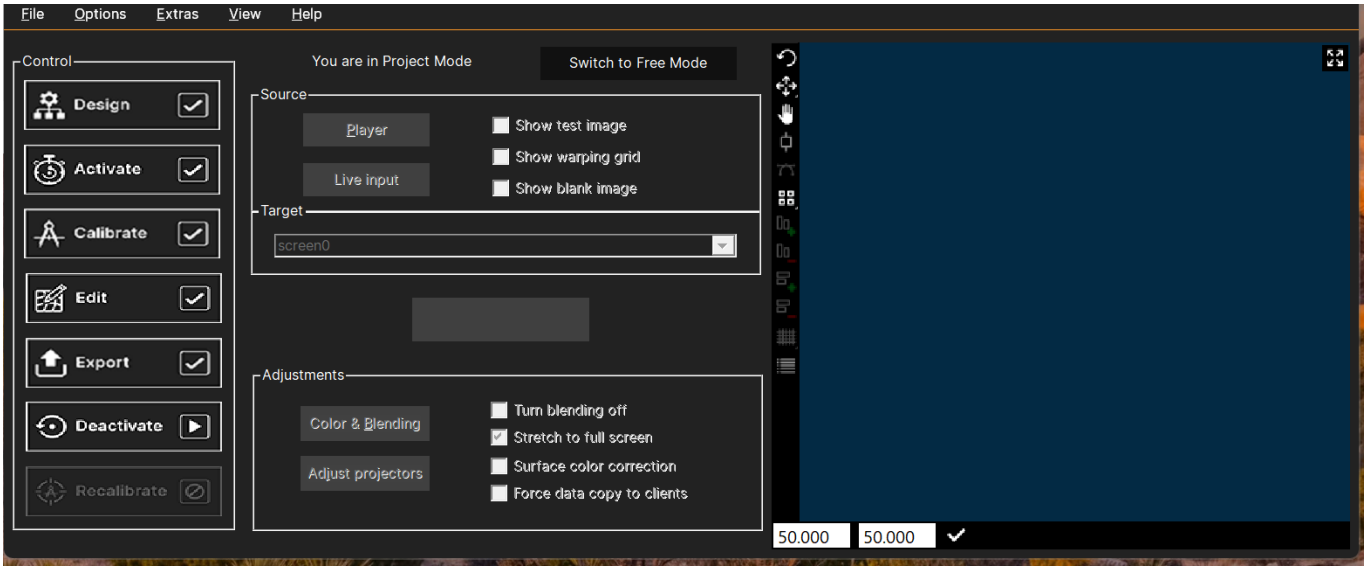


Fig 5.27 Deactivate

13. **Smart Align**

13.1 System Requirements

Part 1. Computer System

The software runs on Windows 10 and Windows 11

- Use NVIDIA Quadro based system whenever possible. This results in the greatest flexibility in number of projectors and supports all use cases. All current Quadro GPUs (from P series) have the capability to run warp & blend.
- Windows 10 and 11 recommended

Part 2. NVIDIA Card

For Desktop Hooking (Professional NVIDIA GPU, Support Mosaic Function).

2021 Release Information NVIDIA (Quadro / NVIDIA RTX Products).

NVIDIA RTX 6000 Ada Generation, NVIDIA RTX A6000, NVIDIA RTX A5500, NVIDIA RTX A5000, NVIDIA RTX A4500, NVIDIA RTX A4000, NVIDIA RTX A2000 | A2000 12GB, NVIDIA T1000 | T1000 8GB, NVIDIA T600, NVIDIA T400 | T400 4GB, Quadro RTX 8000, Quadro RTX 6000, Quadro RTX 5000, Quadro RTX 4000, Quadro GV100, Quadro GP100, Quadro P6000, Quadro P5000, Quadro P4000, Quadro P2000, Quadro P1000, Quadro P600, Quadro P400, Quadro M6000 24GB, Quadro M6000, Quadro M5000, Quadro M4000, Quadro M2000, Quadro K6000, Quadro K5200, Quadro K5000, Quadro K4000, Quadro K4200, Quadro K2200, Quadro K2000, Quadro K2000D, Quadro K1200, Quadro K620, Quadro K600, Quadro K420, Quadro 410

2023 Release information from NVIDIA (Quadro / NVIDIA RTX Products).

- NVIDIA RTX 6000 Ada Generation, NVIDIA RTX A6000, NVIDIA RTX A5500, NVIDIA RTX A5000, NVIDIA RTX A4500, NVIDIA RTX A4000, NVIDIA RTX A2000 | A2000 12GB, NVIDIA T1000 | T1000 8GB, NVIDIA T600, NVIDIA T400 | T400 4GB, Quadro RTX 8000, Quadro RTX 6000, Quadro RTX 5000, Quadro RTX 4000
- The version we already test.
- NVIDIA A2000 with driver Version.537.13
- NVIDIA K5000 with driver Versions. ---.--
- Consider very special driver and system configuration requirements.

Part 3 Nvidia Card Operating Procedures

Step1 Go to the website where we can download the driver of NVIDIA. Recommend download the driver from the official website

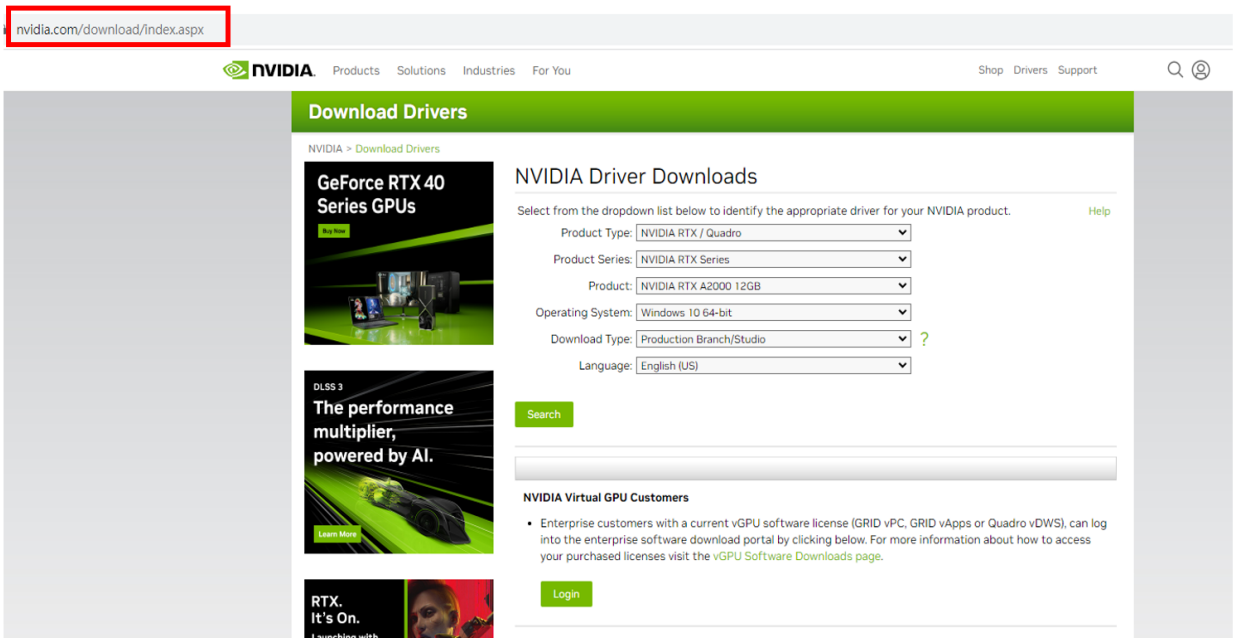


Fig 1.3.1 Nvidia driver search page – Web URL

Step 2 Select the version of NVIDIA and search the driver

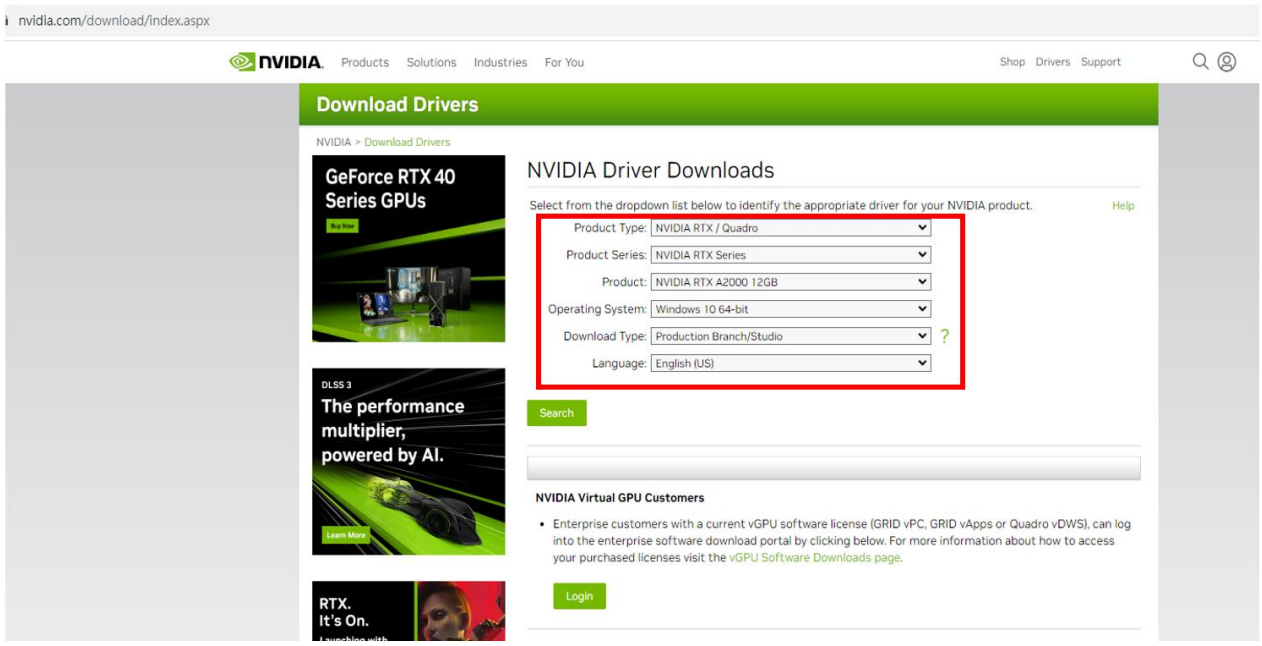
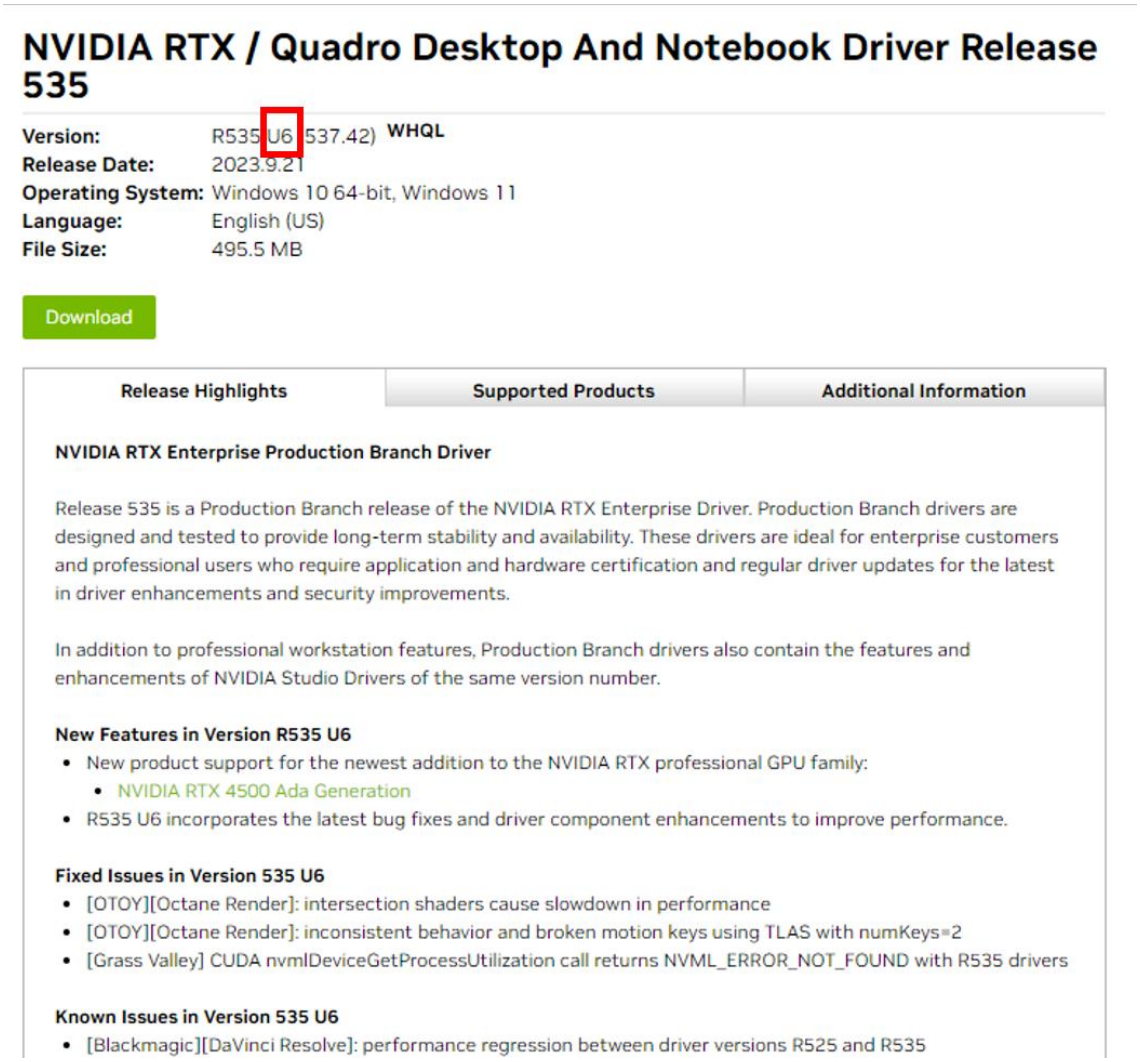


Fig 1.3.2 Nvidia driver search page – select option

Step3 Check the versions of NVIDIA Card must up U5 Versions and download it.



NVIDIA RTX / Quadro Desktop And Notebook Driver Release 535

Version: R535 U6 (537.42) **WHQL**
Release Date: 2023.9.21
Operating System: Windows 10 64-bit, Windows 11
Language: English (US)
File Size: 495.5 MB

Download

Release Highlights | Supported Products | Additional Information

NVIDIA RTX Enterprise Production Branch Driver

Release 535 is a Production Branch release of the NVIDIA RTX Enterprise Driver. Production Branch drivers are designed and tested to provide long-term stability and availability. These drivers are ideal for enterprise customers and professional users who require application and hardware certification and regular driver updates for the latest in driver enhancements and security improvements.

In addition to professional workstation features, Production Branch drivers also contain the features and enhancements of NVIDIA Studio Drivers of the same version number.

New Features in Version R535 U6

- New product support for the newest addition to the NVIDIA RTX professional GPU family:
  - NVIDIA RTX 4500 Ada Generation
- R535 U6 incorporates the latest bug fixes and driver component enhancements to improve performance.

Fixed Issues in Version 535 U6

- [OTOY][Octane Render]: intersection shaders cause slowdown in performance
- [OTOY][Octane Render]: inconsistent behavior and broken motion keys using TLAS with numKeys=2
- [Grass Valley] CUDA nvmlDeviceGetProcessUtilization call returns NVML_ERROR_NOT_FOUND with R535 drivers

Known Issues in Version 535 U6

- [Blackmagic][DaVinci Resolve]: performance regression between driver versions R525 and R535

Fig 1.3.3 Nvidia driver download page

13.2 System Preparation

Part 1 NVidia graphics card setup

Before start the calibration, we should follow the procedure as below. Check the NVDIA Driver and Install the driver.

Step 1. Check the NVIDIA driver is in a stable version, Higher than U5, you can follow the section 1.

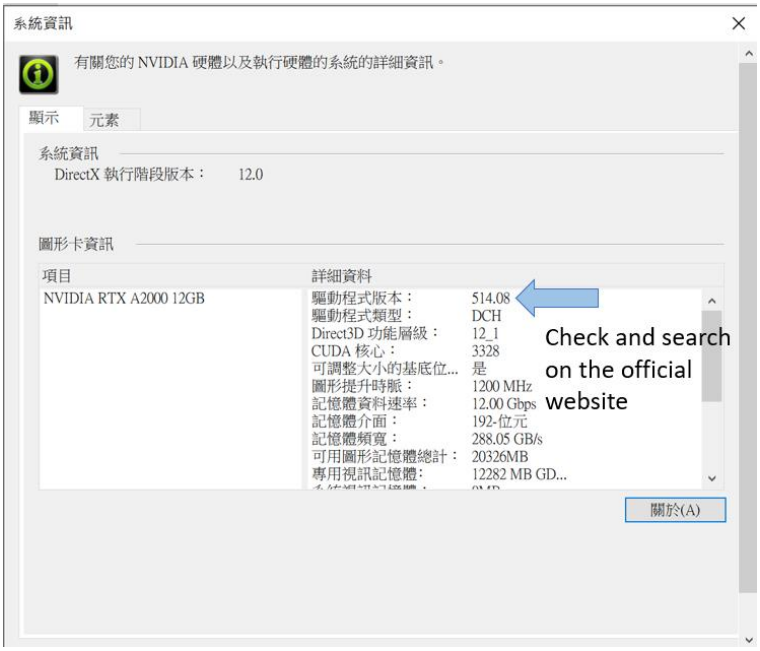


Fig 3.1.1 System information

Step 2. If not, recommend to uninstall current versions before you release the MOSAIC status, then install the stable versions.

There is some situation we encountered that you should reinstall NVIDIA Driver

- GPUs are missing in NVIDIA system topology.
- Connected displays not showing up in Windows, but listed in NVIDIA system topology (check adapters and signal cables first).
- NVIDIA control panel works very slowly.
- NVIDIA control panel nearly empty or not showing the usual set of features.
- Blue screen when operating with NVIDIA features (e.g. setting up Mosaic).
- Other anomalies.

Part 2. EDID Minding Setup

We have the following steps to setup the EDID.

Step 1. Right click on your desktop and click 'NVIDIA Control Panel'.

