



# User Manual



## Projector Edge Blending

V.2018 IEB-22 10

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## **BEFORE YOU BEGIN**

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- Follow all instructions marked on the device during using.
- Provide proper ventilation and air circulation and do not use near water.
- It is better to keep it in a dry environment.
- Place the device on a stable surface (example cart, stand, table, etc.).
- The system should be installed indoor only. Install either on a sturdy rack or desk in a well-ventilated place.
- Make sure the rack is level and stable before extending a device from the rack if necessary.
- Make sure all equipments installed on the rack including power strips and other electrical connectors are properly grounded.
- Only use the power cord supported with the device.
- Do not use liquid or aerosol cleaners to clean the device.
- Always unplug the power to the device before cleaning.
- Unplug the power cord during lightning or after a prolonged period of non-use to avoid damage to the equipment.
- Do not stand on any device while installing the device to the rack.
- Do not attempt to maintain the device by yourself, any faults, please contact your vendor.
- Save this manual properly for future reference.

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# CHAPTER 1 OVERVIEW

## 1.1 Introduction

The IEB22 is a projector edge blending consists of multiples projectors lied together contiguously or overlapped in order to form one large screen. Use typical display technologies and mullion compensation with seamless output feature.

The IEB22 is a two-channel image processor that supports 108-P high resolution signal input and can be used to combine multi projector planes. Advanced geometry adjustment techniques are embedded in the IEB22. Users can perform edge blending and completes geometric adjustments through PC tools. Each projector can be independently color (white balance) adjusted, overlap area color corrected, and precise non-overlapping areas with dark levels raised.

Moreover, while color temperature dramatically affects the picture qualities of an LCD monitor. User can simply use the default values to restore the picture basic quality. A good understanding of the meaning of color temperature will enable better adjustments of LCD monitor picture quality.

Through the HDMI (IEB-22) interfaces you can optional select output transmission mode featuring a high resolution and low energy consumption. Typical application areas of the crescent walls include information displays, digital advertisings, meeting rooms and so on.



Figure 1-1: IEB-22

## 1.2 Packing

	IEB-22 (H) x 1
	12V/5A Power adaptor x 1
	CD Manual x 1
	HDMI cable x 4
	Micro USB cable x 1
	HS-1518EW Splitter (4K60HZ, Optional)

## 1.3 Applications

Video Walls can be used to display information for:

- Public and Emergency Services
- Intelligent Traffic Systems
- Surveillance and Security
- Telecommunications
- Power and Utilities
- Data Monitoring
- Broadcast
- Defense
- Energy

## **CHAPTER 2 FEATURES**

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- Projector edge blending can be configured as overlap adjustment through convenient computer tools.
- Projector edge blending can be configured as PIP function through convenient computer tools.
- The computer tools are user-friendly and flexible, allowing users to easily operate.
- Color temperature adjustments
- Supports USB connector for connect the IEB-22 with computer.
- Supports HDMI connector for output display identical image on local side
- HDMI output
  - Supports 2 HDMI connector for input and 2 HDMI connectors for HDMI output interfaces
- Supports HDMI interface or S/PDIF interface for audio output.
- Supports HDMI Remote Extender (Optional)
- Supports resolution up to 1080P for each Crescent Video Wall
- 12V power adaptor
- 1U rack design.

## CHAPTER 3 SPECIFICATIONS

---

<b>Hardware</b>	
Input Connector	HDMI Type A Female: - IEB-22 (H) x 2
Output Connector	HDMI Type A Female (Local Video Output): - IEB-22 (H) x 2
USB Connector	Micro USB type x 1
Audio port	Digital Optical Toslink x 1 RCA Digital Audio x 1
Power	DC/12V
LED Indicator	Device/Signal Status x 8
Housing	Metal
Mounting	Rack mountable (1U-rack-mount kit)
Weight	IEB-22 (H): 2.85Kg
Dimensions (LxWxH)	IEB-22 (H): 444x222x44 mm
<b>Multimedia</b>	
Max. Resolution	1080P for each TV Wall
<b>Control Information</b>	
HDMI Cable Distance	Local: 10 meters (Max.) / Remote: 10 meters (Max.)

## CHAPTER 4 INSTALLATION

---

IEB-22 has a black metallic housing. It can be placed on a sturdy desk directly or installed on a bracket. You can also use the rubber feet pasted on the bottom of the chassis to protect your device when you want to place the device on a working desk.



**Figure 4-1: IEB-22 with 1U Rack-Mount Bracket**

Attach the rubber feet to the bottom of the device, Place the device on a sturdy, level surface that can support the weight.



**Figure 4-2: Place the Device on a Sturdy Surface**

## CHAPTER 5 FRONT/REAR PANELS

### 5.1 Front Panel

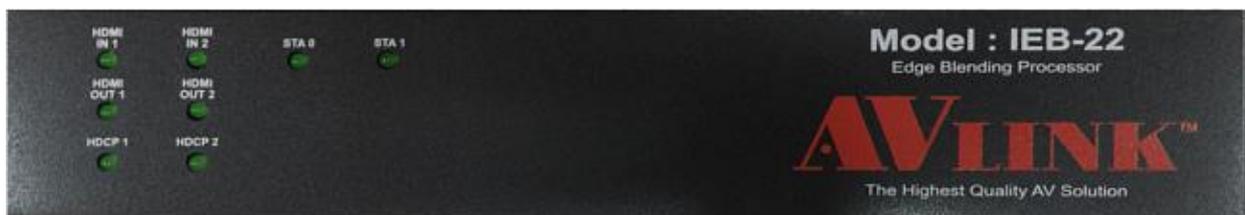


Figure 5-1: IEB-22 Front Panel

The IEB-22 support 8 clear LED indicators designed for device status.

- **HDMI IN1/IN2 LED indicator:** Specified for HDMI cable plug into input port status, if the LED is extinguished, it's mean that HDMI cable plugged in is not good enough.
- **HDMI OUT1/OUT2 indicator:** Specified for HDMI cable plug into output port status, if the LED is extinguished, it's mean that HDMI cable plugged in is not good enough.
- **HDCP1/HDCP2 indicator:** Specified for the HDCP function is enable or disable. If the LED is extinguished, it's mean that the HDCP function is disabled, if the LED is blinks, it's mean that the HDCP execution error.
- **STA0 indicator:** Specified for the IEB-22 connect with computer. Once the IEB-22 connecting with computer and the PC tool is open, the LED will be bright.
- **STA1 indicator:** Specified for the firmware upgrade. If the LED is blinks, it's mean that the firmware is upgrading, if the LED is extinguished, it's mean that the firmware is upgraded finish.

## 5.2 Rear Panel



Figure 5-2: IEB-22 Rear Panel

IEB-22 is support up to 2 output jacks on the rear panel, each female terminal separately form the output jacks. IEB-22 terminal channels numbered as output HDMI1/2 are for signals output. The input interface with “**INPUT HDMI1/2**” jack supplies you to connect to different equipment including CD/DVD player, Blu-ray player, PS3 and so on.

- **Power port:** The Power Port is applicable for DC/12V, connected to the outlet of power source. Refer to [6.5 Power Connection](#).
- **HDMI Out (OUTPUT HDMI1/2) jack:** This is connected to the A/V, HDTVs, Projectors and so on.
- **HDMI In (INPUT HDMI1/2) jack:** This is connected to the CD/DVD player, Blu-ray player, PS3, Video Camera, STB and so on.
- **USB jack:** This is connected to the computer.
- **Output Audio:** This is connected to the speaker.

## 5.3 Connectors

### 5.3.1 HDMI

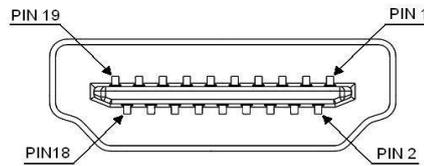


Figure 5-3: HDMI Connector

HDMI Type A Connector host assignment:

Pin #	Signal	Pin #	Signal
1	TMDS Data 2+	11	TMDS Clock Shield
2	TMDS Data 2 Shield	12	TMDS Clock -
3	TMDS Data 2-	13	NC
4	TMDS Data 1+	14	NC
5	TMDS Data 1 Shield	15	DDC SCL
6	TMDS Data 1-	16	DDC SDA
7	TMDS Data 0+	17	DDC/CEC Ground
8	TMDS Data 0 Shield	18	+5V Power
9	TMDS Data 0-	19	Hot Plug Detect
10	TMDS Clock+		

### 5.3.2 Micro USB

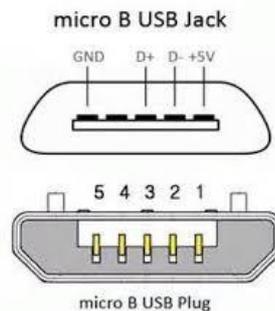


Figure 5-4: Micro USB Connector

Micro USB Connector host assignment:

Pin #	Signal	Pin #	Signal
1	VCC	4	ID
2	Data -	5	GND
3	Data +	6	SHELL

## CHAPTER 6 CONNECTIONS

Before making the connections, make sure all devices are powered off. Refer to the illustrated connections below and also to the user manual of the device you are connecting to the IEB-22.

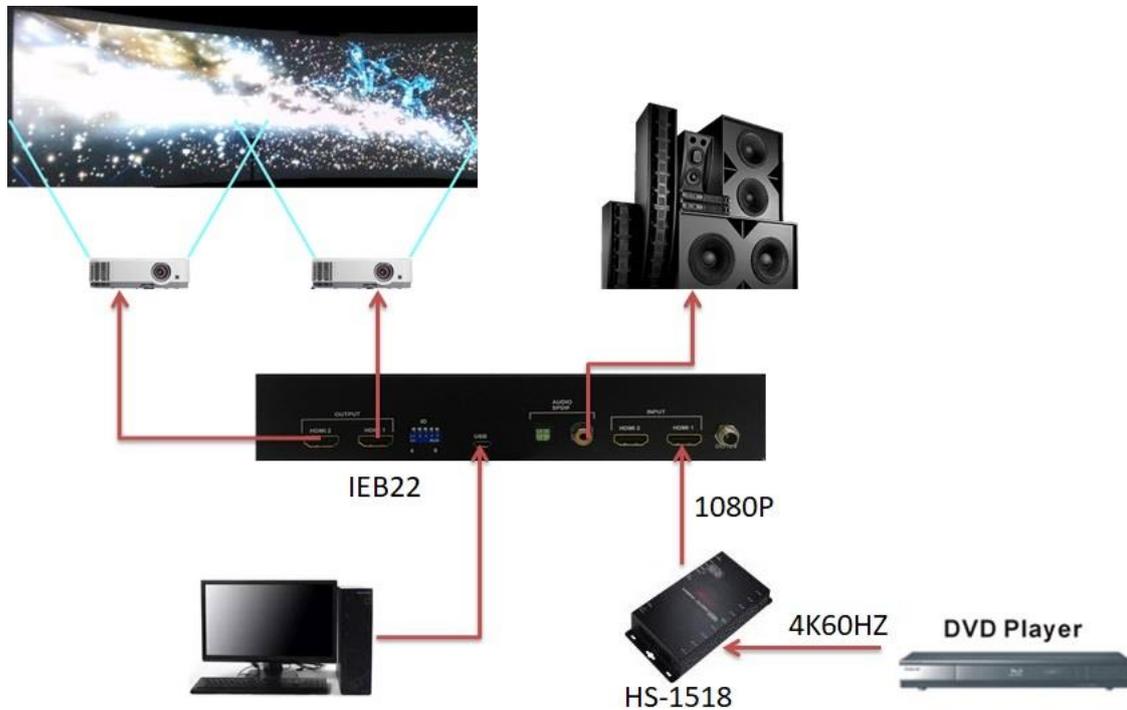


Figure 6-1: IEB-22 Connections

### 6.1 Input Connection

Use the HDMI connecting cable to connect the Input serial jack (INPUT HDMI1/2) to the HDMI jack of the Blu-ray/DVD player/graphics workstations/PC.



Figure 6-2: Input Connection-HDMI

## 6.2 Output Connection

Use the HDMI cable to connect the output HDMI1/2 jacks on the rear panel to the remote input jack of the projector, video recorder, display, HD TV or multiplexer directly.

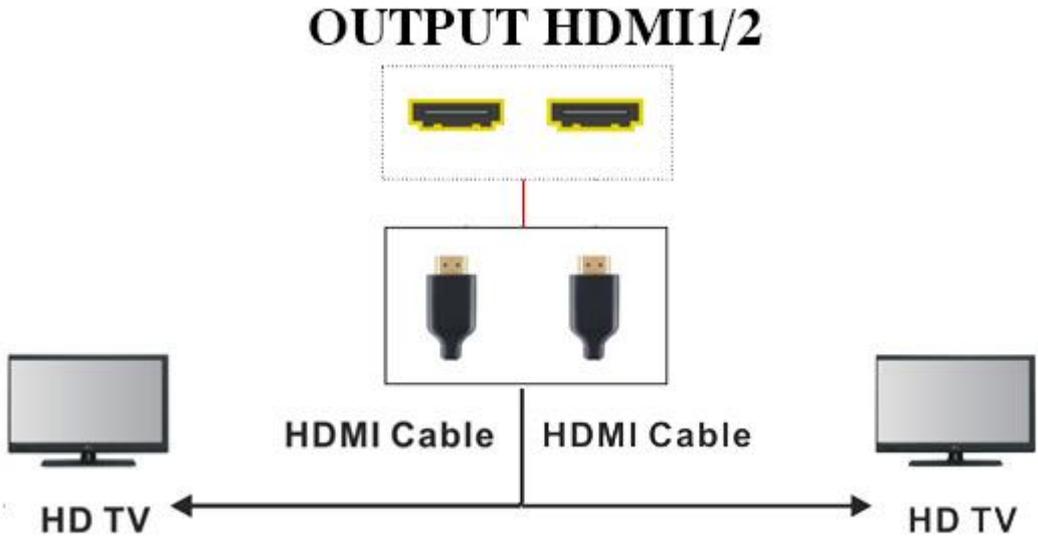


Figure 6-3: Output Connection-HDMI

## 6.3 Micro USB Connection

The IEB-22 was provided Micro USB communication ports. Use Micro USB cable to connect the computer to set up crescent walls.



Figure 6-4: Micro USB Connection

## 6.4 Audio Output Connection

Use the audio cable of male to male to connect the speaker.



Figure 6-5: Audio Output Connection

## 6.5 Power Connection

Use the included 12V DC adaptor to connect the power source from the power port on the rear panel of IEB-22 to the outlet.



Figure 6-6: Power Connection

## CHAPTER 7 TROUBLESHOOTING

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1. After the power plugged in, there is no screen display?

**Answer:**

- 1) Please confirm the power cord is indeed inserted.
- 2) Please confirmed the Source and Sink are really connected.
- 3) If you have plug three times and still no screen display, please return your device to local supplier or factory.

2. The IN and OUT indicator LED of the front panel does not light?

**Answer:** Please confirm the Source and Sink are connected properly, if you continuous plug HDMI cable and the indicator LED still does not light, please return your device to local supplier or factory.

3. The “No found FTDI device!!!” message has been displayed while opening the AVLINK Graphics Tool?

**Answer:**

- 1) Please unplug the USB cable and turn off the AVLINK Graphics Tool.
- 2) Wait a second later, connected the device with PC though the USB cable again.
- 3) Wait five seconds later, open the AVLINK Graphics Tool, if still get the same error message, please return your device to local supplier or factory

4. After inserting the speaker into the Audio SPDIF hole, there is no sound output?

**Answer:** Please confirm the Source is indeed connected, if there is still no sound output, please return your device to local supplier or factory.



# User Manual



## IEB-22 UI Edge Blending Tool

V.2018IEB-22UI22.00

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# 1. BEFORE YOU BEGIN

Congratulations on your selection of the AVLink IEB-22 to provide the ultimate display of the whole solution. To use the IEB-22 to its full potential, be sure to carefully read this manual and keep it handy for future reference.

## 1.1 Unpacking Instructions

Immediately upon receiving a product, carefully unpack the carton, check the contents to ensure that all parts are present, and have been received in good condition. Notify the shipper immediately and retain packing material for inspection if any parts appear damaged from shipping or the carton itself shows signs of mishandling. **Save the carton and all packing materials.** In the event that a machine must be returned to the factory, it is important to return the machine in the original factory box and packing.

## 1.2 Package Contents

Item	Description & Number
	IEB-22 (Device) x 1
	12V/5A Power Adaptor x 1
	CD Manual x 1
	HDMI Cable x 4
	Micro USB Cable x 1

Figure 1: Package Contents

## 1.3 Contact Us

### World Wide

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## 1.4 Important Safety Information

To prevent damage to your AVLink products or to persons who operate the equipment, please read the following safety precautions before operating. These instructions shall be provided to all those who will use and operate the AVLink products.



- Do not attempt to repair this product yourself! Improper disassembly of the product may invalidate the warranty and cause possible risk.
- If you have a problem that cannot be solved, please use the "Troubleshooting" guidelines or contact your supplier.
- Place the devices and projectors on the stable surface of a sturdy rack or desk.
- Do not use water cleaning or benzene, gasoline, paint thinner, alcohol or other volatile solvents to wipe the product.
- Please do not store AVLink devices in the following environment:
  - High temperature, high humidity, dusty, moist and direct sunlight.
  - Places where there is a strong impact, vibration or uneven surface.
  - In an environment where chemical or corrosive gasses are placed.
- Ensure all equipment installed on the rack and all power strips and electrical connectors are grounded properly.

## ***EDGEBLENDING TOOL***

- Always unplug the power from the device before cleaning.
- Use only the power cord supported by the device.
- Unplug the power cord during lightning and thunder or after a long period of time when not in use to avoid damage to the device.
- Do not stand on any device while installing the device in the rack.
- Save the original box and all packing materials for future shipping needs.

## 2. INTRODUCTION

### 2.1 Overview

Edge blending is a way to overlap a portion of an image using two or more projectors. To create a wider or higher display that is better suited to display a wide screen video image. The IEB-22 features a simple operation and perfect edge blending.

### 2.2 Features

- The IEB-22 device provides 2 output channels.
- The maximum output channels are 256 (the channel number from 0 to 255).
- Supports USB connector for connecting between the IEB-22 and a computer.
- Supports color and brightness adjustment.
- Supports image overlapped adjustment.
- Supports import and export of the parameter settings.
- Supports the edge blending of flat, curved, wave-shaped, cornered and hemispherical surfaces.
- The software interface is easy to use and flexible.
- Supports HDMI connector for the input and output signals.
- IEB-22 can be widely used in most image applications.

### 2.3 Product Overview

#### 2.3.1 IEB-22 Front Panel

The IEB-22 supports 8 LED indicators for each equipment connection status.