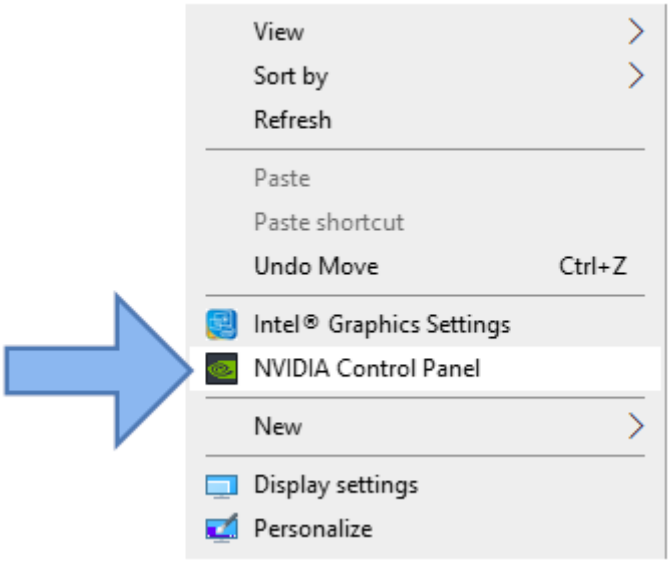


Fig 3.2.1 Right click on desktop and click NVIDIA Control Panel.

Step 2. Click on "View System Topology" and locate the display you want to modify and export EDID data. Click on 'EDID' (it should be marked as "Monitor").

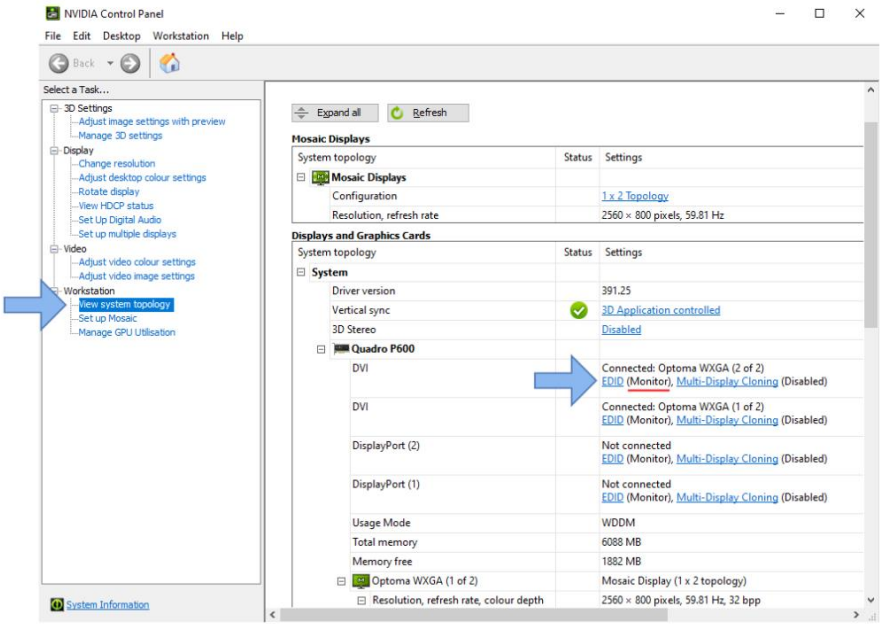


Fig 3.2.2 Click NVIDIA system topology

Step 3. On the "EDID management window", select the "Export" tab. Export the EDID data from the selected projector and save it onto the disk as a file.

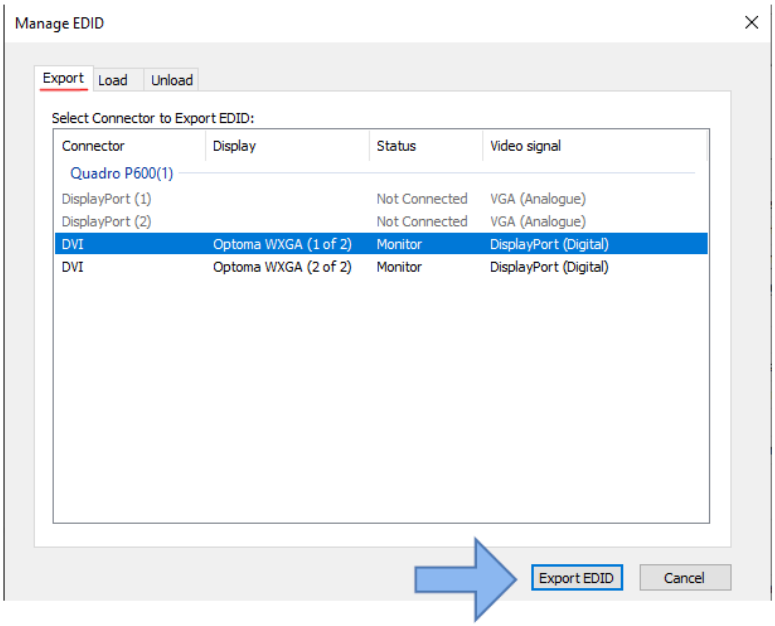


Fig 3.2.3 Manage EDID – Export EDID

Step 4. Load tab, browse, select the output and press load EDID.

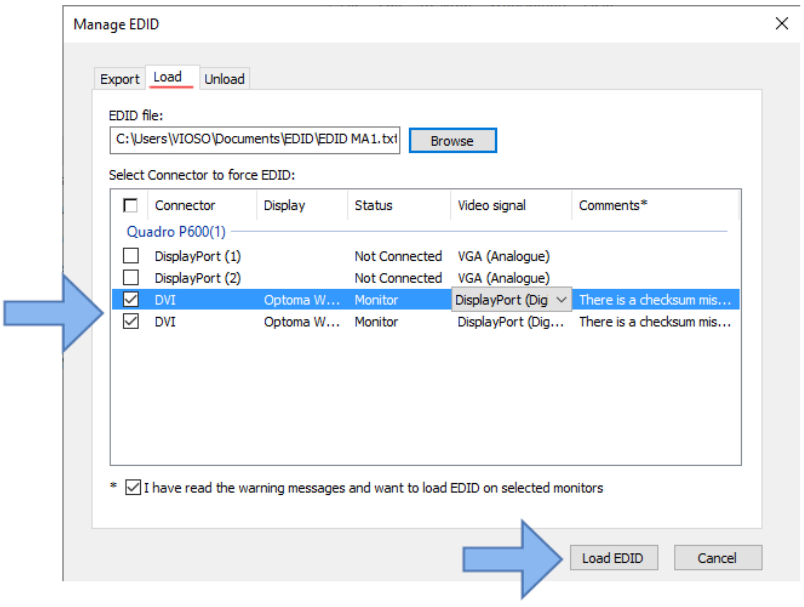


Fig 3.2.3 Manage EDID – Load EDID

Step 5. Check the result.

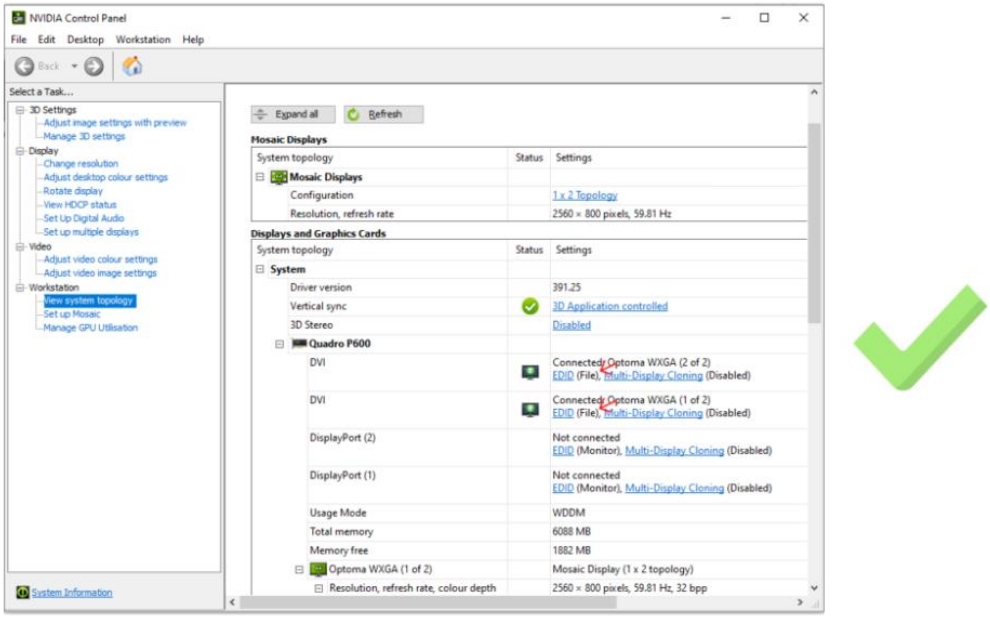


Fig 3.2.4 Check the result

13.3 System Activation & Projector Activation

Part 1 License activation from Advanced Align

The Status of PJ-Ctrl default is inactivated when finish the installation. If you want to have advanced function as Smart Align or Advanced Align please activate the license first.

Step 1. You can directly click advanced align and smart align. There will have a reminder to ask you to go to the activation page.

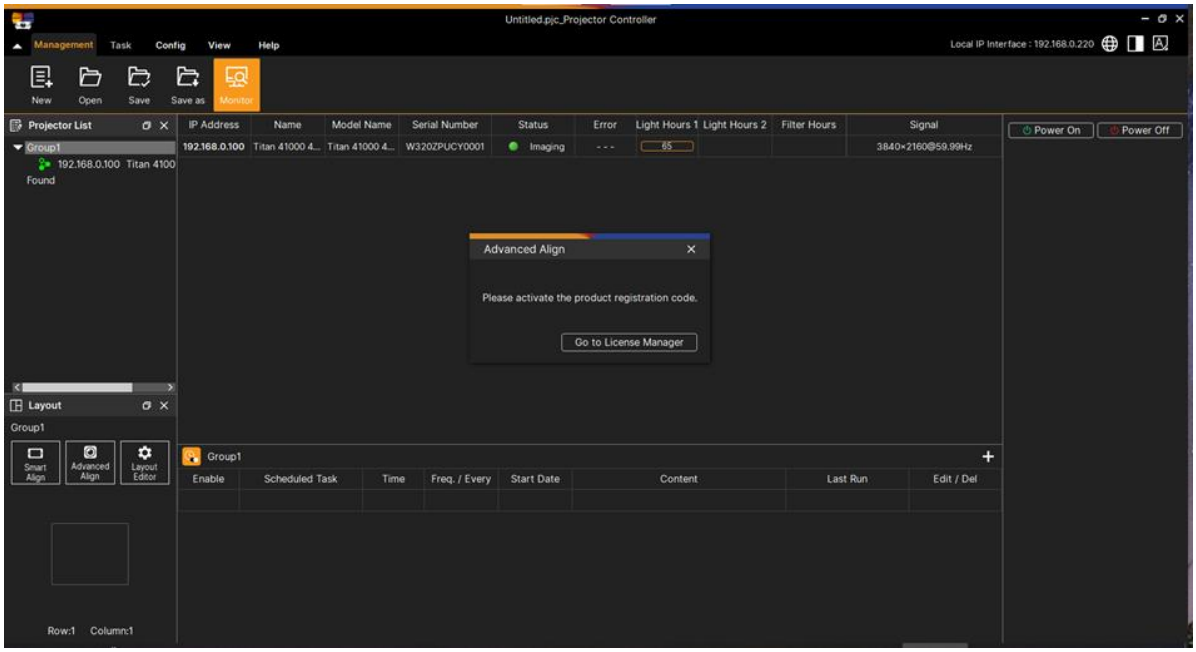


Fig 4.1.1 Activate license

Step 2. You can choose the Free 30-days Trial and activate product code..

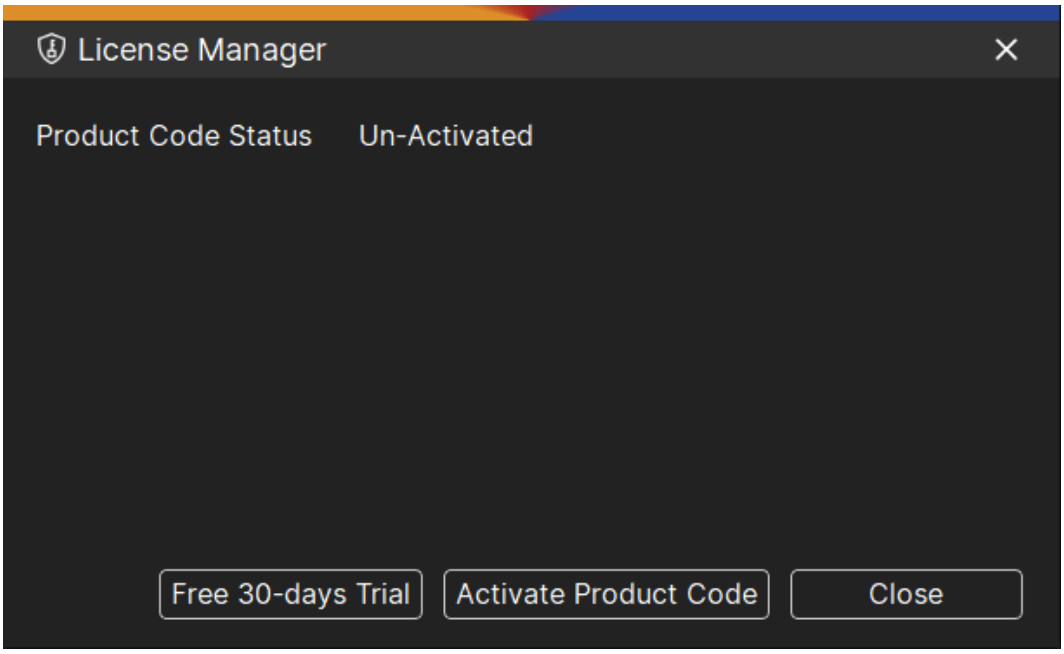


Fig 4.1.2 Activate Trial license

Step 3. You should confirm to make the license as trial versions. Then click ok to activate as a trial version. PJ-Ctrl will restart to be a trial version.

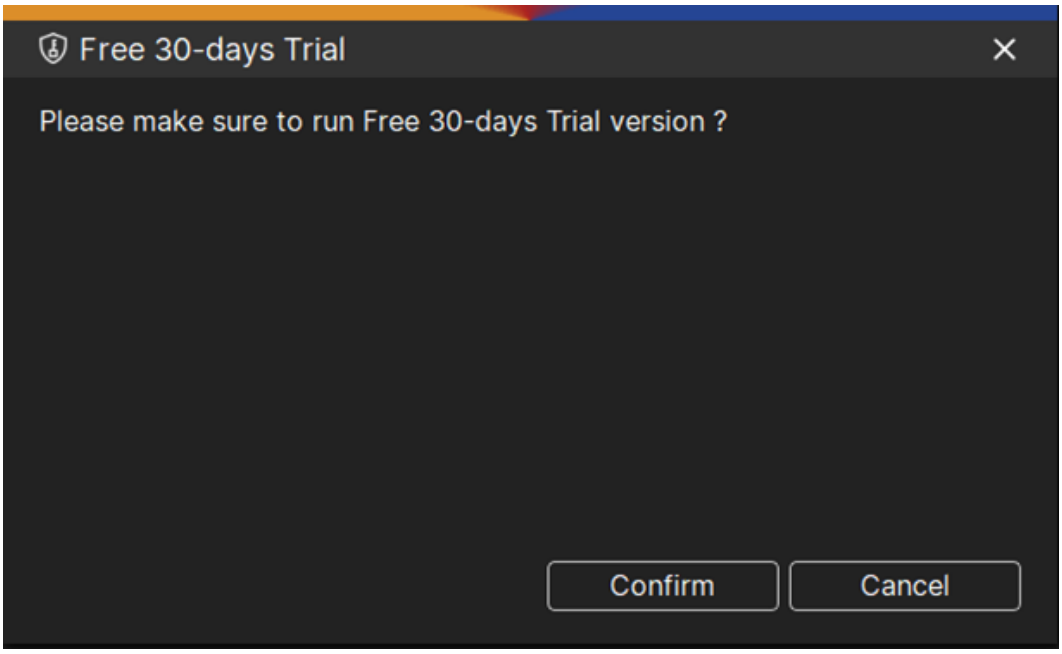


Fig 4.1.3-1 Confirm

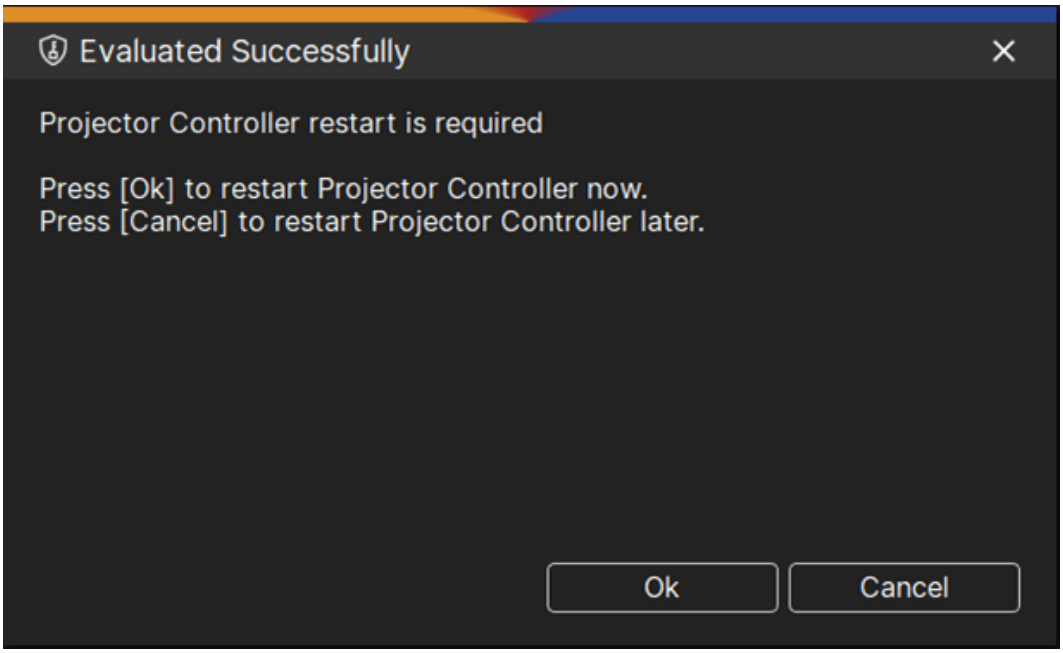


Fig 4.1.3-2 Ok

Step 4. After restart, you should go to licence manager page to check the versions, also you can purchase a license from the vendor and activate the license there.