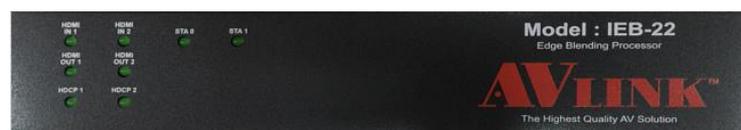


Figure 2: IEB-22 Front Panel

**HDMI IN1/IN2:** Specify the HDMI cable input port connection status.

- On: The HDMI cable input port is connected correctly.
- Off: The HDMI cable input port is not connected correctly.

**HDMI OUT1/OUT2:** Specify the HDMI cable output port connection status.

- On: The HDMI cable output port is connected correctly.
- Off: The HDMI cable output port is not connected correctly.

**HDCP1/HDCP2:** Specify the HDCP function is enabled or not.

- On: The HDCP function is working.
- Off: The HDCP function is disabled.
- Blinking: The HDCP function executes error.
  - Slow: Input error
  - Fast: Output error.

**STA0:** Specify the connection between the IEB-22 and the computer.

- On: The connection is ok, and the device and the computer are working.
- Off: The connection fails, or the device and the computer are not working.
- Blinking: The resolution of HDMI IN1 is not 1080p.

**STA1:** Specify the firmware upgrade status.

- Off: Normal type.
- Blinking: The resolution of HDMI IN2 is not 1080p.

### 2.3.2 IEB-22 Real Panel



Figure 3: IEB-22 Real Panel

Each IEB-22 device can accept 2 signals from different equipment and support up to 2 HDMI output channels. If there is a need to connect multiple devices and projectors, please see chapter 3-1.

**DC/12V:** The input voltage is DC/12V. And use only the power cord supported by the device.

**INPUT (HDMI 1/2):** These input ports are connected to the CD/DVD player, Blue-ray player, PS3, Video Camera, STB, and so on.

**Audio / SPDIF:** It is connected to the speaker.

**USB:** It is connected to the computer.

**OUTPUT (HDMI1/2):** These output ports are connected to A/V, HDTVs and projectors.

## 2.4 Specifications

Hardware	
Input Connector	HDMI Type A Female: IEB-22 (H) x 2
Output Connector	HDMI Type A Female (Local Video Output): IEB-22 (H) x 2
USB Connector	Micro USB type x1
Audio	Digital Optical Toslink x1 RCA Digital Audio x1
Power	DC / 12V
LED Indicator	Device/Signal Status x8
Housing	Metal
Weight	2.85 kg
Dimensions (LxWxH)	444 x 222 x 44 mm
Multimedia	
Max. Resolution	1080P for each input / output signal
Control Information	
HDMI Cable Distance	Local: 10 meters (Max.) / Remote: 10 meters (Max.)
Input Connector	HDMI Type A Female:

Figure 4: Specifications

### 3. HARDWARE SETUP AND SOFTWARE INSTALLATION

Before making the connections, make sure all devices are powered off. Refer to the illustrated connections below and also to the IEB-22 hardware user manual.

#### 3.1 Hardware Setup

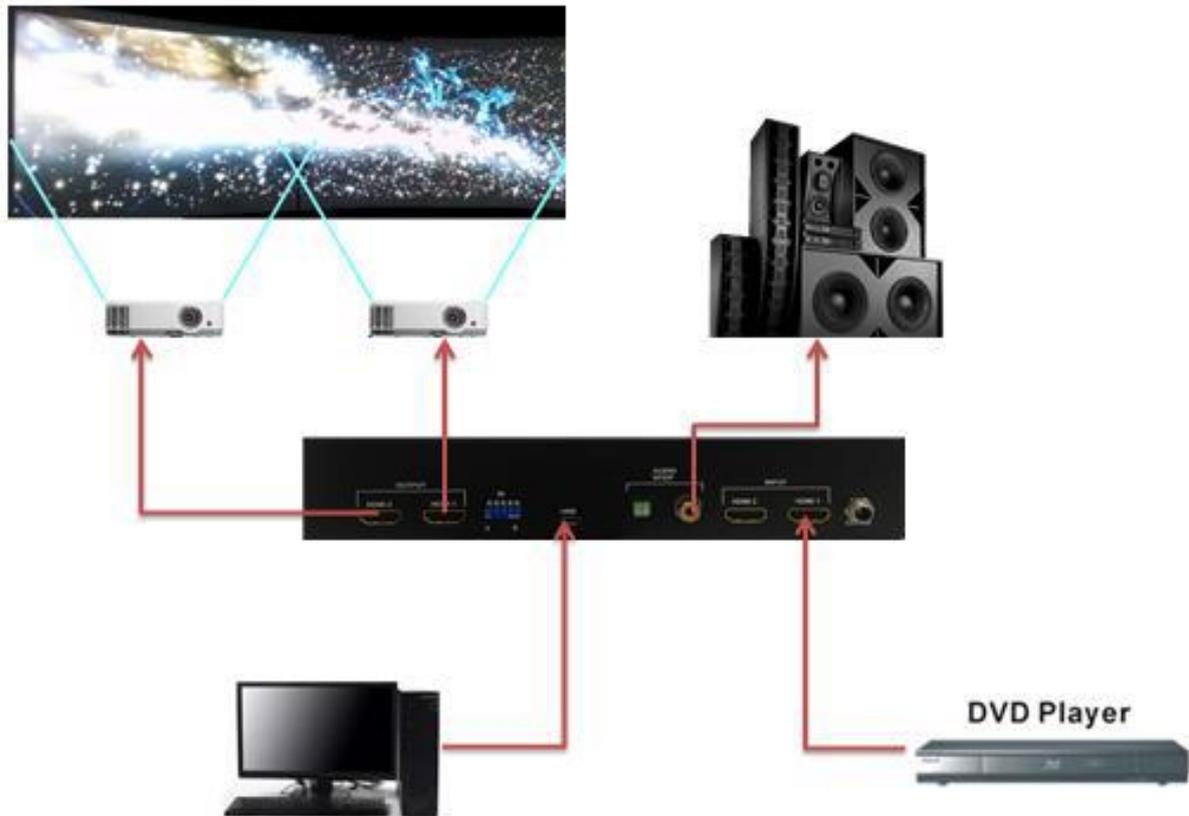


Figure 5: Single Device Schematic

All equipment and devices are connected via USB HUB. And the maximum output channels are up to 256.

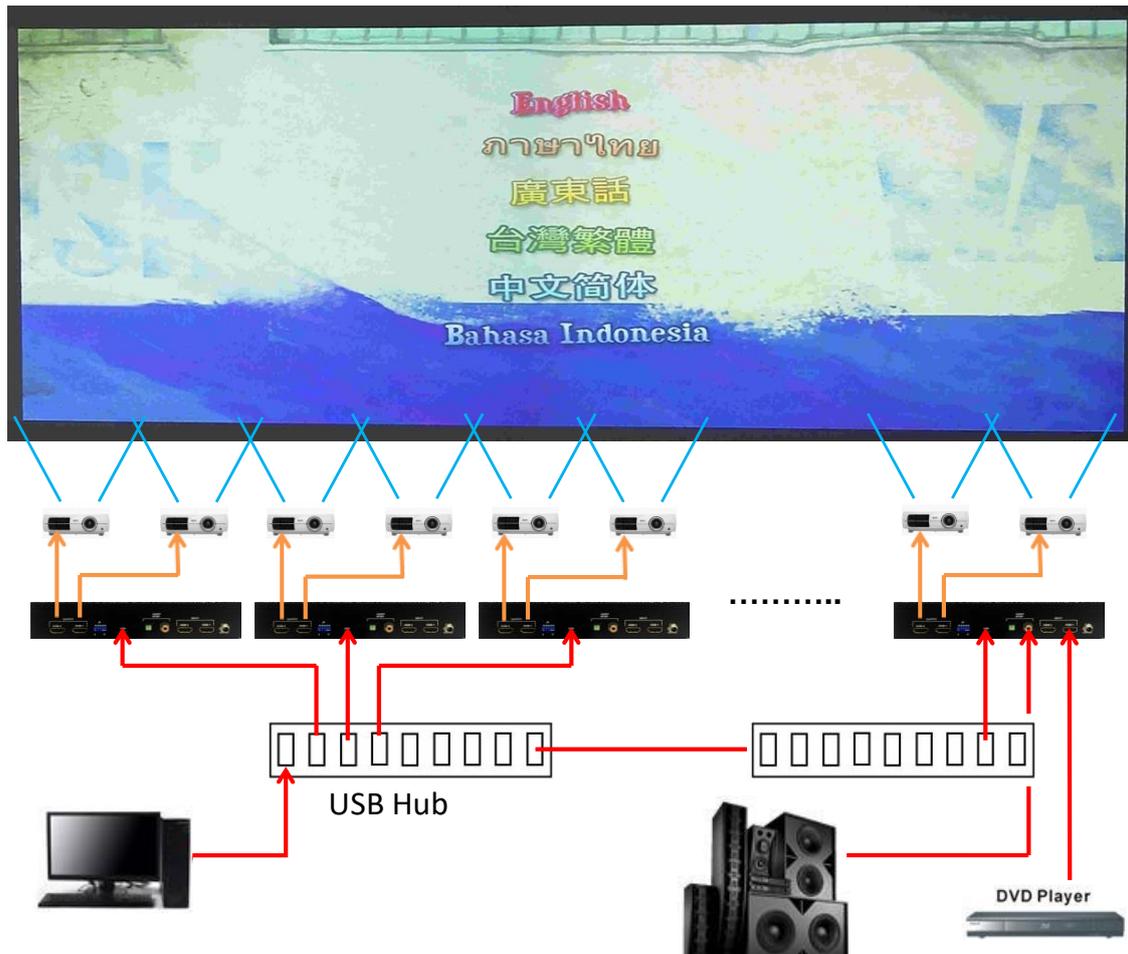
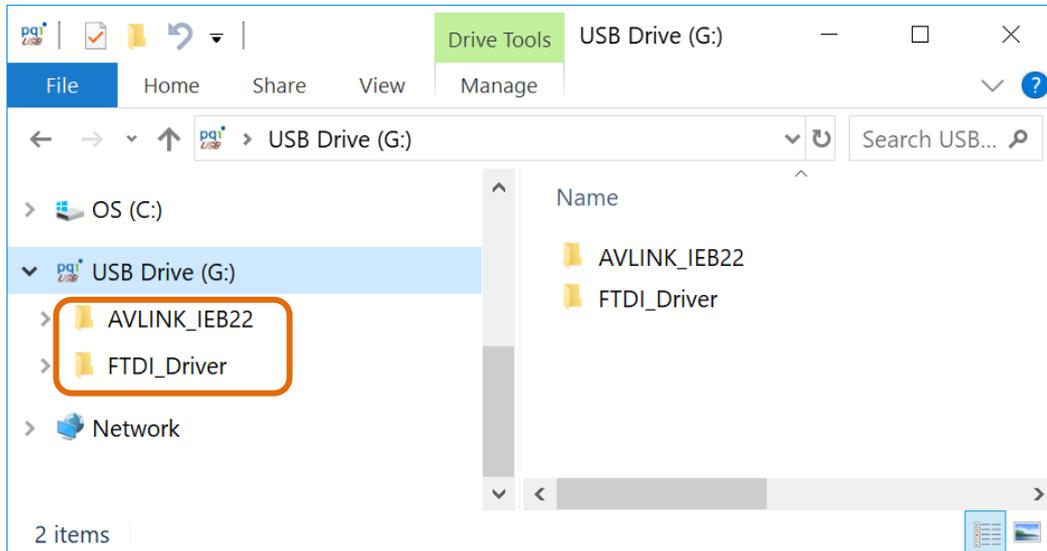


Figure 6: Multiple Devices Schematic

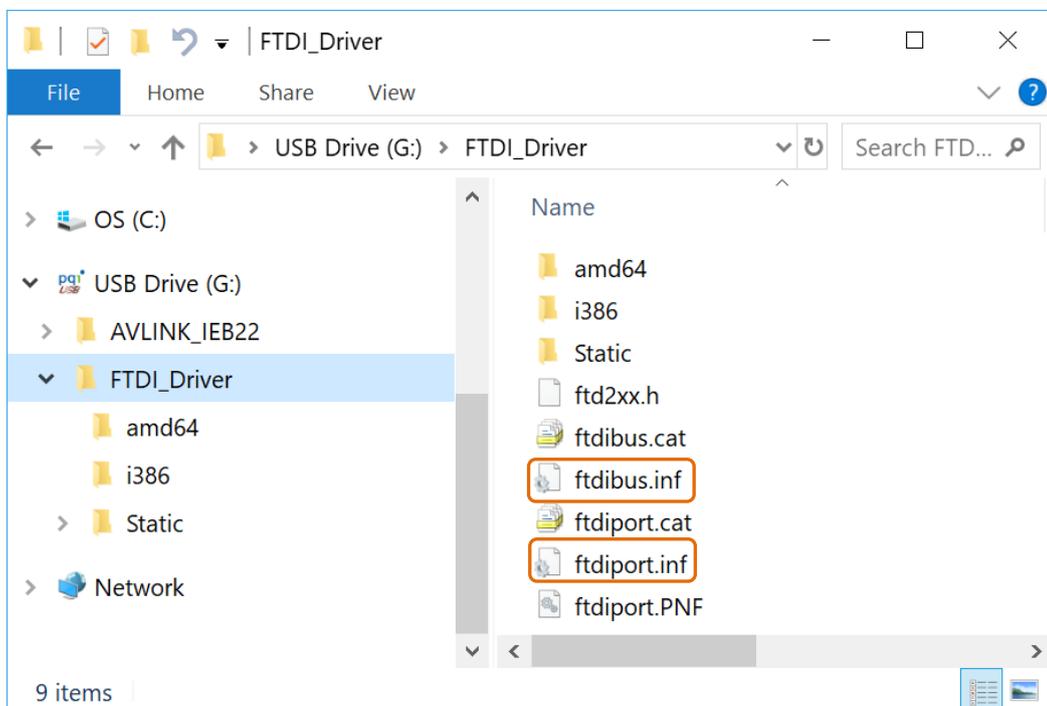
## 3.2 Software Installation

This software supports Microsoft Windows OS as Window 7/8/8.1/10 currently. Follow software installation steps on Window 10 x64 as below:

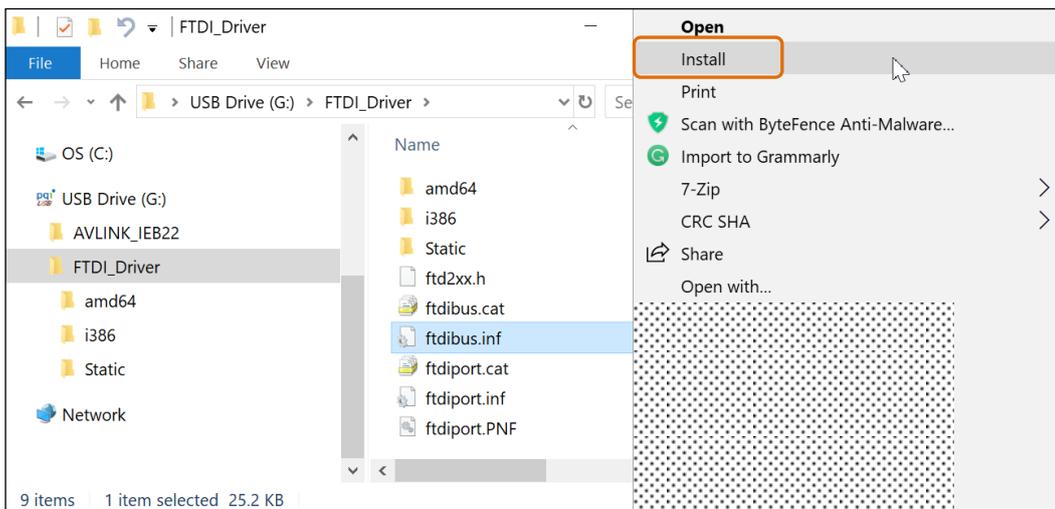
Step1: Insert CD driver to the computer CD-ROM.



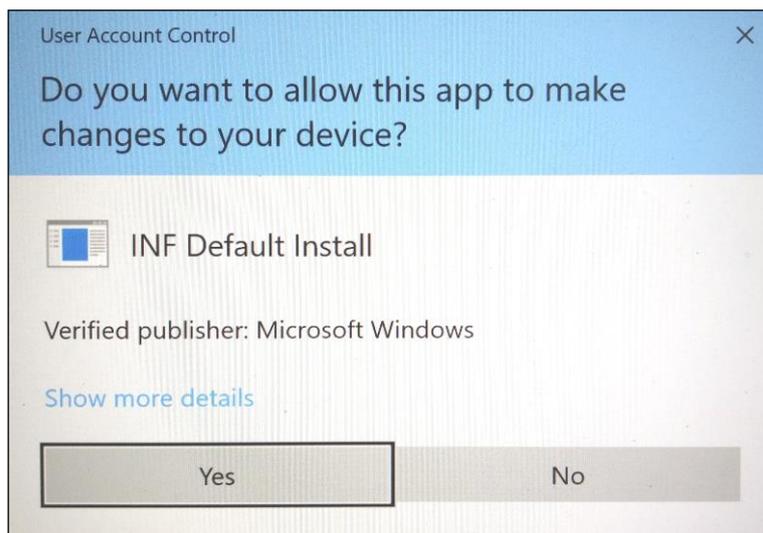
Step2: Find ftdibus.inf and ftdiport.inf in FTDI\_Driver folder.



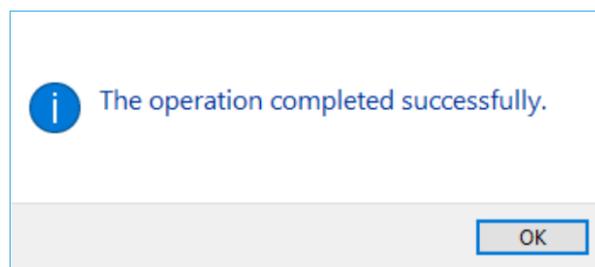
Step3: Right-click to select Install.