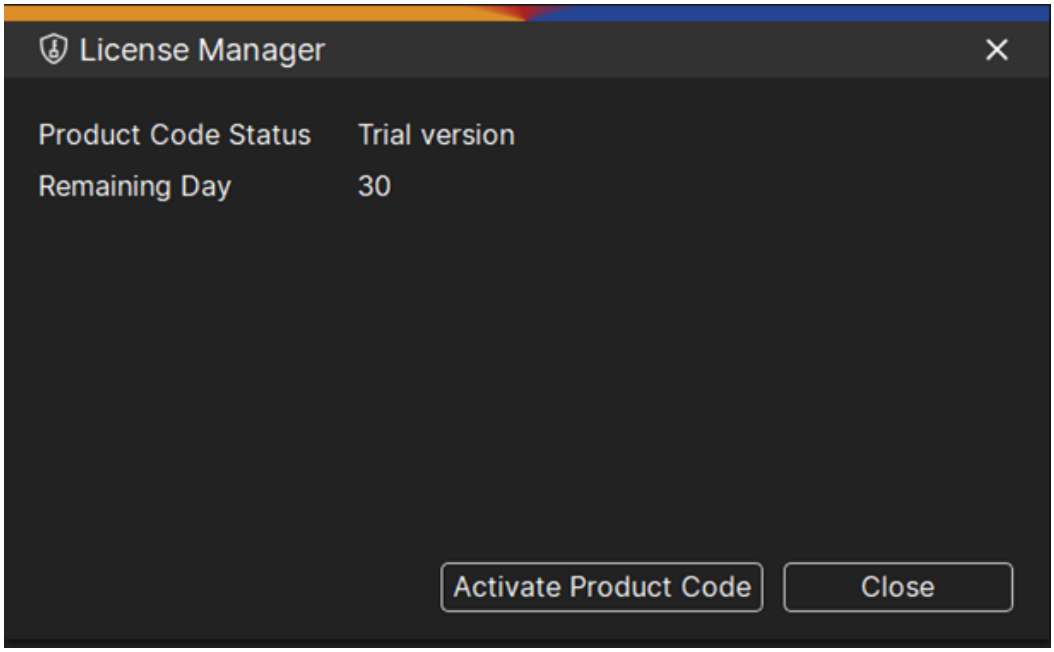


Fig 4.1.4 Check license status

Step 5. Vendor will give you a key code to activate the license.

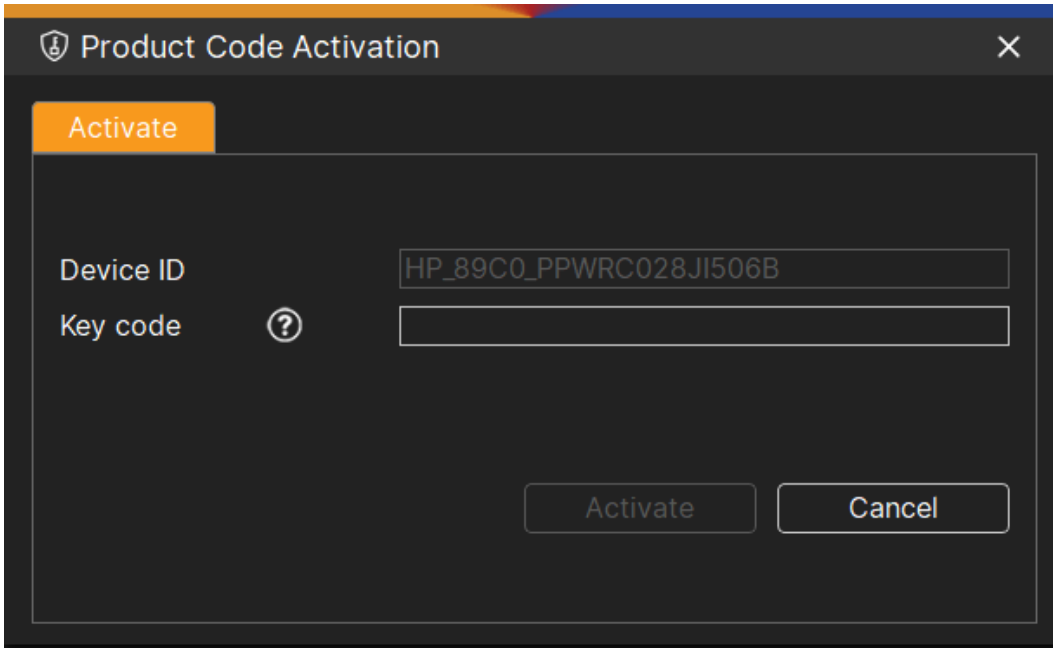


Fig 4.1.5 Product code activation

Step 6. After activating the license, you should restart the program again.

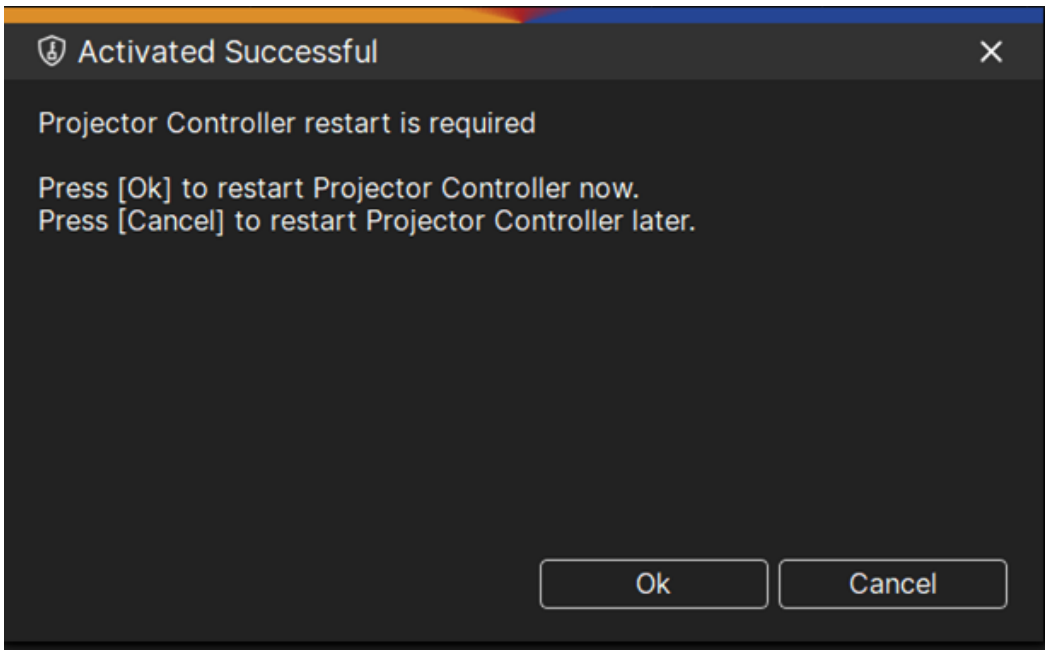


Fig 4.1.6 Ok

Step 7. You can check the license status from the license manager after license activation.

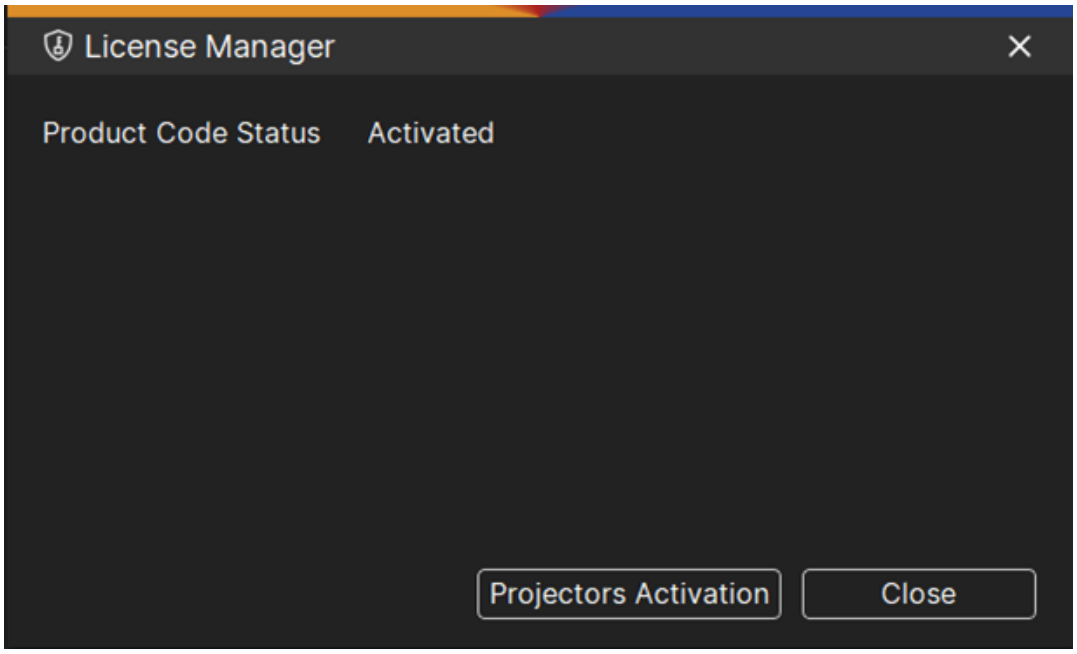


Fig 4.1.7 Check license status

Part 2. Projectors Activation from license manager

Help → License Manager

Click [Projectors Activation] to activate projector

Step 1. The list will show projectors with a status of Running and not yet activated, please press [Un-Activated], enter the keycode to activate the projector.

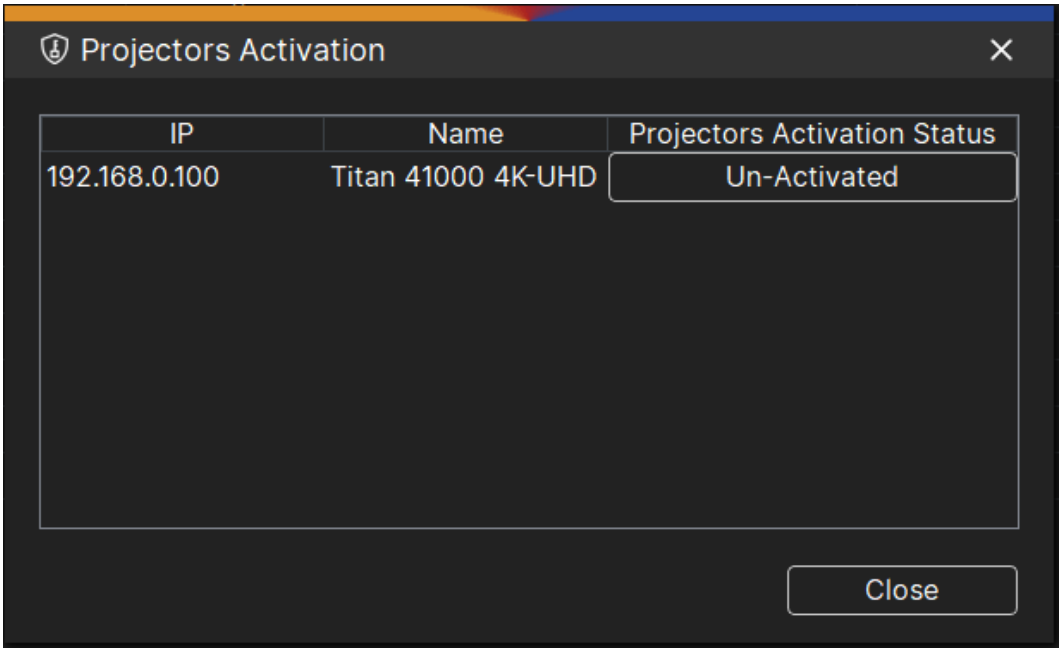


Fig 4.2.1-1 Projectors Activation Status

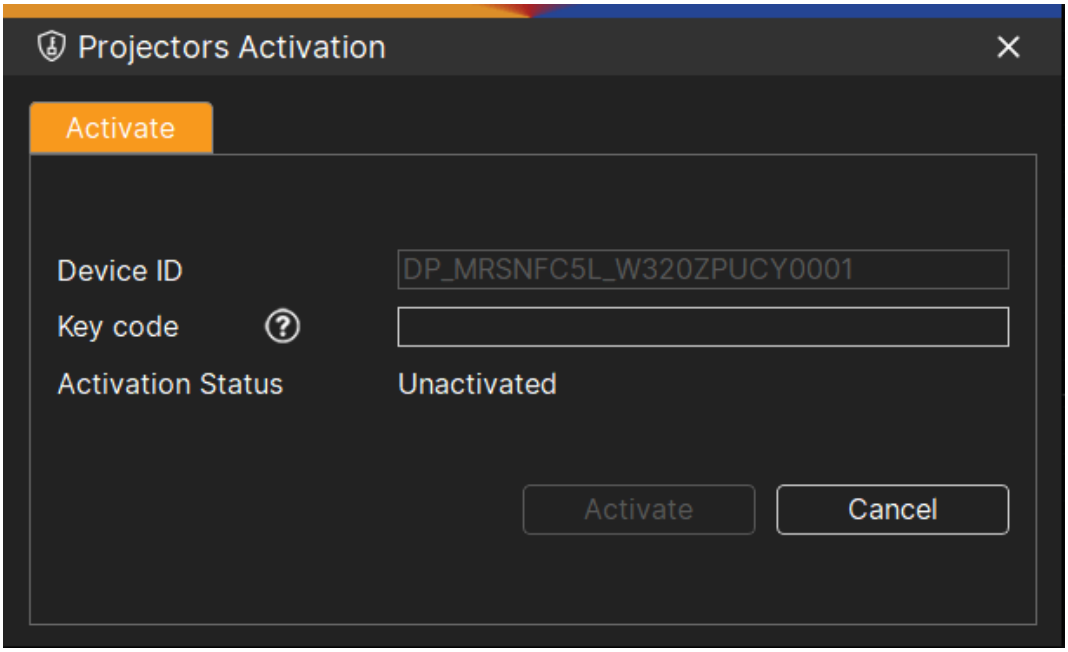


Fig 4.2.1-2 Projectors Activation

Step 2. Computer must keep in connect with the internet to make sure can be connected

to the license server to activate the license.

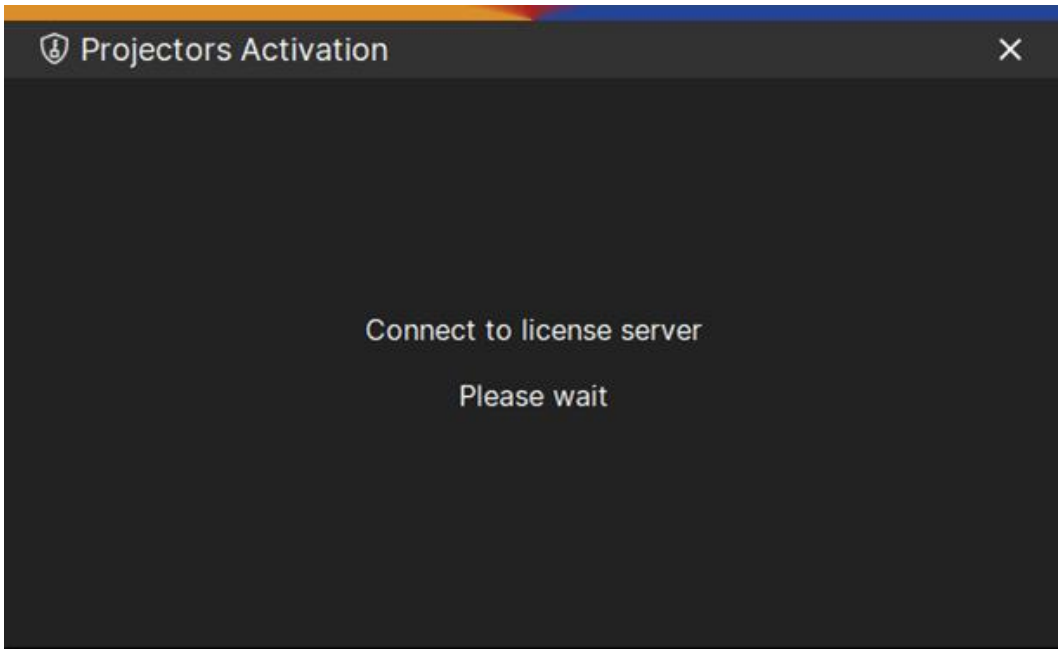


Fig 4.2.2 Connect to license server

Step 3. Activate Successful

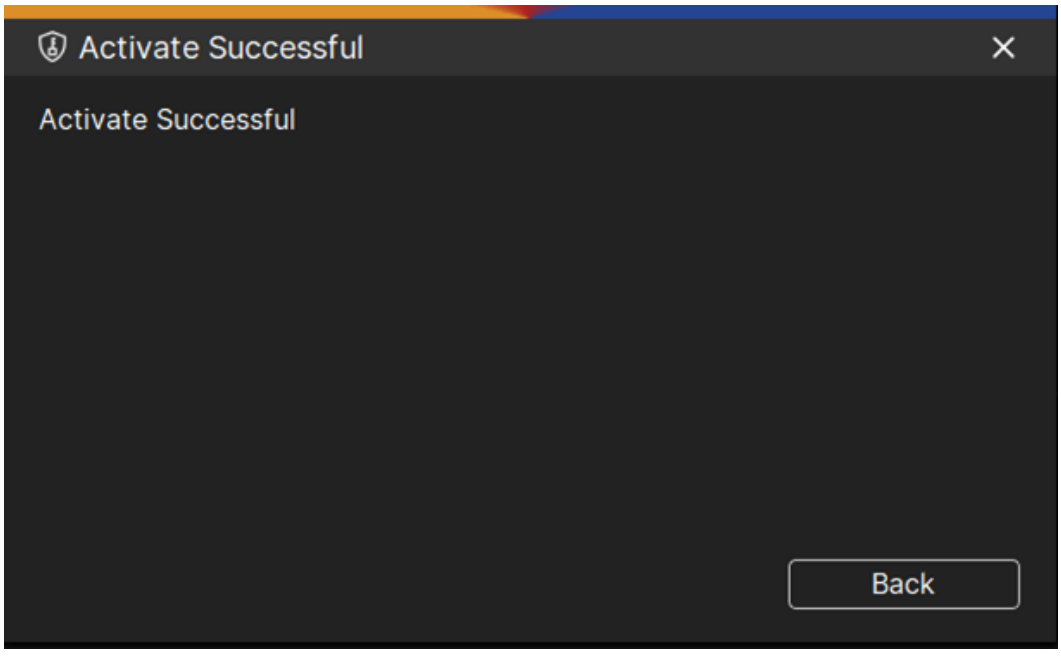


Fig 4.2.3 Activate successful

Step 4. It will show the activation status after activating projectors.