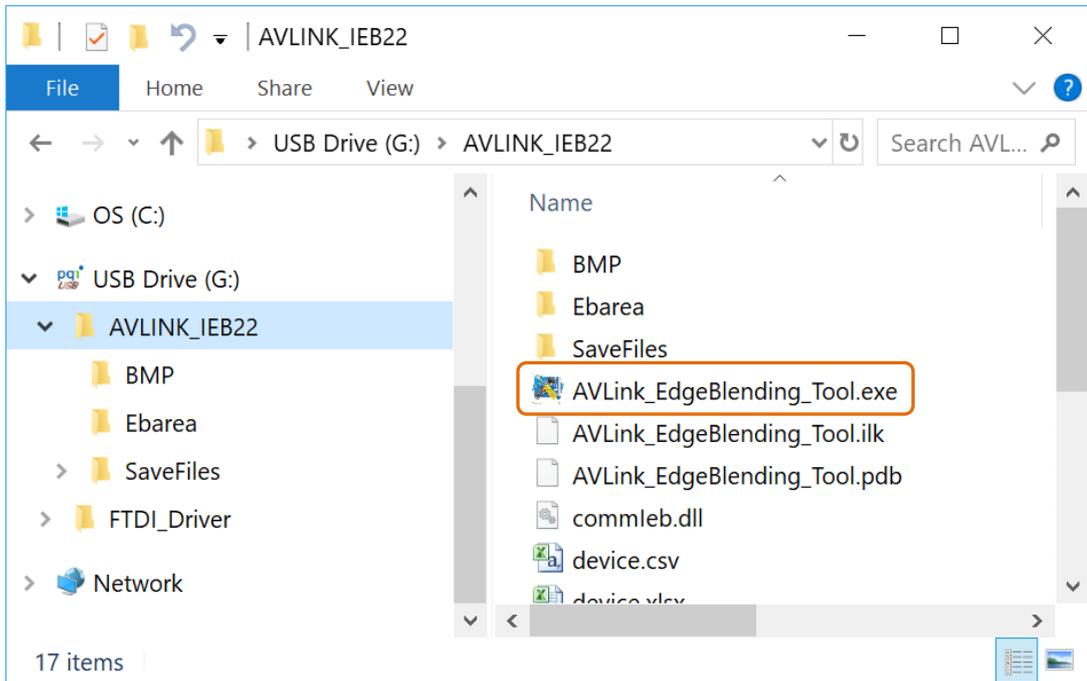
Step4: Select Yes.



Step5: Press OK.



Step6: Execute AVLink\_EdgeBlending\_Tool.exe in AVLink IEB22 folder.



## 4. AVLINK IEB22 SOFTWARE USER INTERFACE

After the software installation is complete, the following operation interface, AVLink Edge Blending Tool V1.0.0, will appear on the screen. The explanations for all the functions are described below.

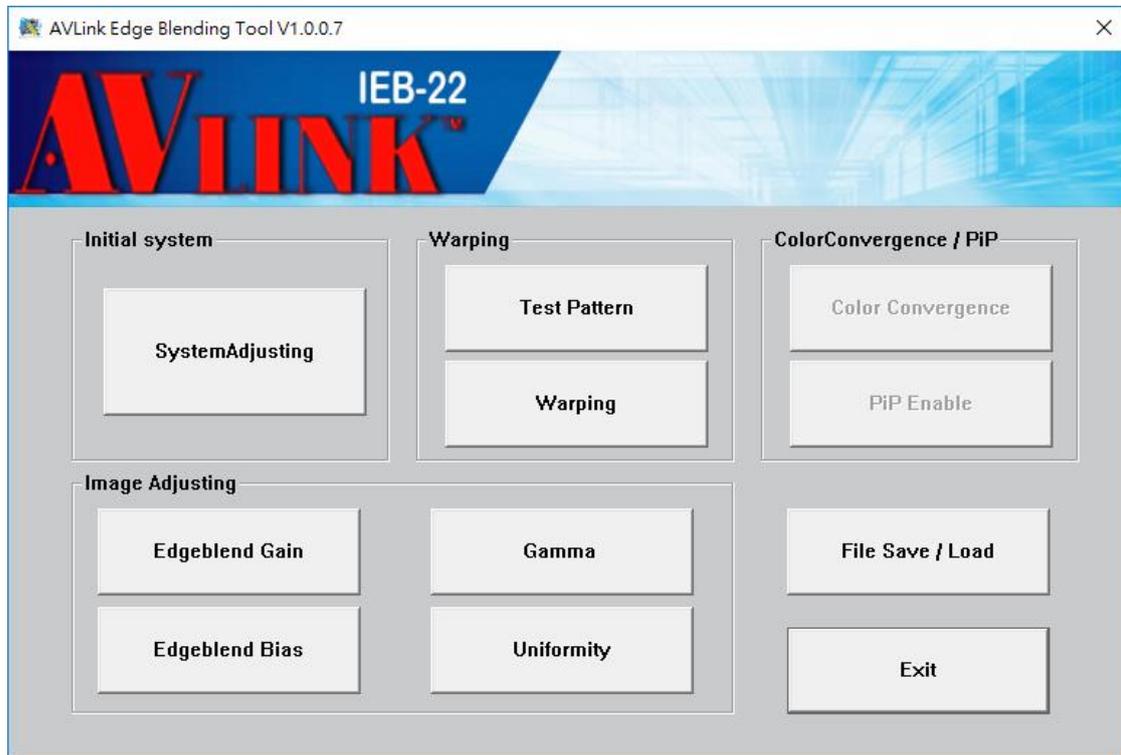


Figure 7: AVLink Edge Blending Tool

### 4.1 Initial System

Click the “**SystemAdjusting**” button, the function is as below figure.

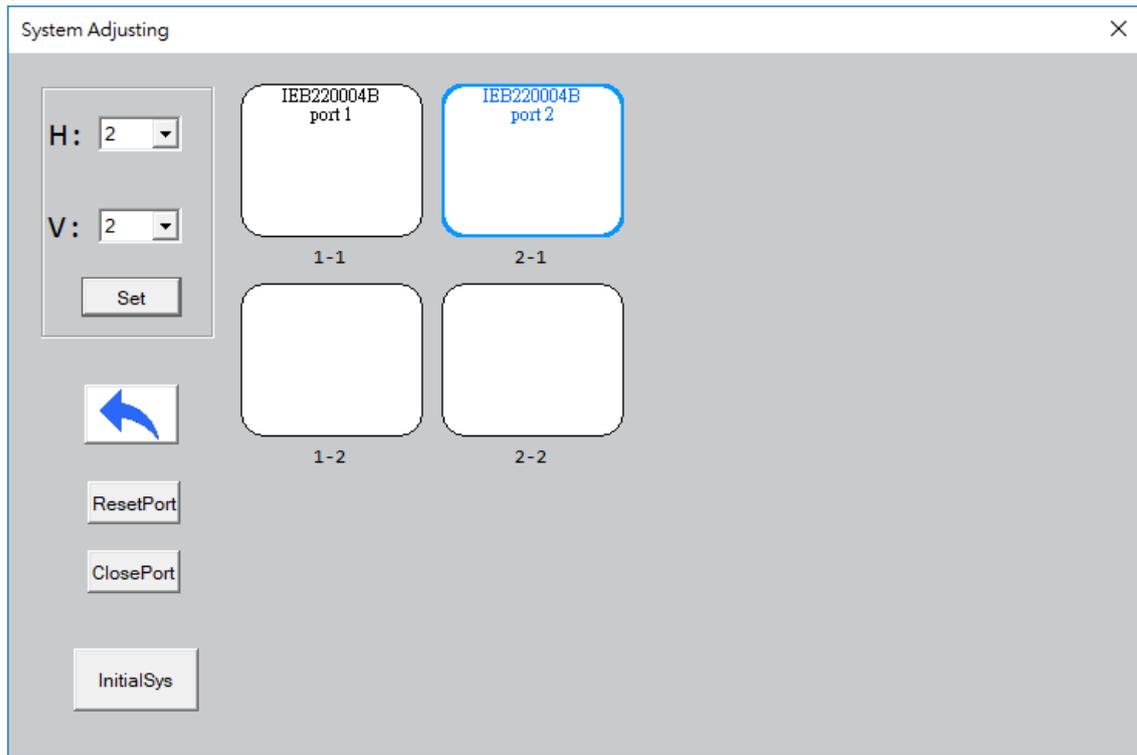


Figure 8: System Adjusting Function UI

**H / V Select:** Select the number that you want to adjust.

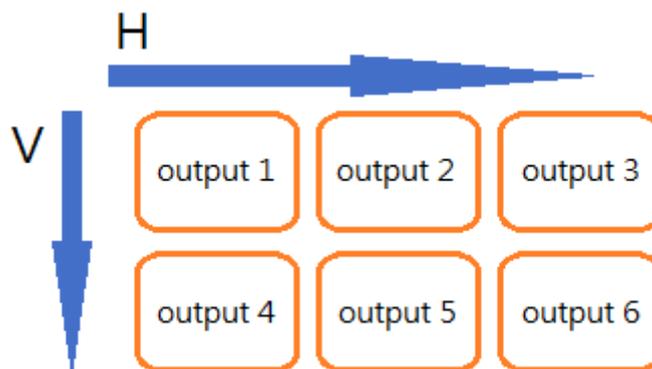


Figure 9: Schematic ( H , V ) = ( 3 , 2 )

**Change Position:** Click the schematic diagram to change the position.

- Single click to change: Press the left mouse button and drag the mouse until the mouse moves on the target position. Then, releases the left mouse button.
- Double click to change: First, double click to choose the position you want to change. When font color become blue (like Figure 8), click the target position.

**Close port:** First, double click to choose the position you want to close. When font color become blue(like Figure 8),click this button.

**Reset port:** Open all the port you closed.

**Initial Sys:** Initial system is used to initialize the system in order to take control of the system or reconfigure the final output screen. Click and Wait for initialization to complete. When the screen appears “Initial system done”, you can press “OK” and proceed to the next step.

## 4.2 Pattern / Warping

Use the Test Pattern and Warping function to splice all the patterns.