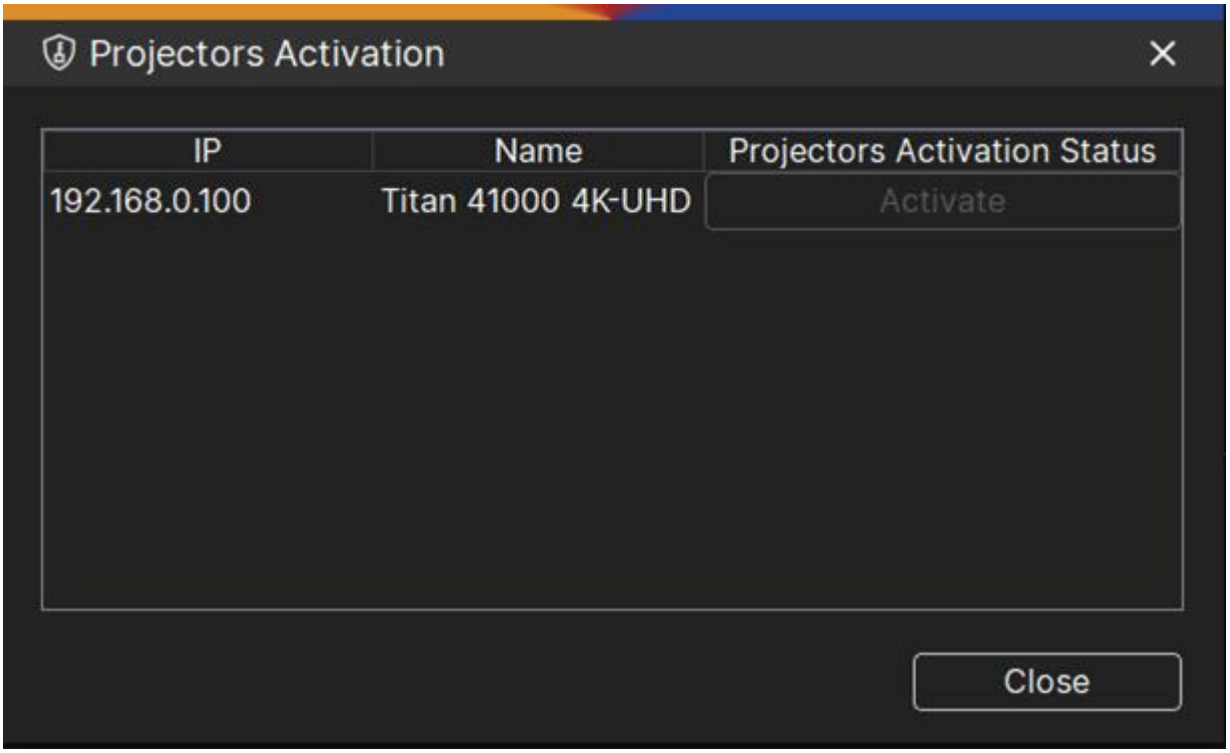


Fig 4.2.4 Check the license status

Part 3. Layout Editor

Step 1. Main window → Layout Editor

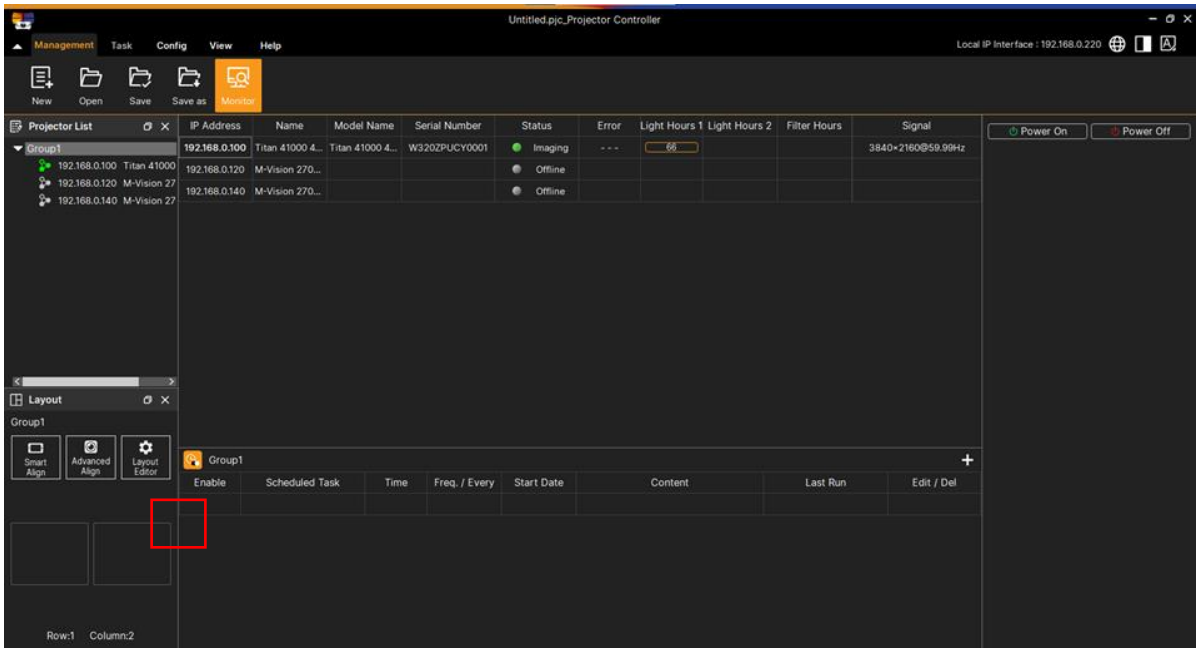


Fig 4.3.1 Layout editor

Step 2. Change the Column value to 2 and use mouse to drag the projector in the left list to the space in the right.

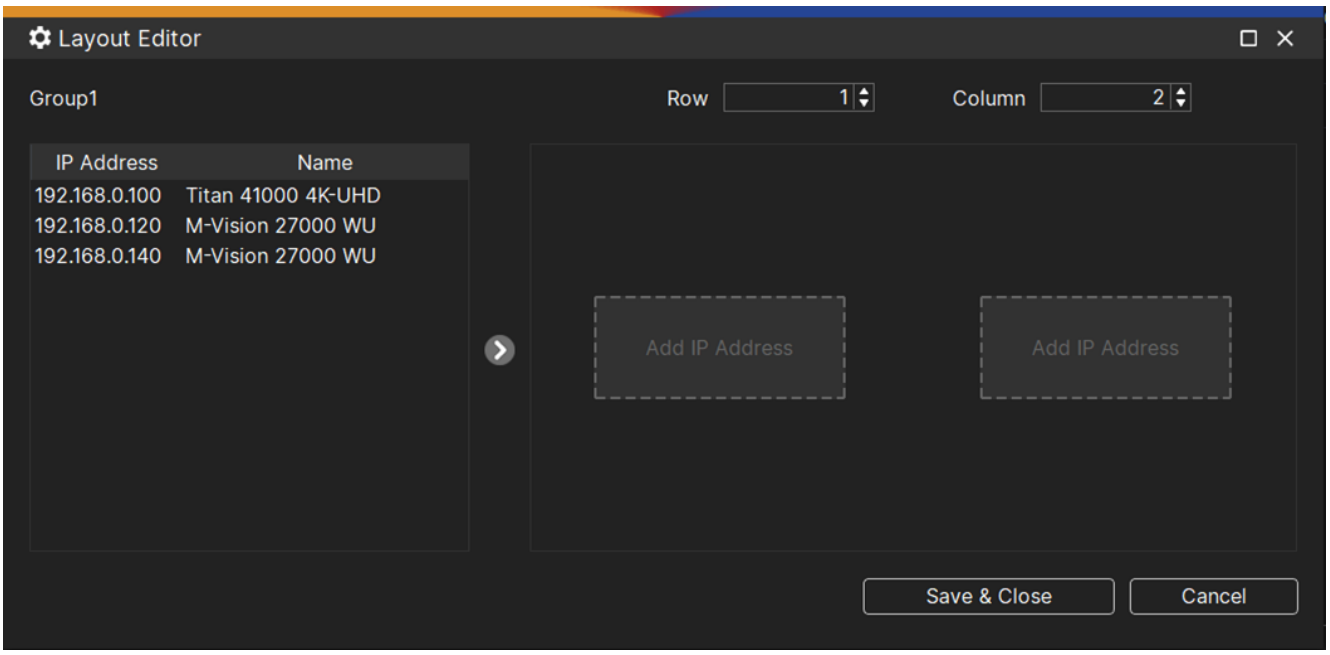


Fig 4.3.2 Drag IP to add IP Address in the right space

Step 3. Make first projector to the target space.

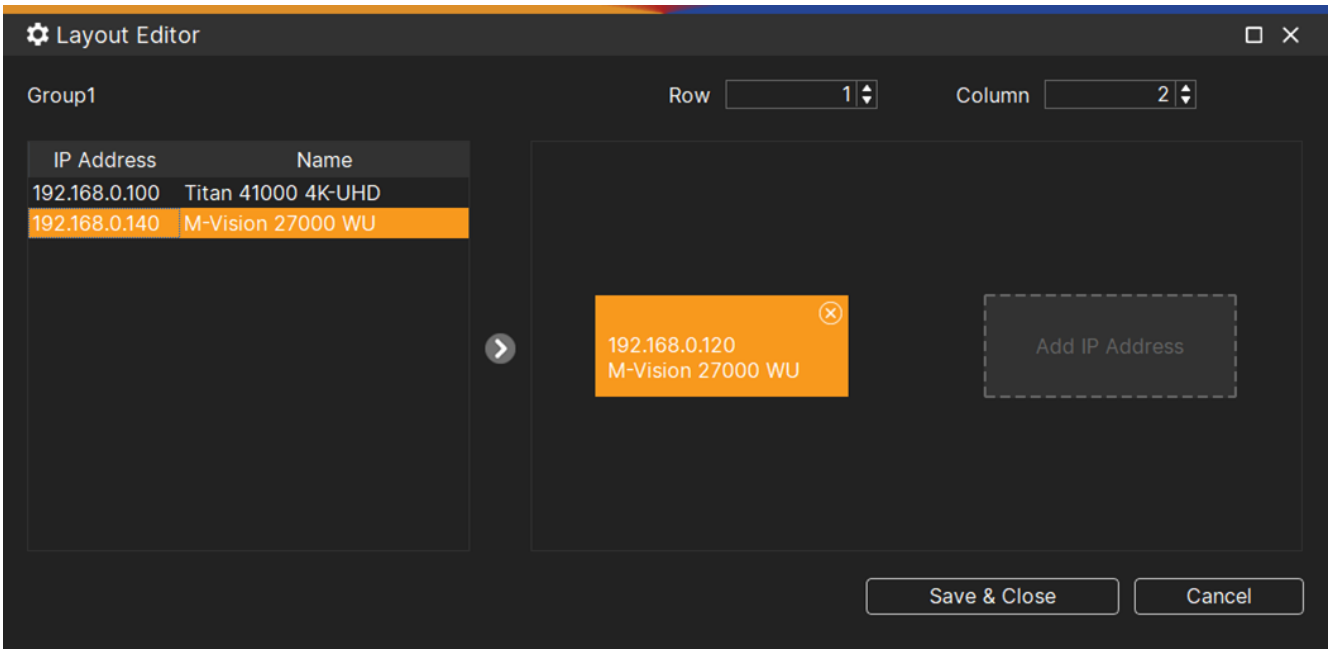


Fig 4.3.3 Drag the first IP to target location

Step 4. Make second projector to the right space.

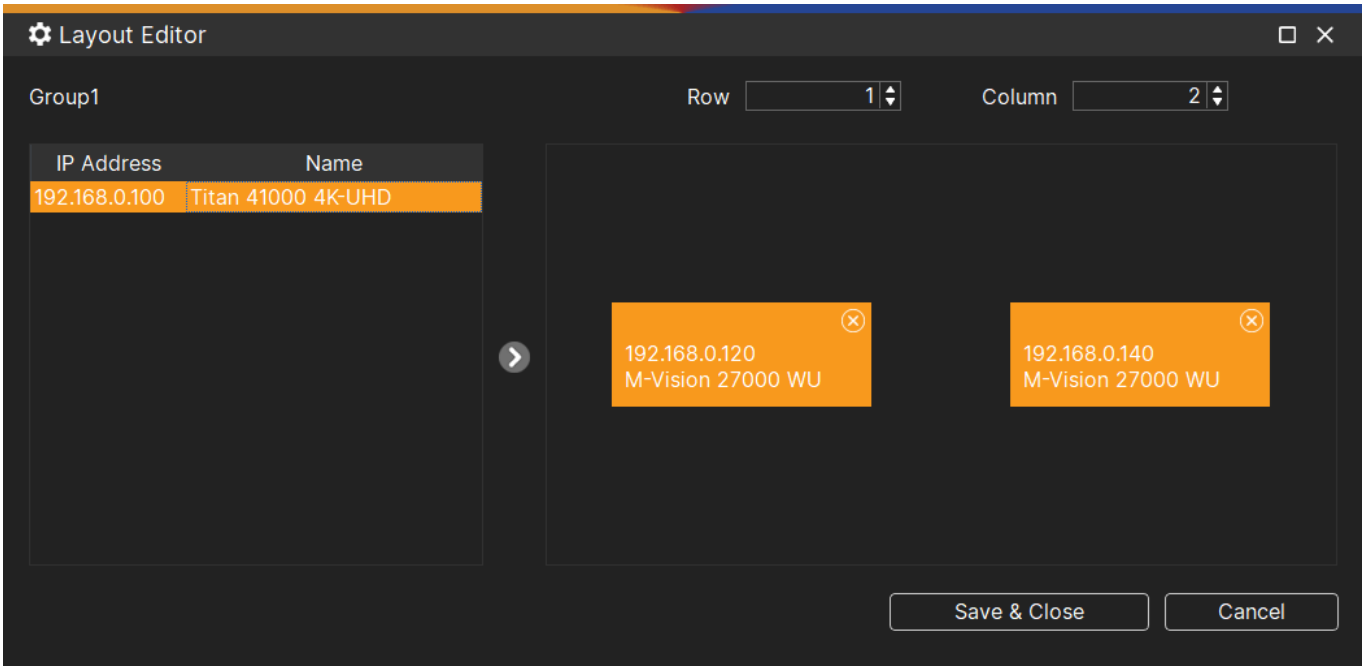


Fig 4.3.4 Finish the layout editor

Part 4. Advanced Align

Step 1. Main window → Advanced Align

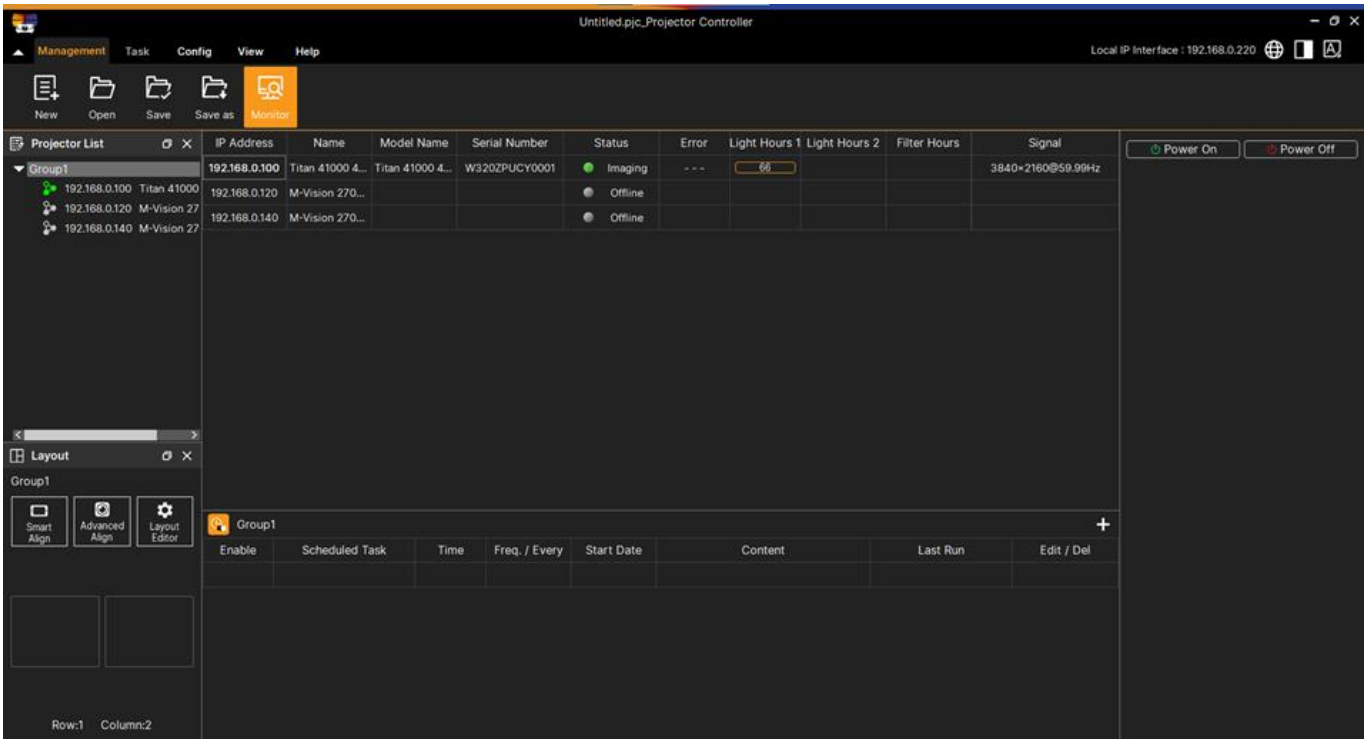


Fig 4.4.1 Select Advanced Align

Step 2. Advanced Align will show the remaining day for the trial version.

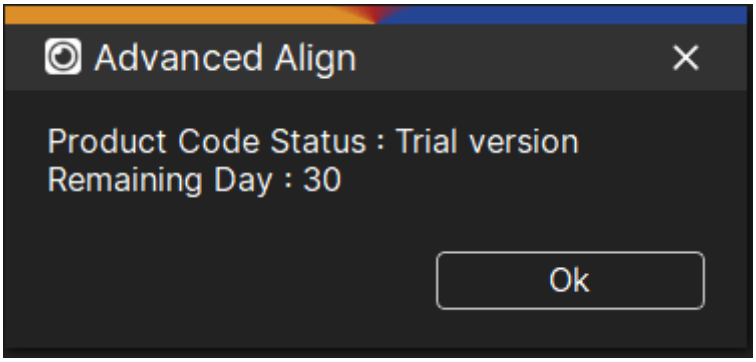


Fig 4.4.2 Remaining day

Step 3. Use your mouse in the Display list on the left, press and hold the Display you want to configure, and drag it to the space on the right.

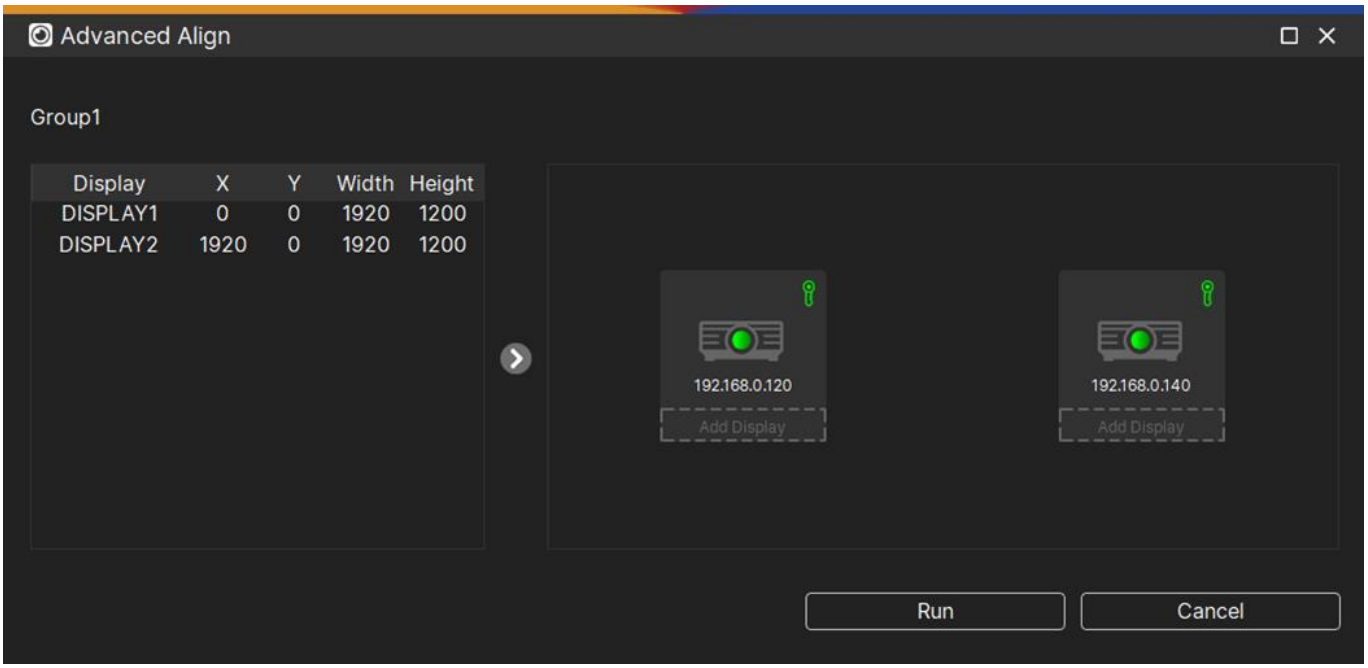


Fig 4.4.3 Drag display to the IP Layout

Step 4. Finish the display settings and click [Run]

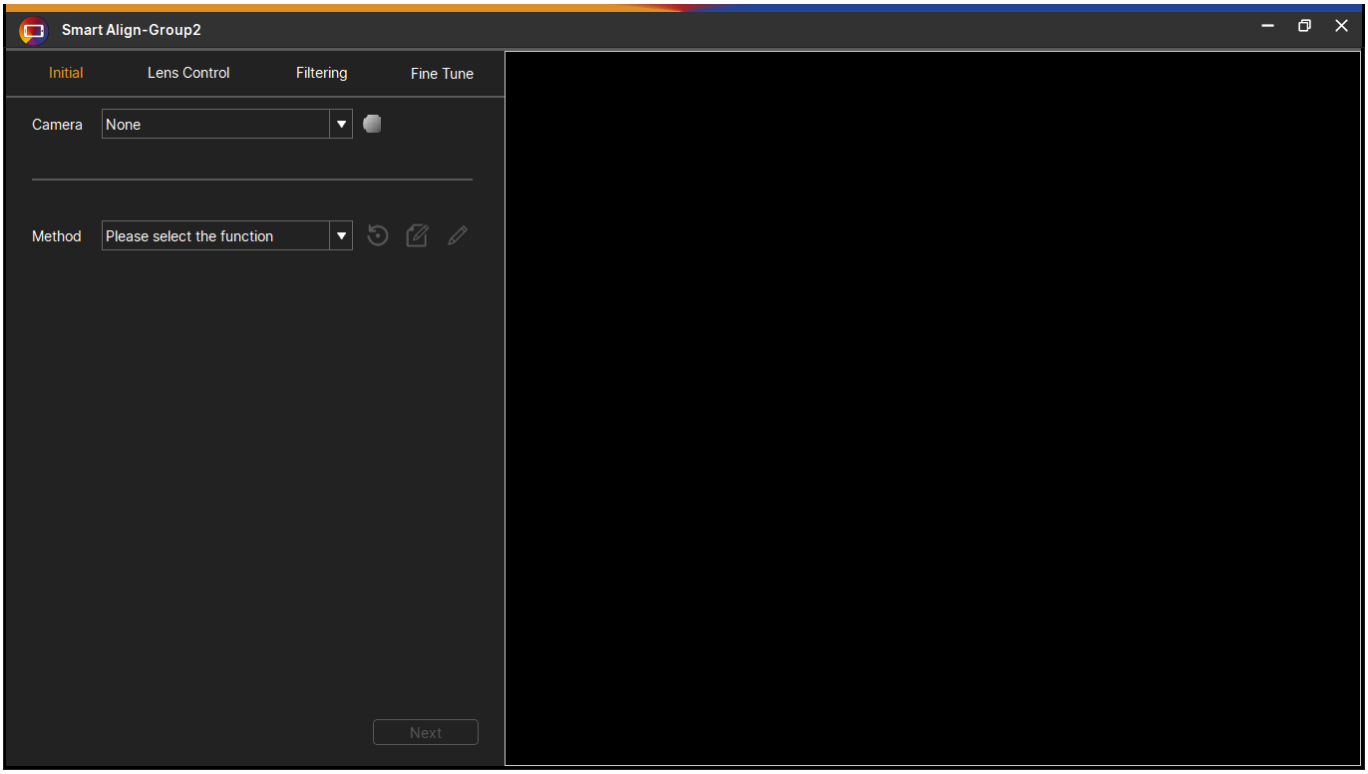


Fig 4.4.4 Smart Align

13.4 Smart Align Procedure

Part 1. PJ-Ctrl Settings

Step 1. Open the network connection to change the connection IPV4

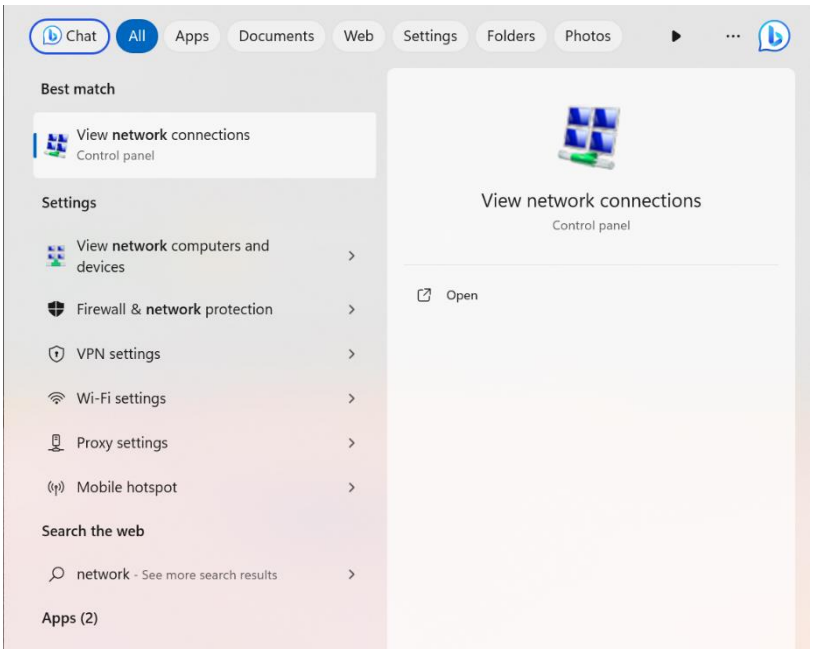


Fig 5.1 Open the start menu

Step 2. Right click the Ethernet. Here the example is Ethernet 3.

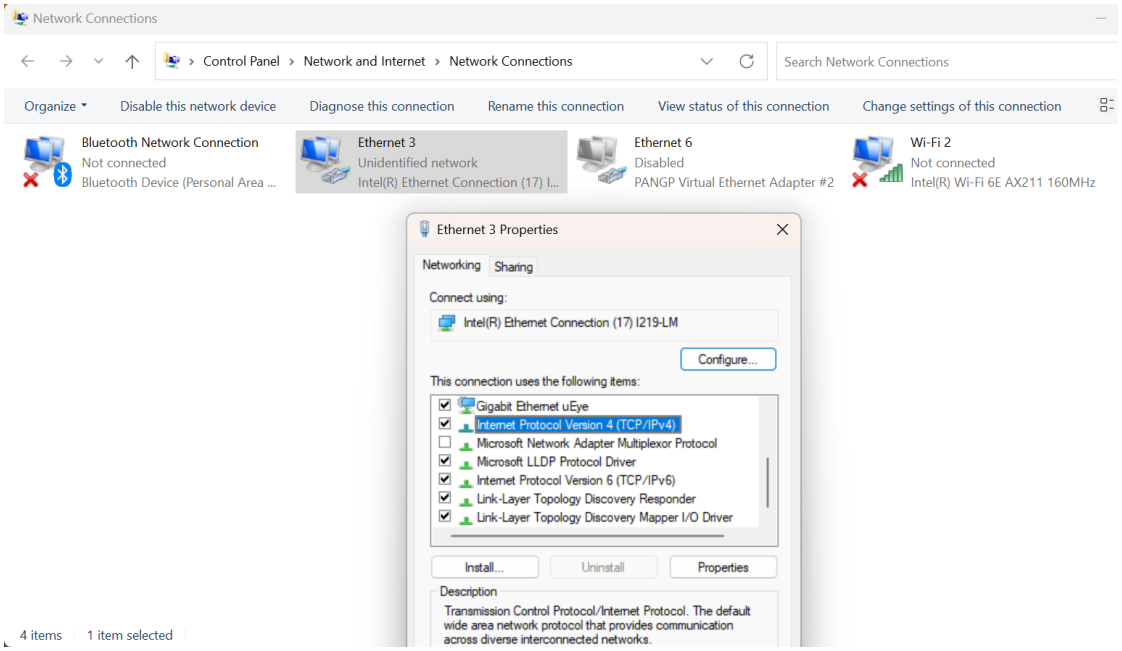


Fig 5.2 Connection Setting

Step 3. Change the IP Address by router and projectors.

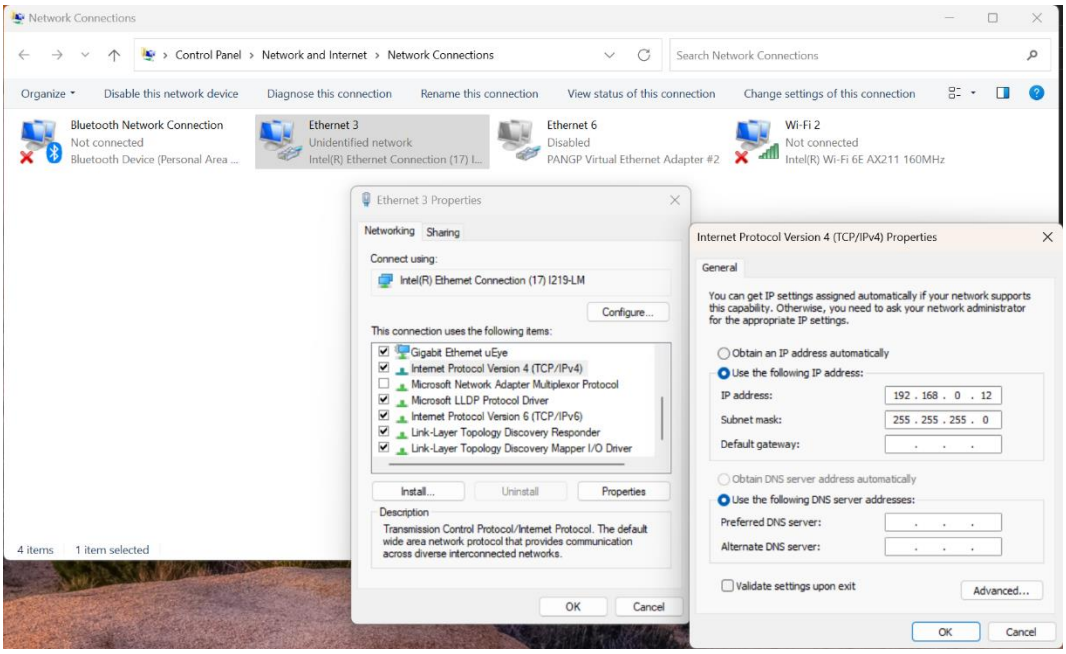


Fig 5.3 Set up IP of PC

Step 4. ① The projectors should be in the same group. ② Check the network settings, Port and Local IP Interface are correct.

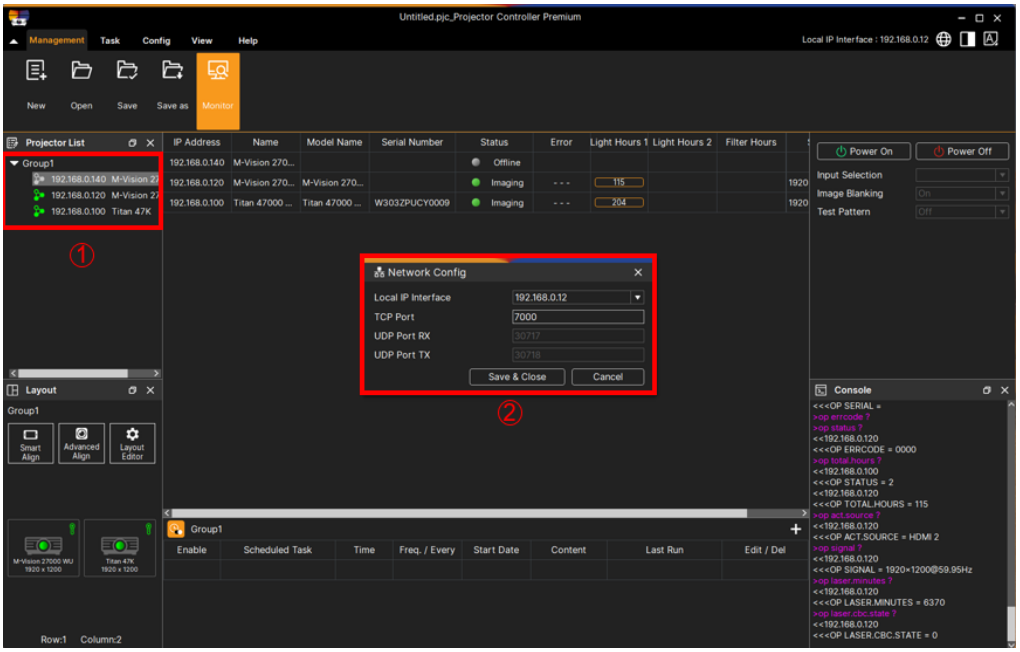


Fig 5.4 Set up projectors IP and Port

Step 5. ① Jump to help page, ② and click the license manager

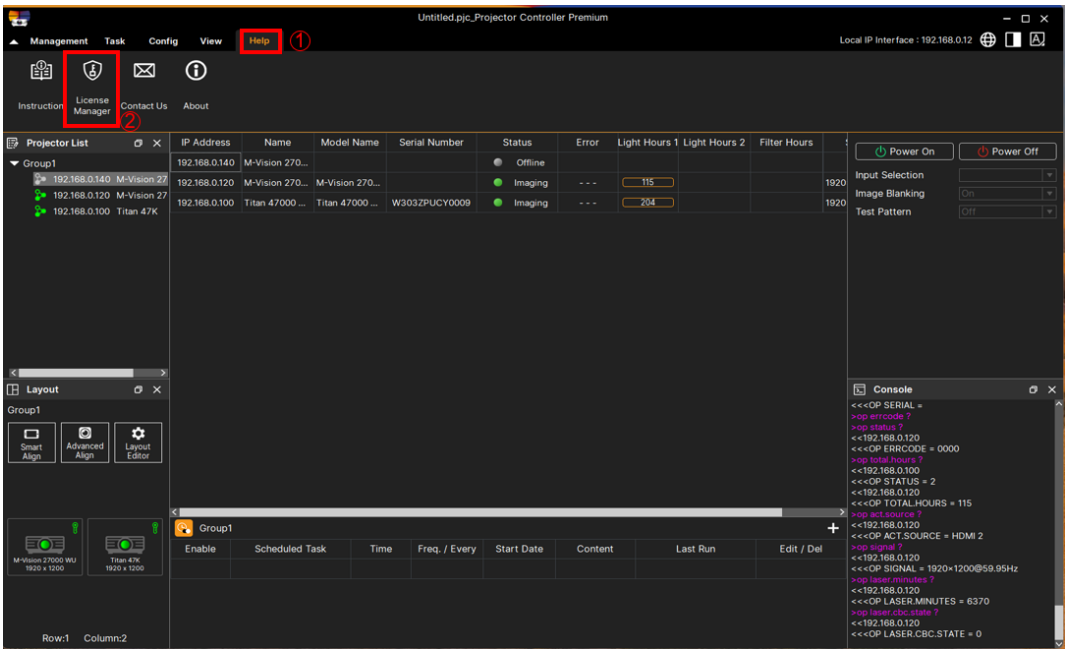


Fig 5.5 Set the license

Step 6. Click projector activation

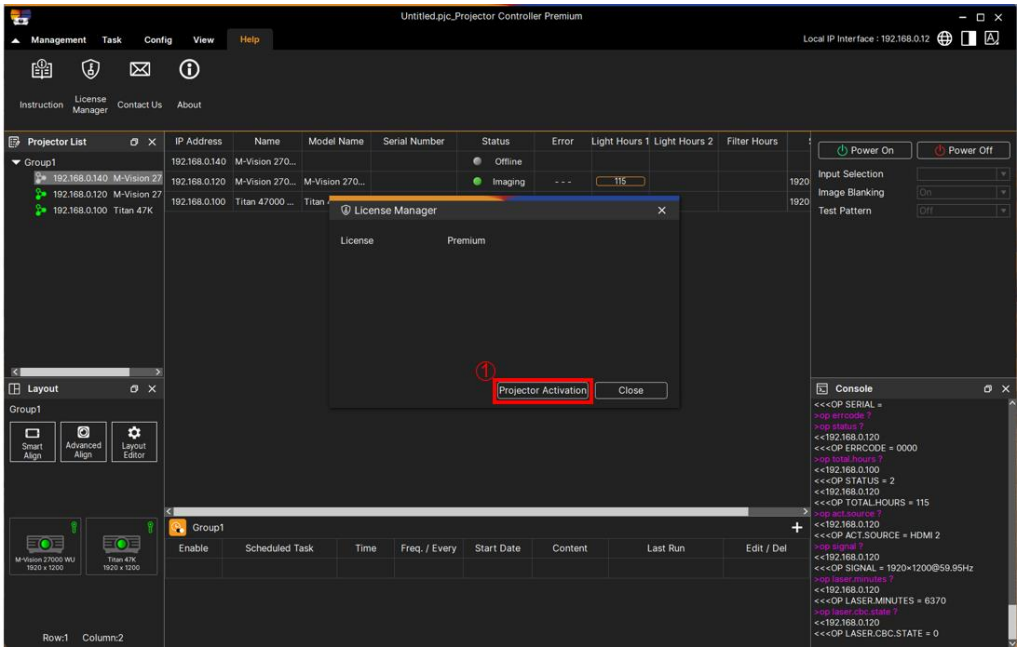


Fig 5.6 Activate

Step 7. Click activate.