### 4.2.1 Test Pattern

Click the “**Test Pattern**” button, the function is as following figure.

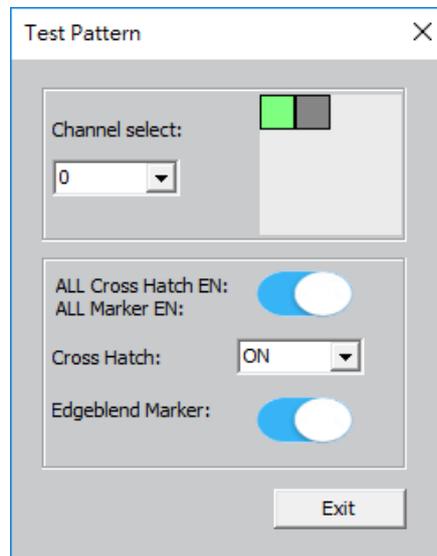


Figure 10: Test Pattern Function UI

**Channel Select:** Select the channel you want to adjust.

Pull down the “Channel select” menu, you will see the channel number from 0 to the number of total setting machines. And the maximum number of “Channel Select” is 225. Or you can click on the dark gray area. It will become green color.

**All Cross Hatch / All Maker:** Enable or disable all the cross-hatching patterns and the markers appear in the egdeblending area.

- ON: Enable all the devices'(channels') patterns and markers as below. The Cross Hatch and Edgeblend Marker are also set to ON while ticking "ON".
- OFF: Disable all the ices'(channels') patterns and markers. The Cross Hatch and Edgeblend Marker are also set to OFF while ticking "OFF". The screen shows the picture.
- Each channel's pattern has at least one or up to four groups of marks. One group mark automatically generated by the program contains a red and a green line.

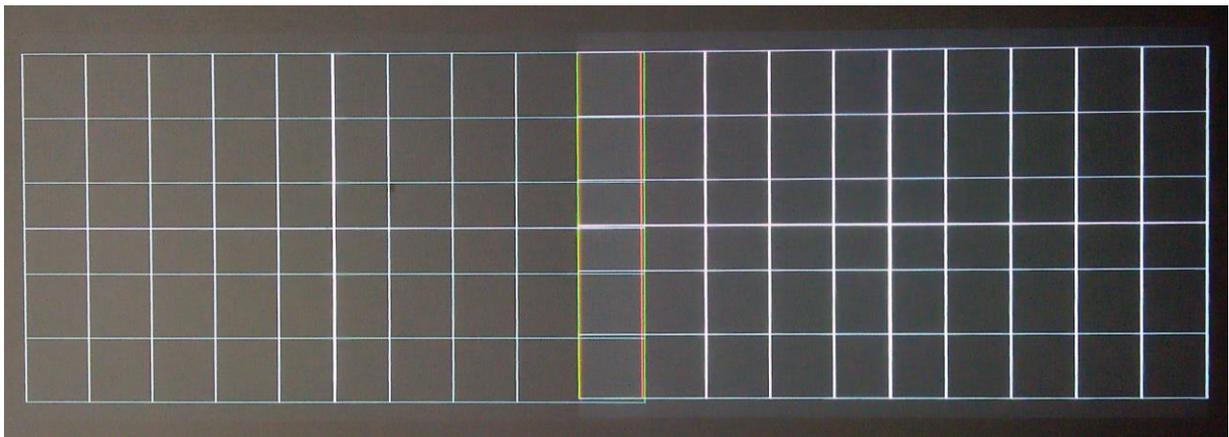


Figure 11: All Cross Hatch and Mark

**Gross Hatch:** Enable or disable a pattern based on the channel select number.

- ON: Enable the selected pattern based on the channel select number.
- OFF: Disable the selected pattern. And the screen will show the image.
- ON(tr): Enable all the patterns and the image as the following figure.



Figure 12: The Gross Hatch and the Image

**Edgeblend Marker:** Enable or disable the **Marker**.

- ON: Enable the marker based on the channel select number.
- OFF: Disable the marker based on the channel select number.

### 4.2.2 Warping

Click the **“Warping”** button, the function is as below figure.

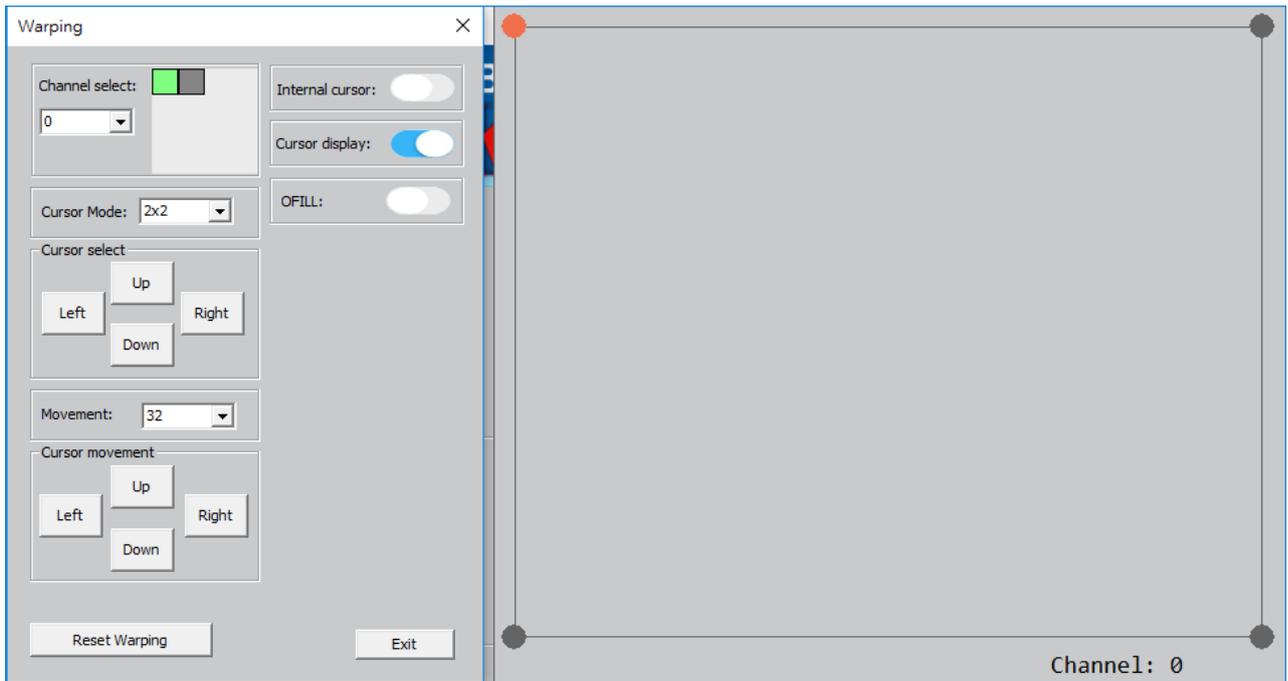


Figure 13: Warping Function UI

**Cursor Mode:** The number of cursors appears in the pattern of the selected channel. It has the following setting: 2x2, 3x3, 5x5, 9x9, 18x18 and 32x32.

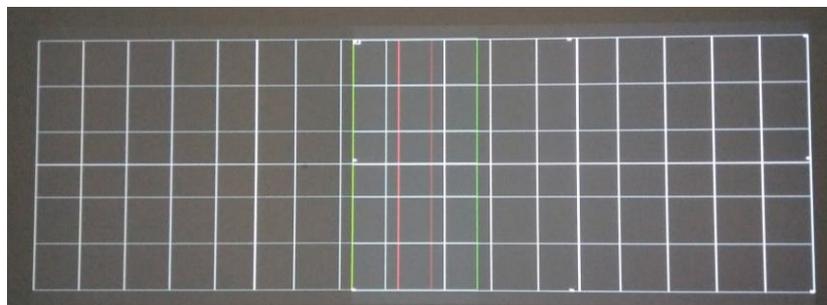


Figure 14: Cursor Mode 3x3

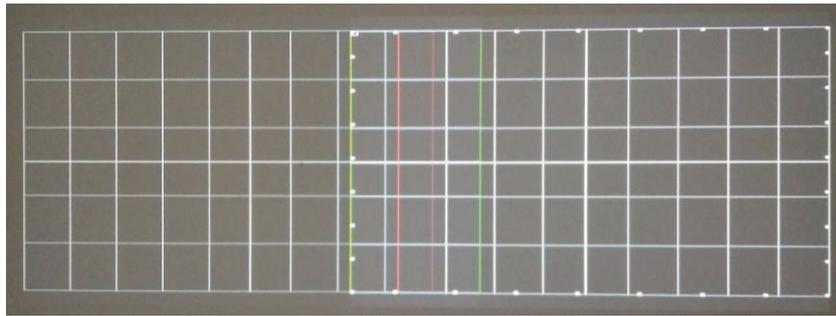


Figure 15: Cursor Mode 9x9

**Channel Select:** Select the channel you want to adjust.

**Movement:** The cursor offset distance. 32 means the selected cursor offsets 32 pixels once. It has the following setting: 0.5, 1, 4, 16, 32 and 64.

**Internal Cursor:** Enable or disable all the internal cursors.

- ON: Enable all the internal cursors.
- OFF: Just close the internal cursors and leave the external cursors.

**Cursor Select:** Use Up, Down, Left and Right to select the target cursor.

**Cursor Movement:** Use Up, Down, Left and Right to adjust the selected cursor splicing to the target position. Furthermore, you can press and drag the schematic diagram to adjust.

**Warping OFILL:** Enable or disable the pattern based on the channel select number.

- ON: Disable the pattern based on the channel select number.
- OFF: Enable the pattern based on the channel select number.

**Cursor Display:** Enable or disable the cursor.

- ON: Enable the cursor based on the channel select number.
- OFF: Disable the cursor based on the channel select number.

**Reset Warping:** Clean all the settings and return to the initial state.

## 4.3 Image Adjusting

To get a better image, use the function of **Edgeblend Gain** and **Edgeblend Bias** to

adjust the brightness and color difference of none edgeblending areas. When start edgeblending, the **All Gain EN** of **Edgeblend Gain** and the **All Gamma EN** of **Edgeblend Gamma** must be set to **ON**.

### 4.3.1 Edgeblend Gain

Click the **Edgeblend Gain** button, the function is shown below.

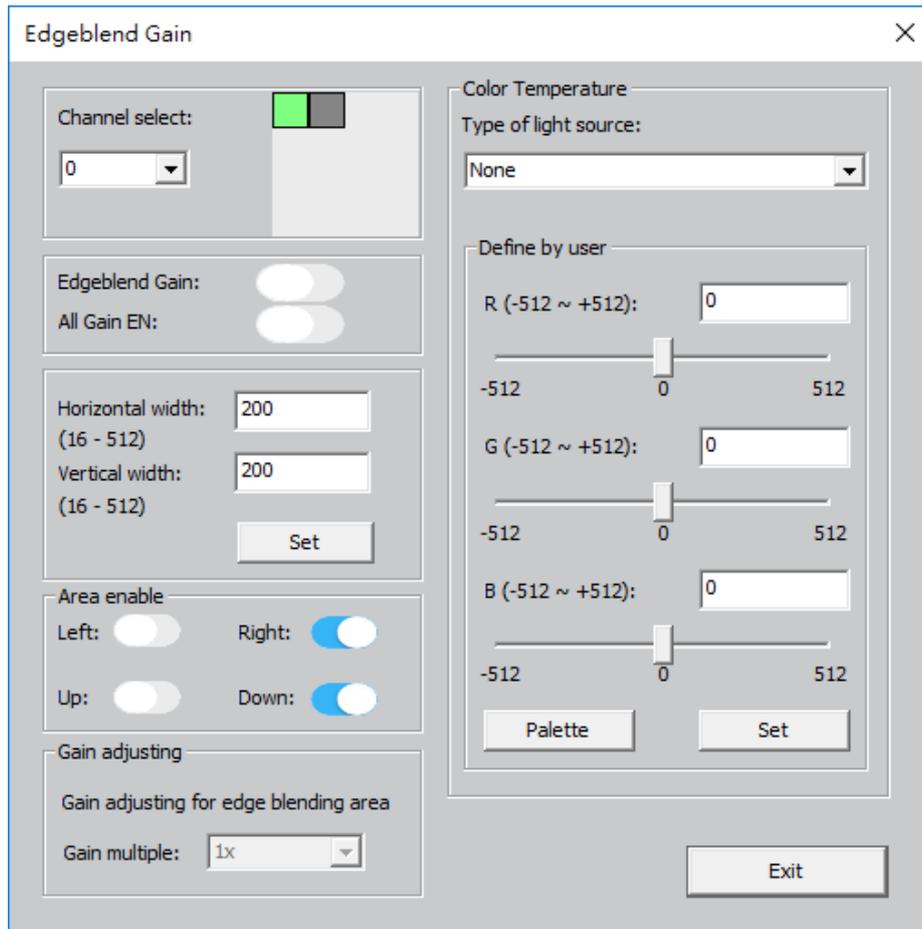


Figure 16: Edgeblend Gain Function UI

**Channel Select:** Select the channel you want to adjust.

**Edgeblend Gain:** Enable or disable the gain of edgeblending area.

- ON: Enable the edgeblending function based on the channel select number.
- OFF: Disable the edgeblending function based on the channel select number.

**All Gain EN:** Enable or disable all gain to execute edgeblend function.

- ON: Enable all gain of the edgeblending areas. The **Edgeblend Gain** is also set to ON while ticking “ON”.
- OFF: Disable all gain of edgeblending areas. The **Edgeblend Gain** is also set to OFF while ticking “OFF”.

**Horizontal Width:** Set the horizontal width of each grid pattern from 16 to 512 pixels. After modifying the width, press **Set** to change the pattern.

**Vertical Width:** Set the vertical width of each grid pattern from 16 to 512 pixels. After modifying the width, press **Set** to change the pattern.

Set horizontal and vertical width as 300x300, the pattern is below.

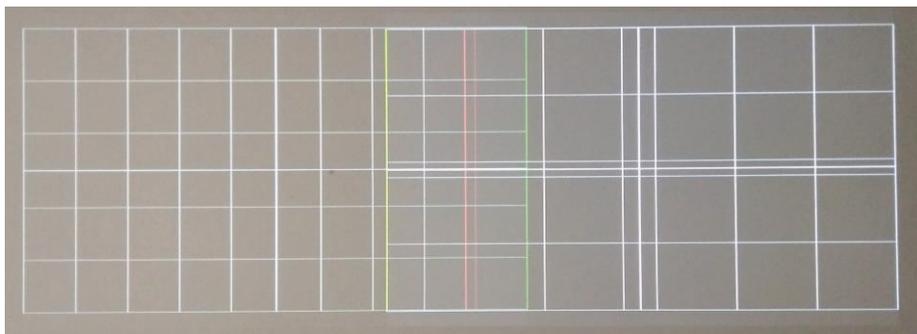


Figure 17: Pattern with the horizontal and vertical width as 300x300

**Area Enable:** Show the position of the edgeblending area. The default edgeblending area is automatically calculated by the program.

- Left: Tick **ON** to change the edgeblending area on left. Tick **OFF** to replay the initial setup position of the system.
- Right, Up and Down: The same setting as described above

### 4.3.2 Edgeblend Bias

Click the **Edgeblend Bias** button, the function is shown below.

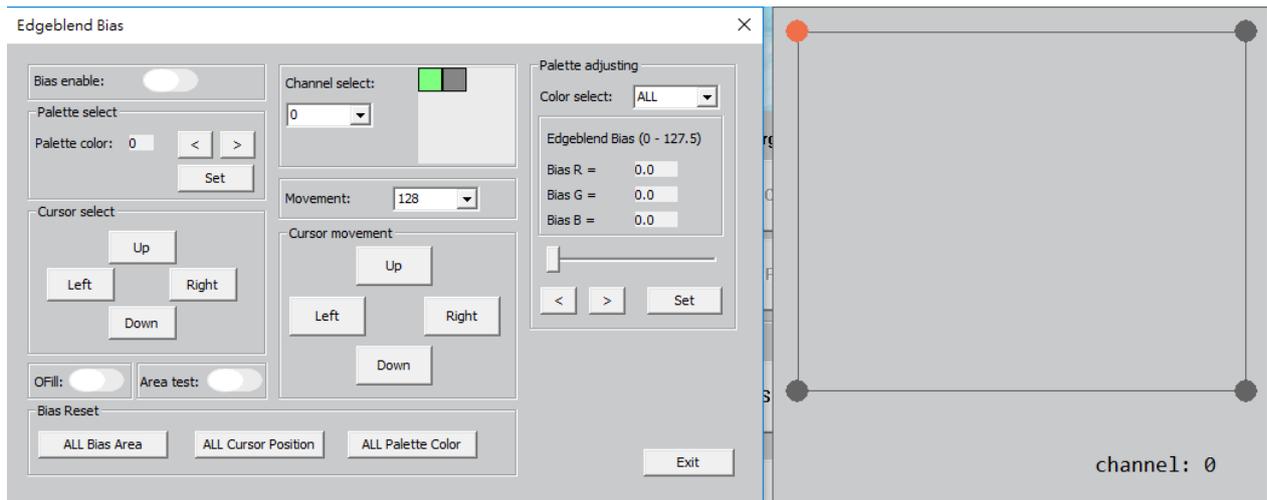


Figure 18: Edgeblend Bias Function UI

**Bias Enable:** Enable or disable the bias function.

- ON: Enable the bias function.
- OFF: Disable the bias function.

**Movement:** The cursor offset distance. 32 means the selected cursor offsets 32 pixels once. The **Movement** has the following setting: 0.5, 1, 4, 16, 32, 64 and 128.

**Palette Select:** Select one number from 0 to 15 to save all the bias adjusting value. Then press the **Set** button to save. Each channel has 16 storage locations.

☞ Notice: The palette color “0” is blank. If the image needs to adjust the bias, not to choose the palette color 0.

**Channel Select:** Select the channel you want to adjust.

**OFill:** Enable or disable the bias function of selected channel.

- ON: Disable the bias function based on the channel select number.
- OFF: Enable the bias function based on the channel select number.