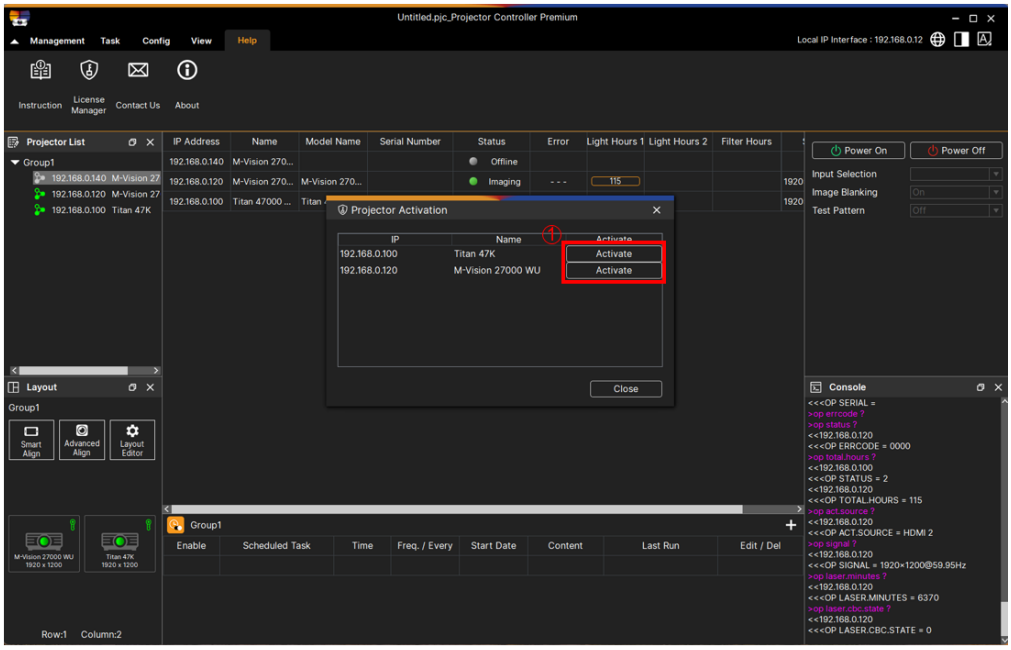


Fig 5.7 Click Activate

Step 8. Activate the projector

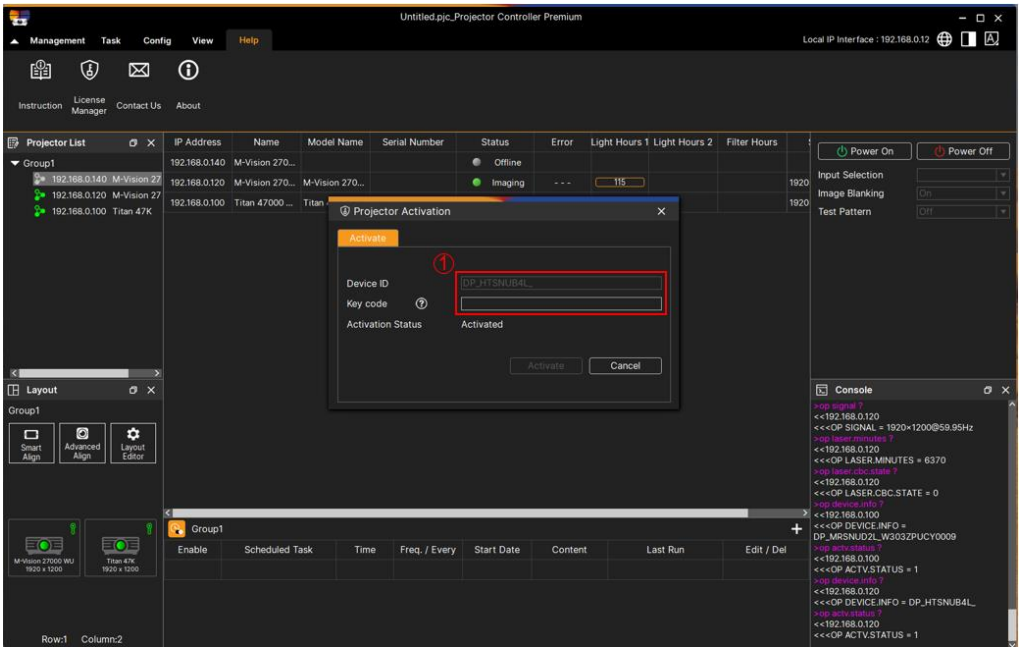


Fig 5.8 Enter the key code and activate

Step 9. ① Click layout editor. ② Drag IP to box..

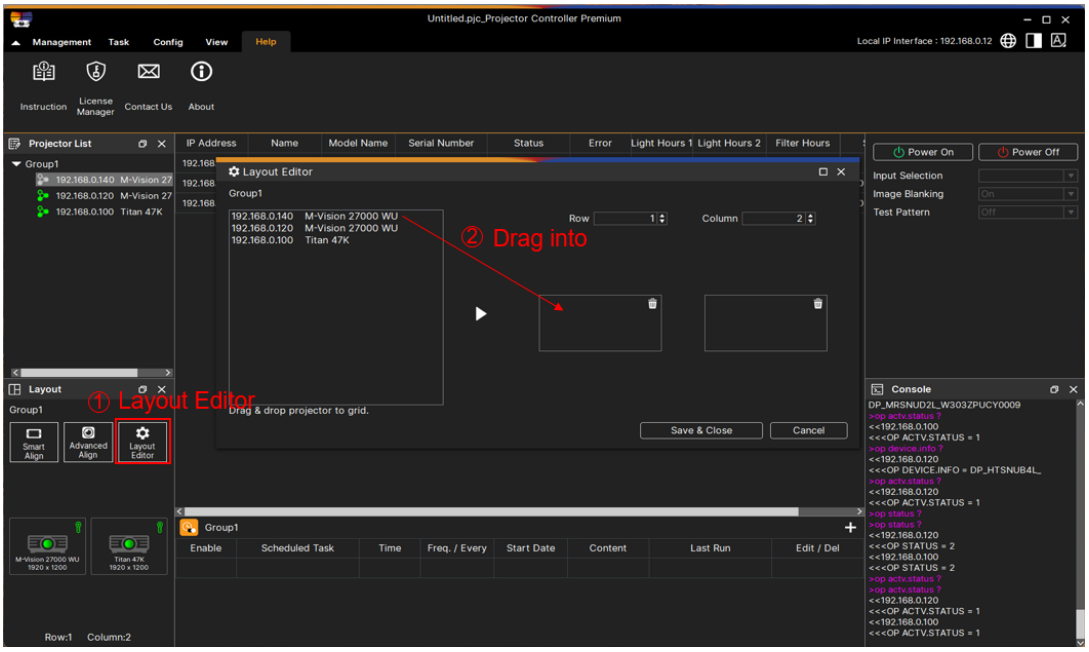


Fig 5.9 Set up IP Layout

Step 10. ① Click advanced align. ② Drag display into Layout Editor Box.③.Run the program

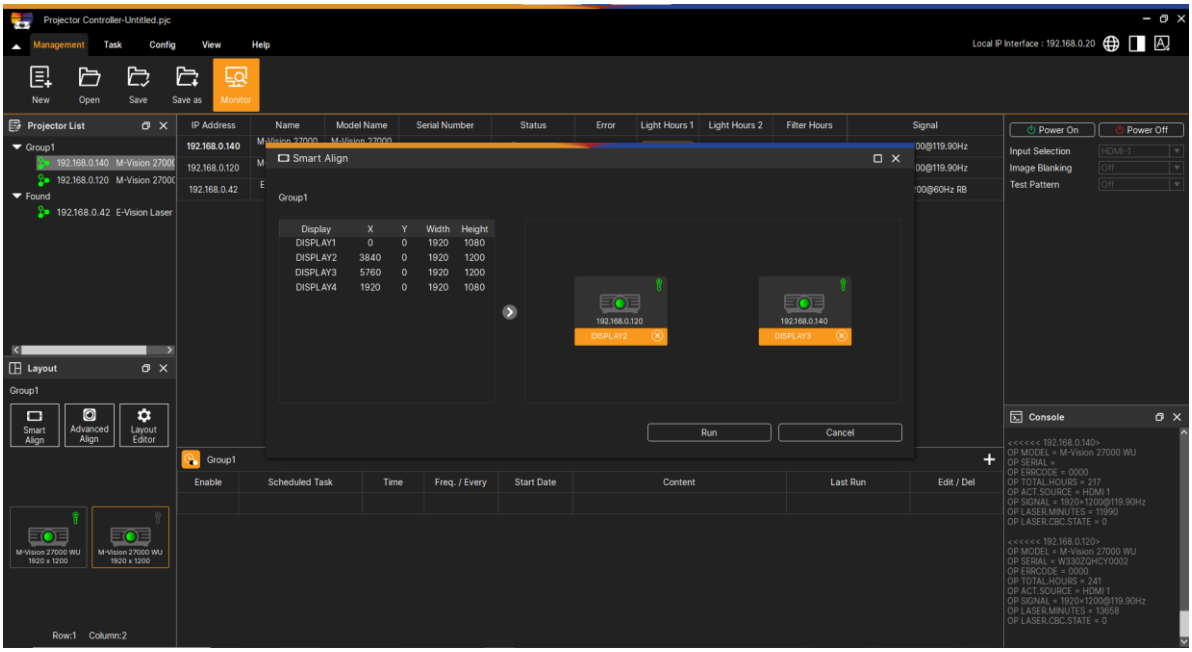
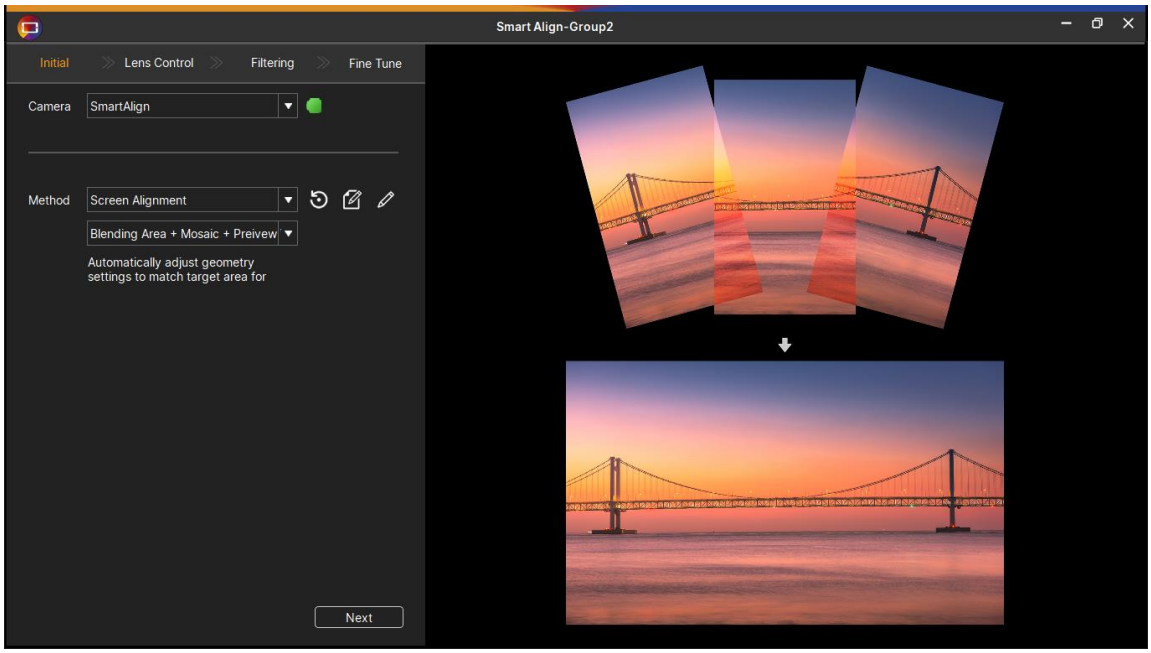


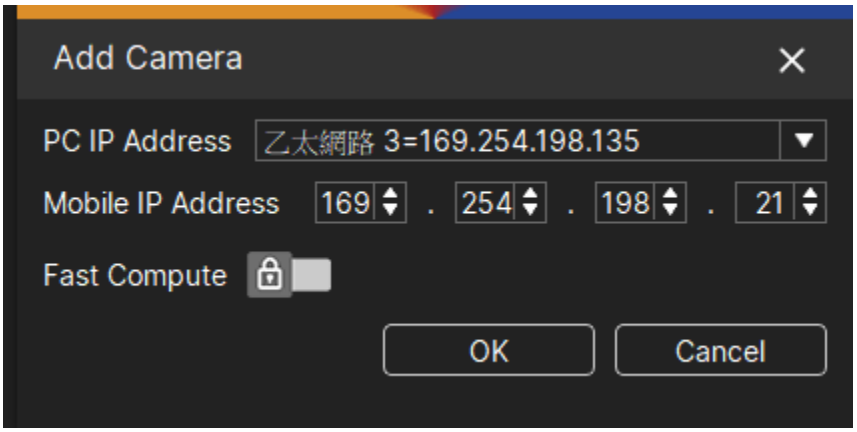
Fig 5.10 Set up Display

Part 2. Screen Alignment

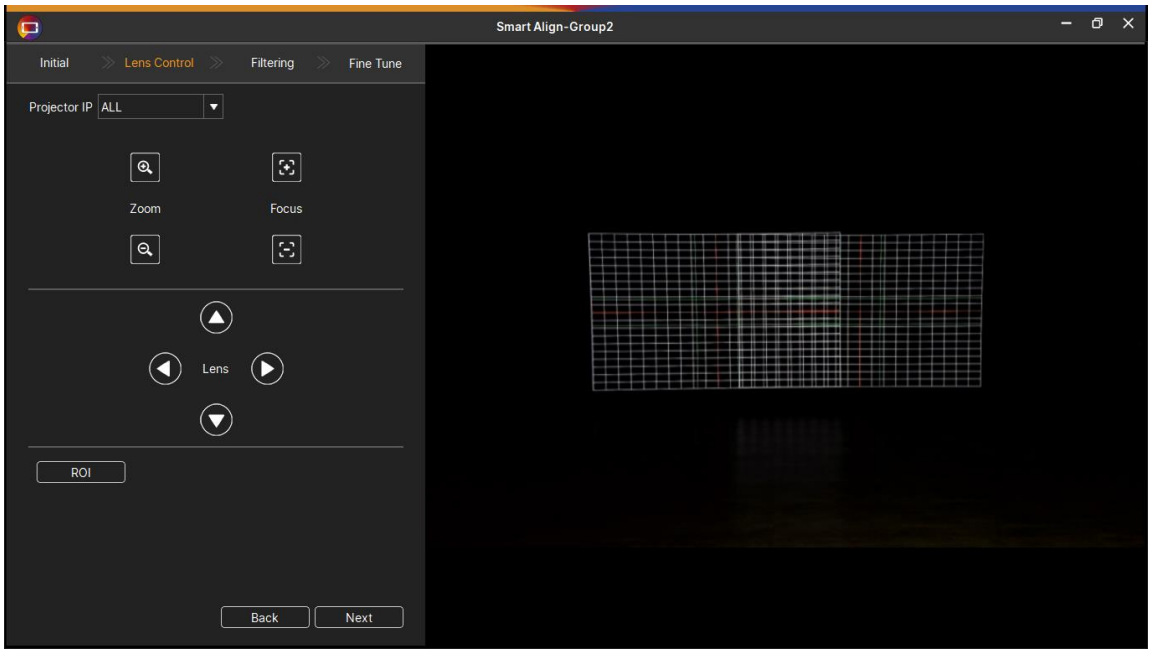
Step1 – Choose Method



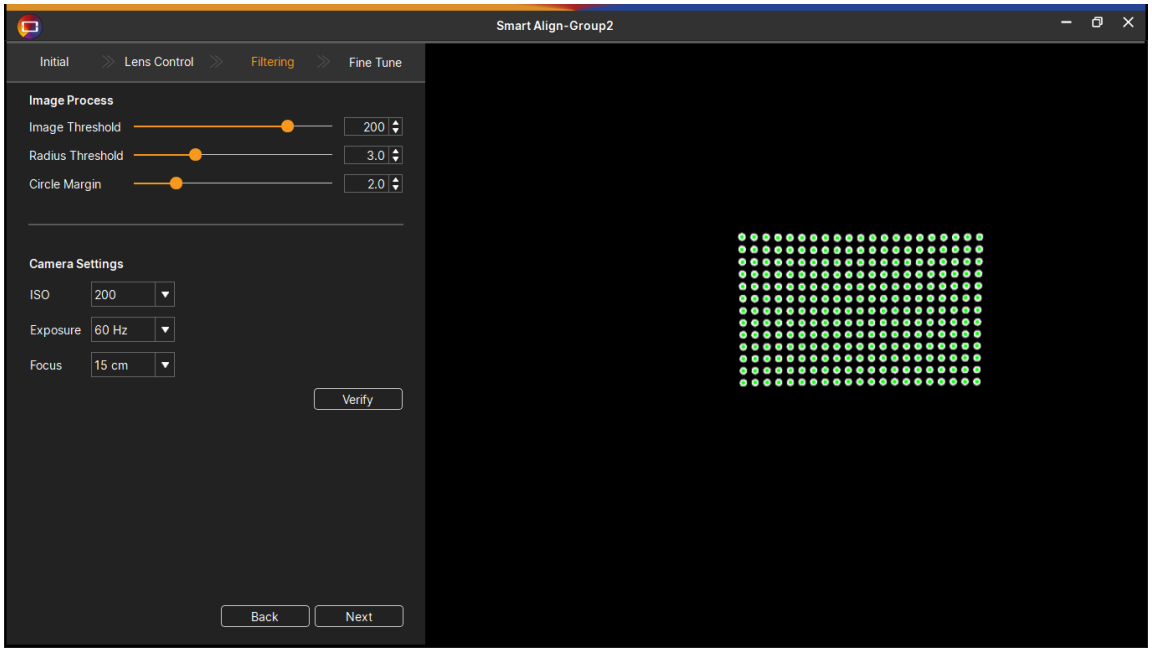
Step2 – Add Camera



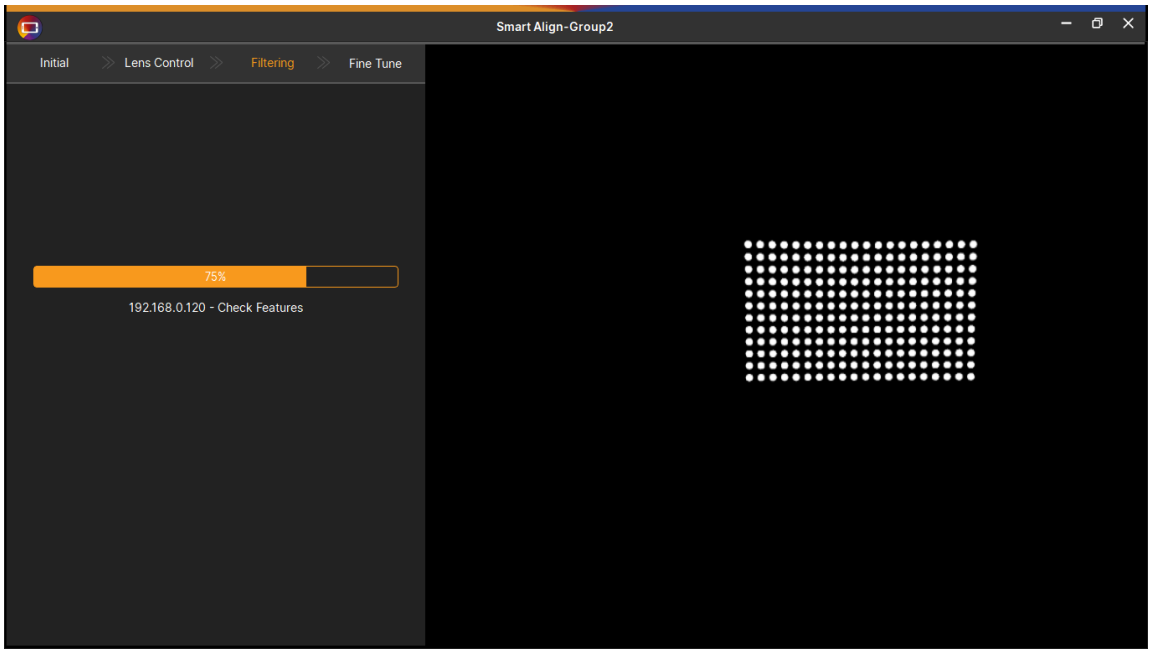
Step3 – Lens shift



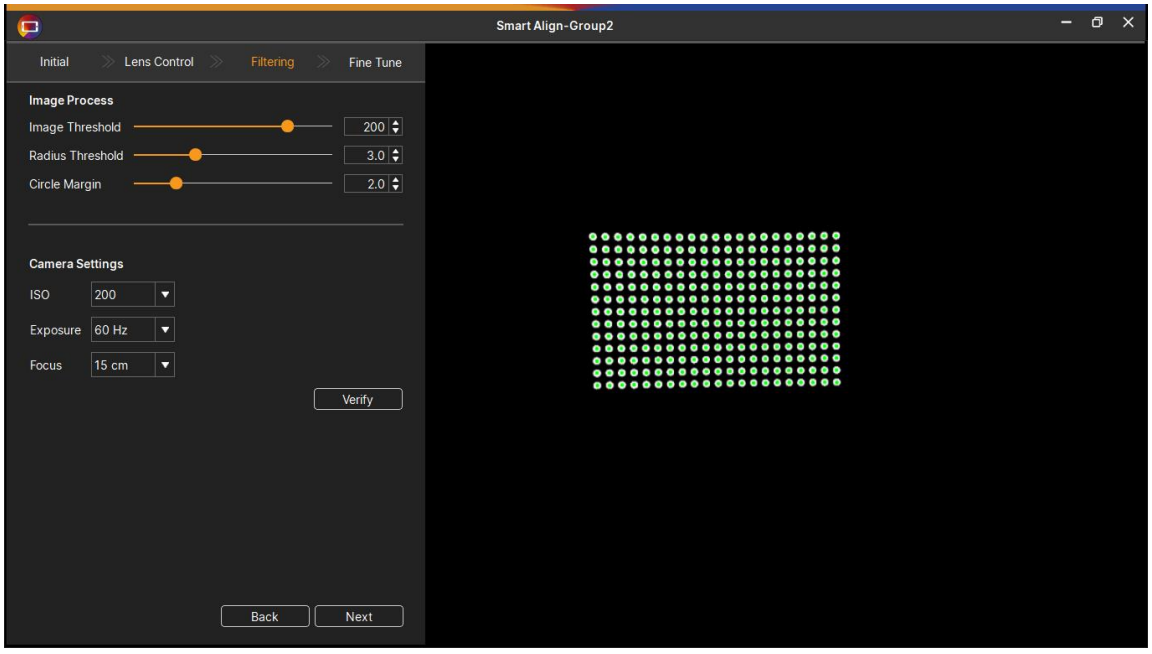
Step4 – Filter -1



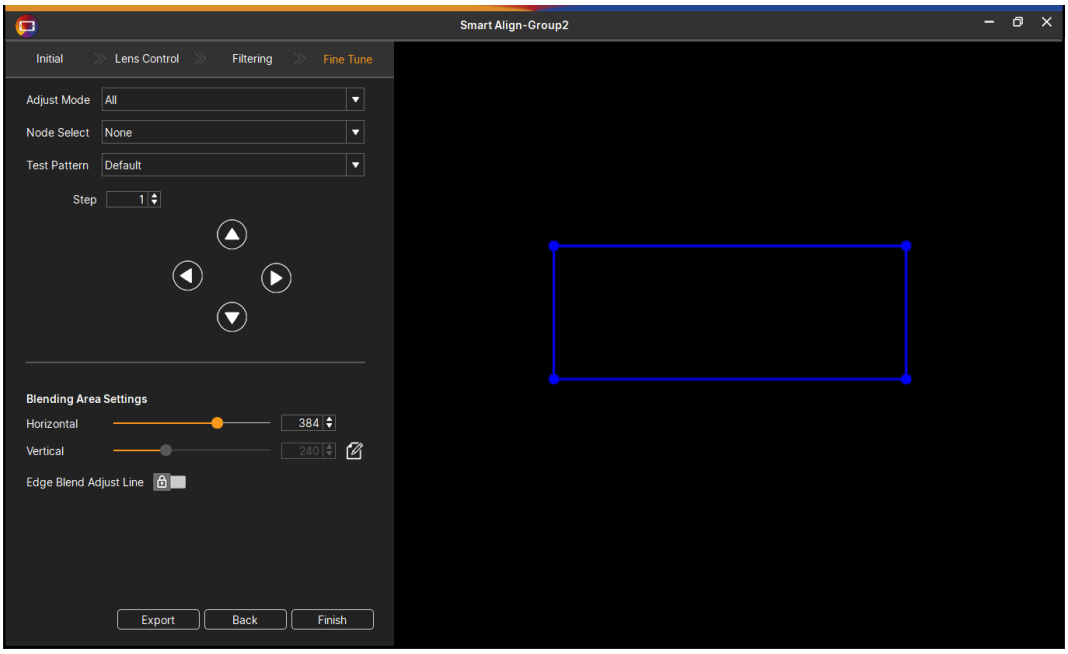
Step5 – Retrieve Feature



Step6 – Filter – 2

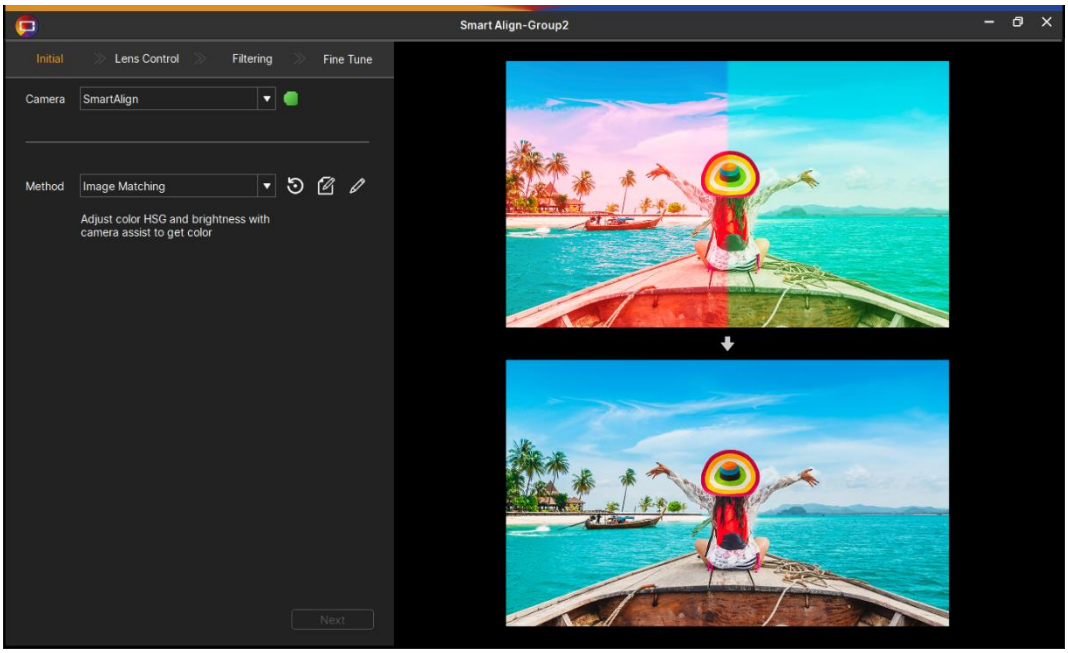


Step7 - Finish

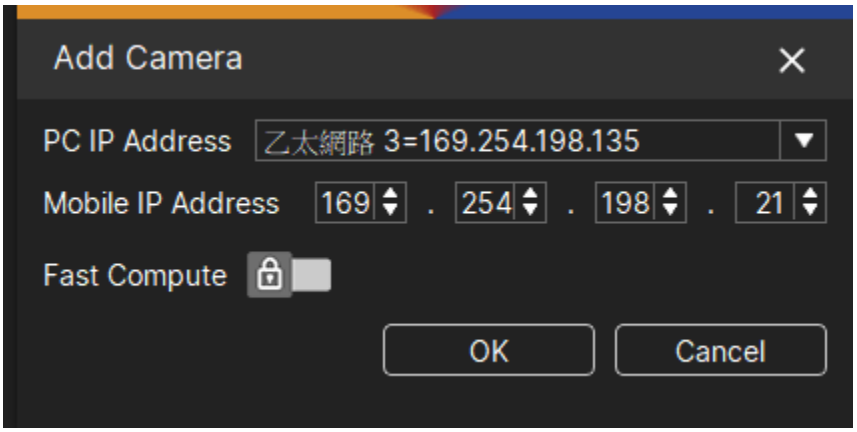


Part 3. Image Matching

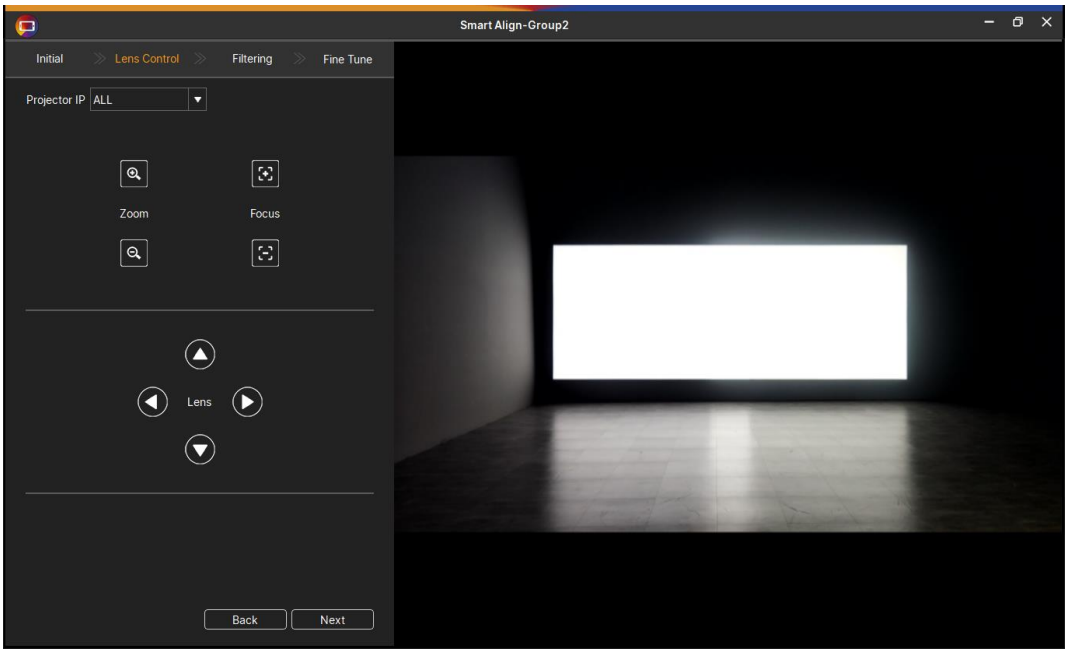
Step1 – Choose Method



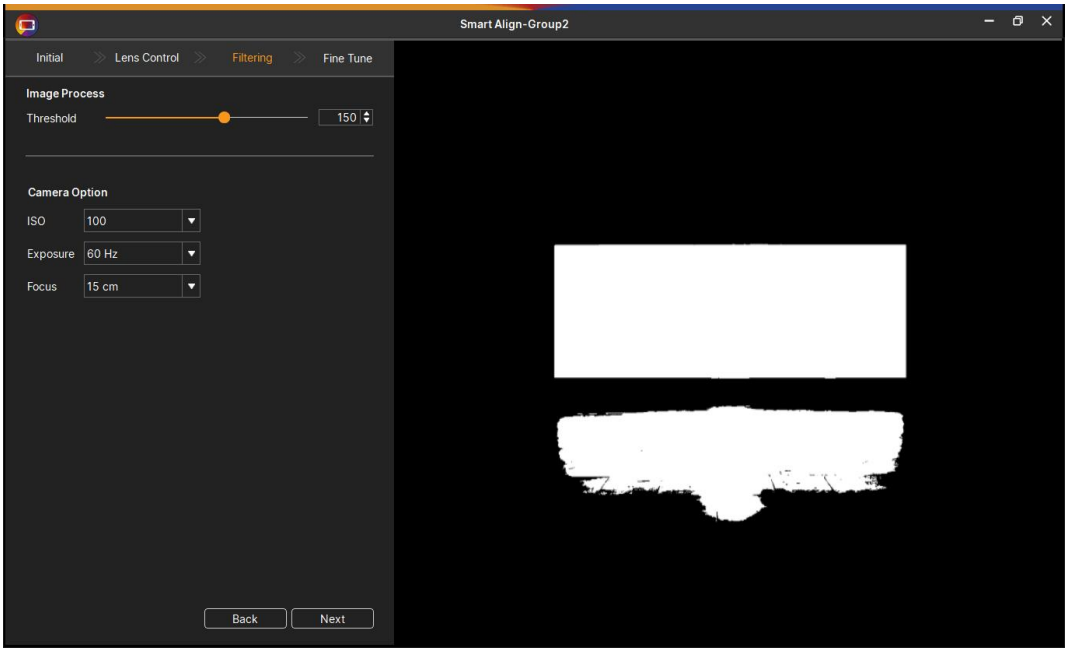
Step2 – Add Camera



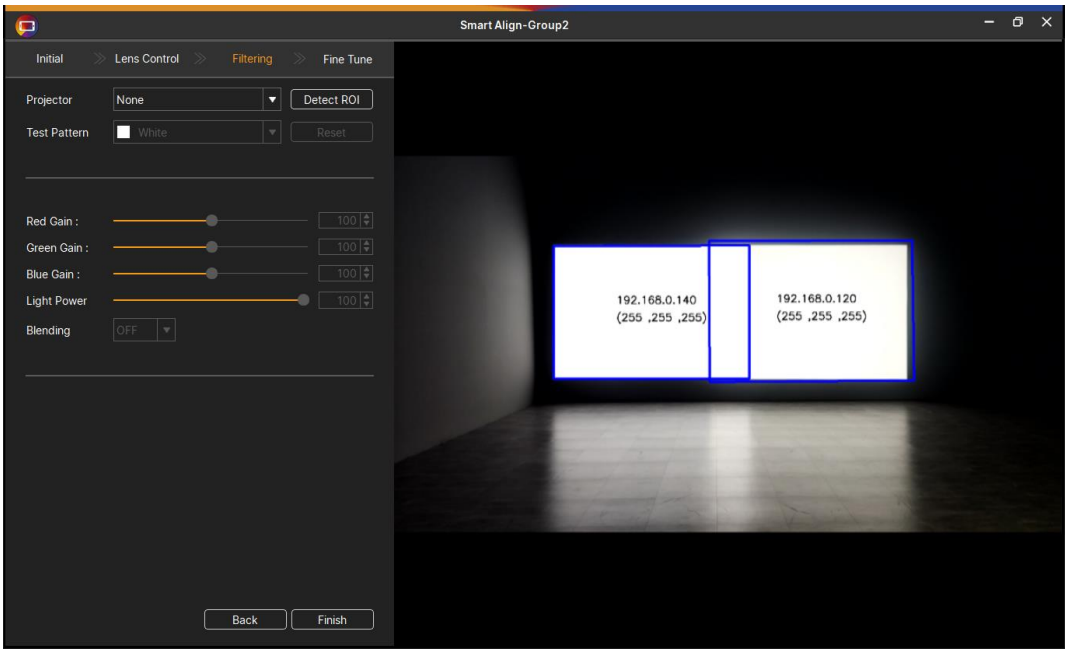
Step3 – Lens shift



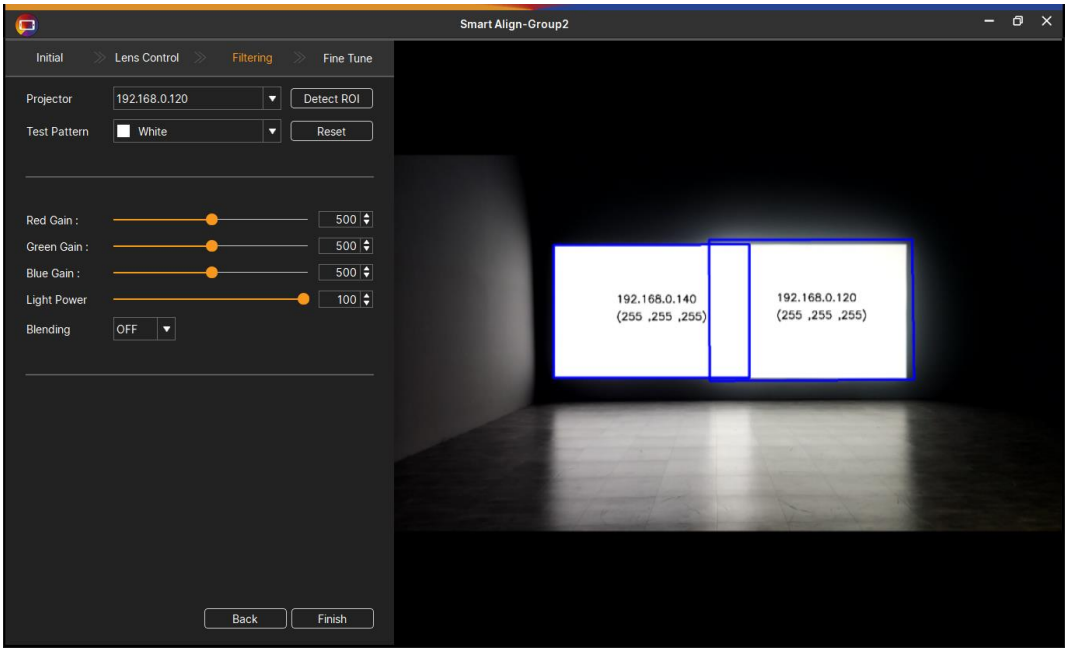
Step4 – Filter



Step5 – Colour Detection

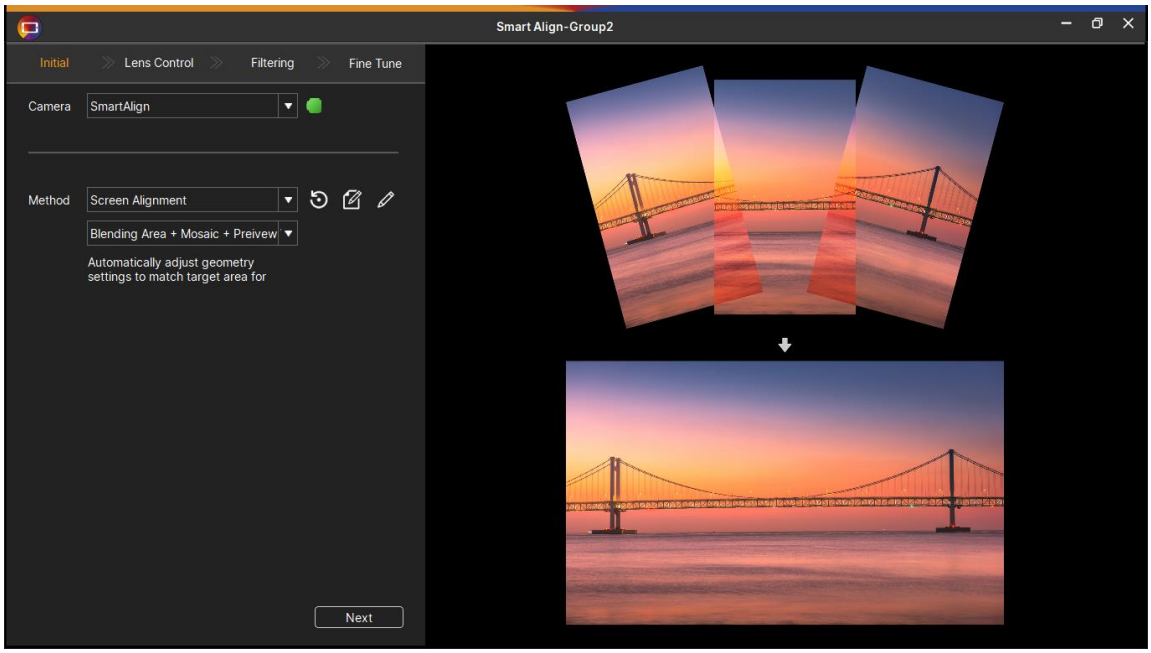


Step6 – Adjust Color

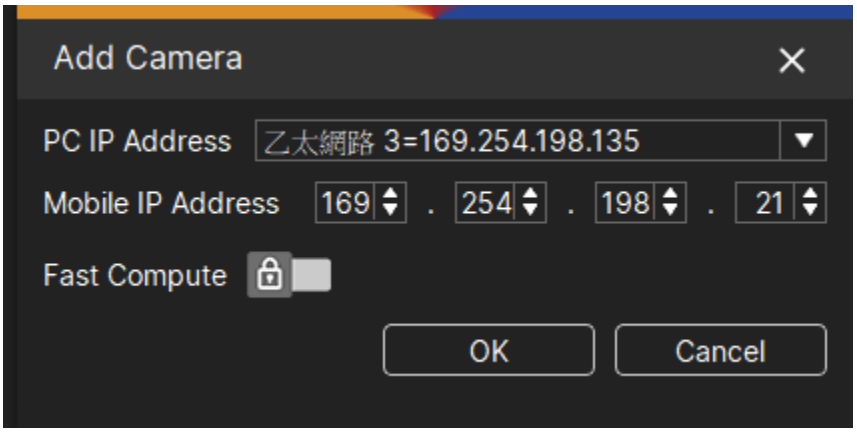


Part 4. Stacking

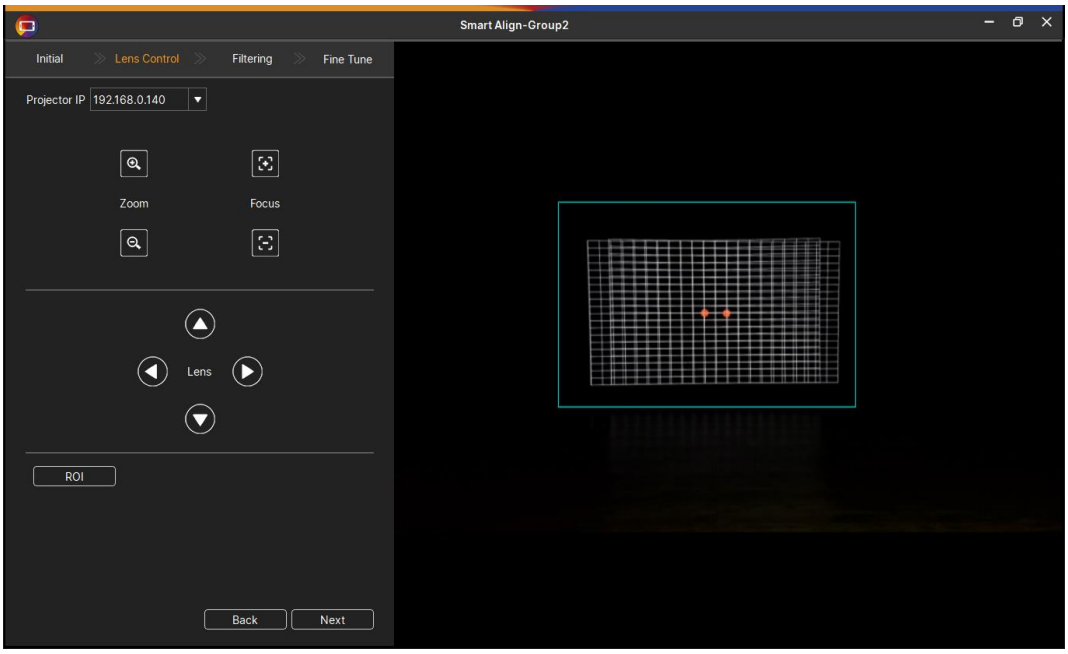
Step1 – Choose Method



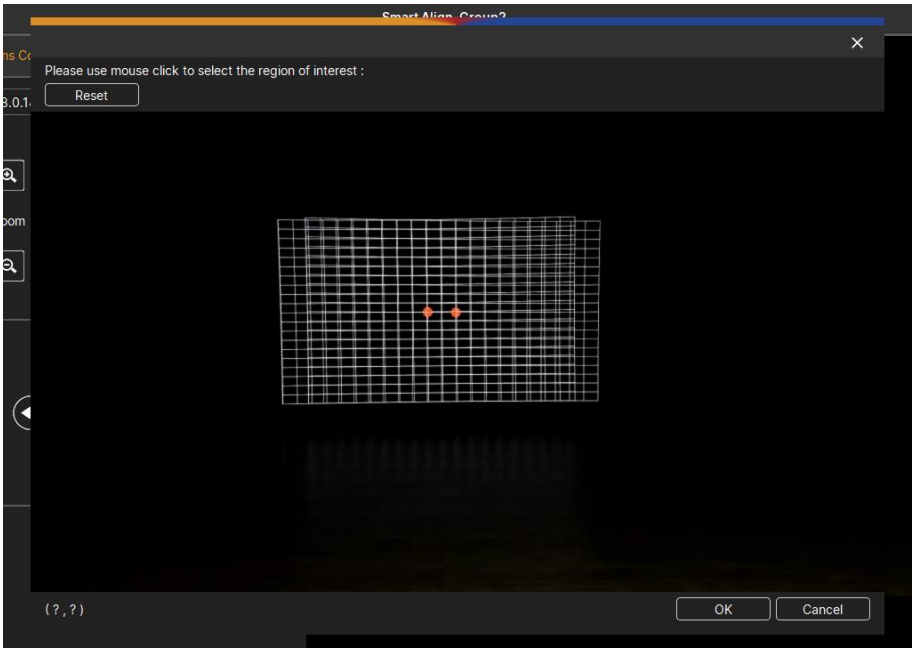
Step2 – Add Camera



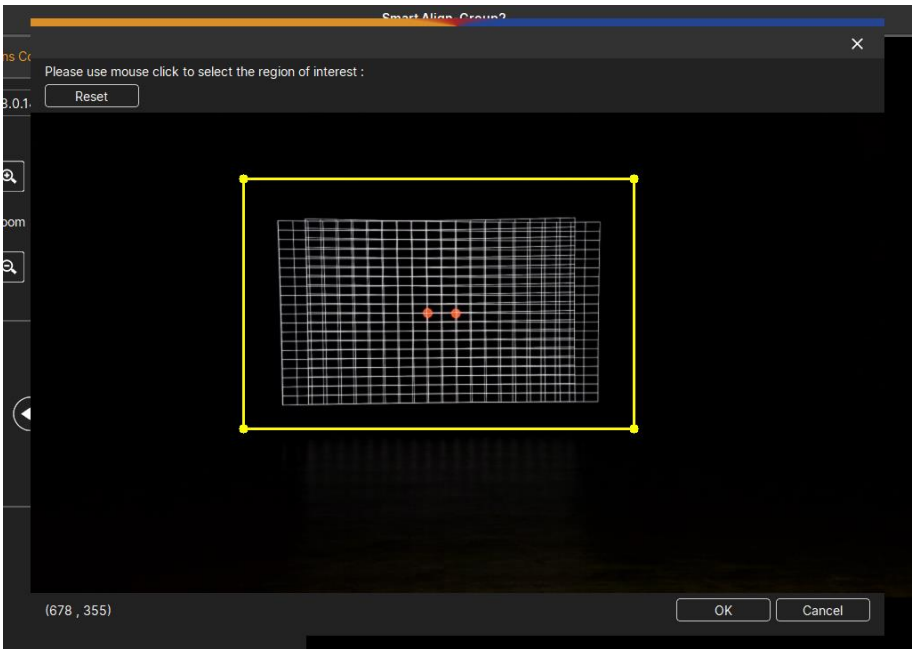
Step3 – Lens shift



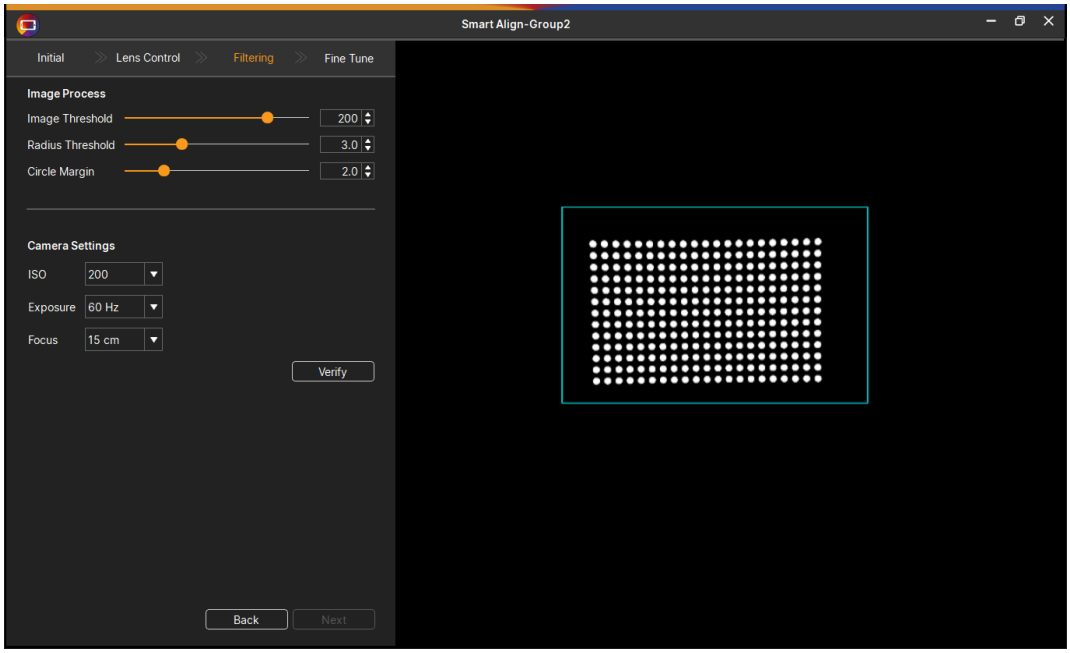
Step4 – Set ROI



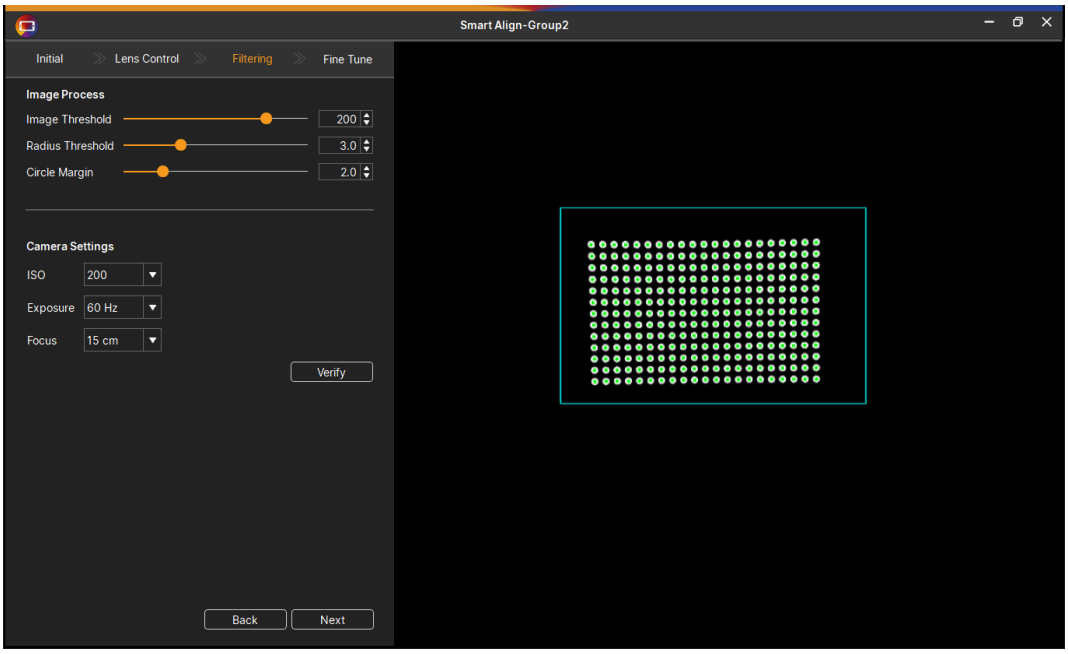
Step5 – Set ROI Region



Step6 – Filter -1



Step7 – Filter -2



Step7 - Finish