**Area Test:** Click “ON” to lighten the selected area. See below figure.

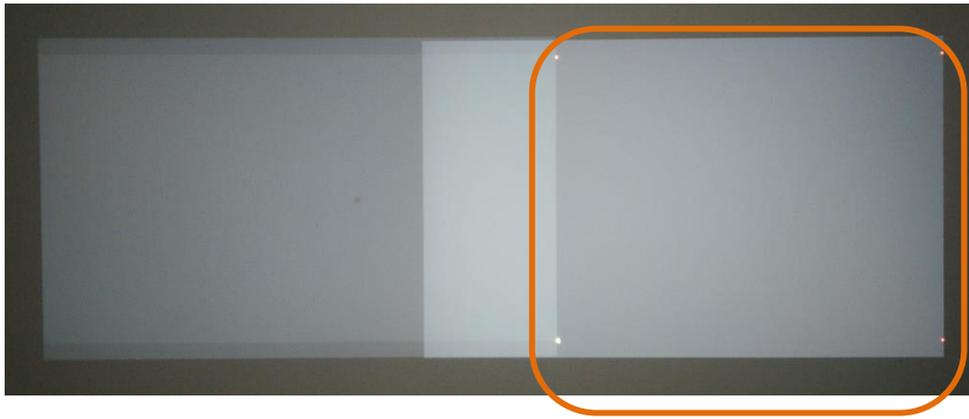


Figure 19: Lighten the selected area

**Palette Adjusting:** Adjust the bias for individual Red, Green and Blue or all colors.

- Color Select: Select Red, Green, Blue or ALL for adjustment.
- Edgeblend Bias (0-127.5): Use the “<” or “>” button or horizontal bar to adjust the edgeblend bias of Red, Green and Blue from 0 to 127.5 based on the color select value. Then press the Set button to save the data.

**Cursor Select:** Use Up, Down, Left and Right to move the cursor to the target position.

**Cursor Movement:** Use Up, Down, Left and Right to adjust the selected cursor. Furthermore, you can press and drag the schematic diagram to adjust.

**Bias Reset:** Reset all the bias settings and return to initial state.

- ALL Bias Area: Reset all the bias areas.
- ALL Cursor Position: Reset all the cursor position.
- ALL Palette Color: Reset all the palette colors.

### 4.3.3 Gamma

The adjustment of the gamma curve can change the brightness and contrast of the image. Click the **Gamma** button, the function is as below figure.



Figure 20: Edgeblend Gamma Function UI

**Channel Select:** Select the channel needs to adjust.

**Edgeblend Gamma:** Adjust the gamma value of an image.

- Gamma enable: Enable or disable the gamma function based on the selected channel.
  - ON: Enable the gamma function based on the channel select number.
  - OFF: Disable the gamma function based on the channel select number.
- All Gamma EN: Enable or disable all gamma of the channel select number.
  - ON: Enable the gamma function of all the channels. The Gamma enable is also set to ON while ticking “ON”.
  - OFF: Disable the gamma function of all the channels. The Gamma enable is also set to OFF while ticking “OFF”.
- Gamma coefficient: Use the “<” or “>” button or horizontal bar to adjust the parameter of Gamma R, Gamma G and Gamma B based on the color select. Then press the Set button to save the data.

**Edgeblend Output Gamma:** Adjust the gamma value of the projector output performance.

- Output gamma enable: Enable or disable the output gamma function based on the

selected channel.

- ON: Enable the output gamma function based on the channel select number.
- OFF: Disable the output gamma function based on the channel select number.
- All output gamma: Enable or disable the all output gamma function based on the selected channel.
  - ON: Enable the all output gamma function based on the channel select number.
  - OFF: Disable the all output gamma function based on the channel select number.
- Color select: Select ALL, Red, Blue or Green.
- Output Gamma coefficient: Shows the selected point position and the adjusted gamma information.
  - Set point: Shows the selected point position.
  - Gamma R / Gamma G / Gamma B: Shows the output gamma information.
- Select point: Use the “<” or “>” button to select a point.
- Gamma: Use the “<” or “>” button or horizontal bar to adjust the gamma of the selected point.
  - Set: Press set to save the settings.
  - Reset: Reset all settings.

**Edgeblend Bias Gamma:** Shows the Edgeblend Bias Gamma information.

- Gamma coefficient: Shows the Edgeblend Bias Gamma coefficient.
- Color select: Select ALL, Red, Blue or Green.
  - Gamma R / Gamma G / Gamma B: Shows the output gamma information.
  - Set: Press Set to save the settings.
  - Reset: Reset all settings.

#### 4.3.4 Uniformity

Use the Uniformity function to adjust the uneven color and brightness of the screen.

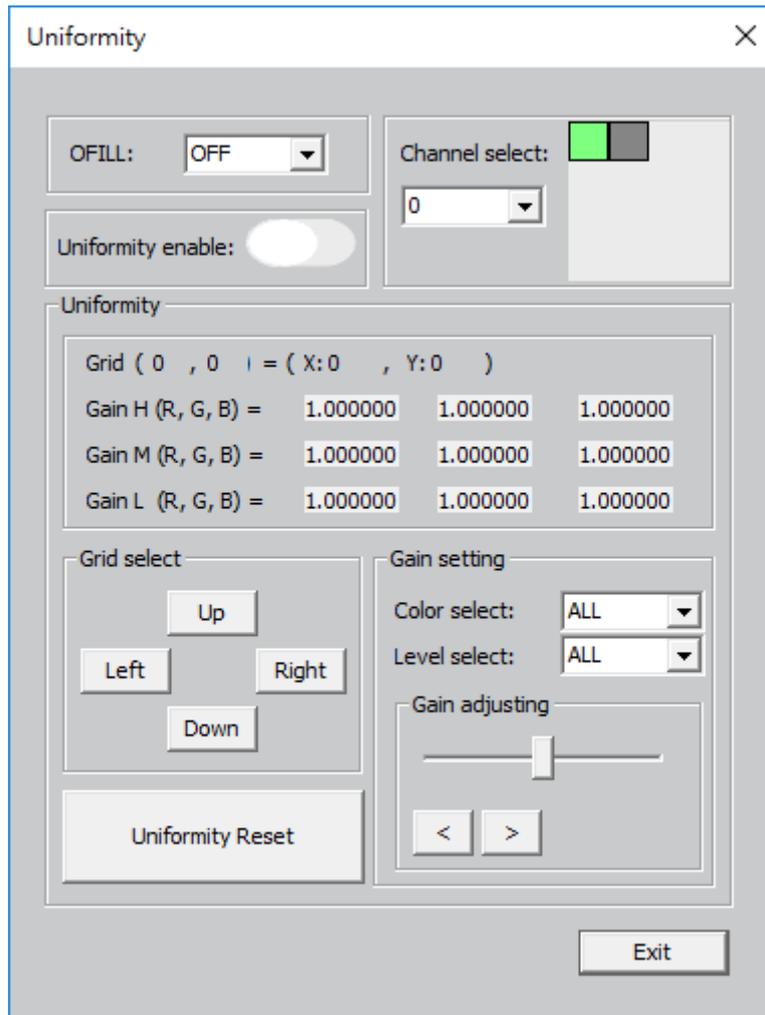


Figure 21: Uniformity Function UI

**Channel select:** Select the channel needs to adjust.

**OFILL:** Enable or disable the uniformity function of selected channel.

- ON: Disable this function based on the channel select number.
- OFF: Enable this function based on the channel select number.

**Edgeblend Uniformity:** Enable or disable the Edgeblend Uniformity function of selected channel.

- ON: Enable this function based on the channel select number.
- OFF: Disable this function based on the channel select number.

**Uniformity:** Shows the selected grid position and the adjusted color information.

- Grid (0,0): Shows the selected grid position.
- Gain H (R, G, B) / Gain M (R, G, B) / Gain L (R, G, B): Shows the color information.

**Grid select:** Use Up, Down, Left and Right to select the target grid. Each grid is 32x32 pixels.

**Uniformity Reset:** Reset all the uniformity settings.

**Grid select:**

- Color select: Select ALL, Red, Blue and Green to adjust.
- Level select: Select ALL, Low, Middle and High to adjust
- Gain adjusting: Use the “<” or “>” button or horizontal bar to adjust the gain of the selected grid.

## 4.4 File Save / Load

Click “**File Save / Load**” button, the file operation function is as below.

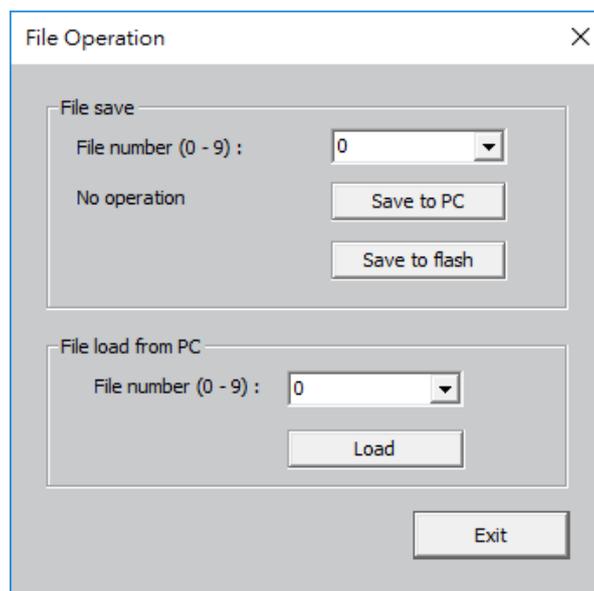


Figure 22: File Operation Function UI

**.Save to PC:** Select one file number(0-9) to save all the settings of the parameters.Then press Save to PC button to save.

**.Save to flash:** Save all the settings of the parameters in to the device. Press Save to flash button to save.

**.File Load:** Select one file number to load the settings that are saved in the file number from 0 to 9.Then press Load button to download.

## 5. QUICK START

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**9 steps** to complete the work easily.

Step1: Click **“Initial system”** button and wait for initialization to complete. When the screen appears **“Initial system done”**, you can press **“OK”** and proceed to the next step.

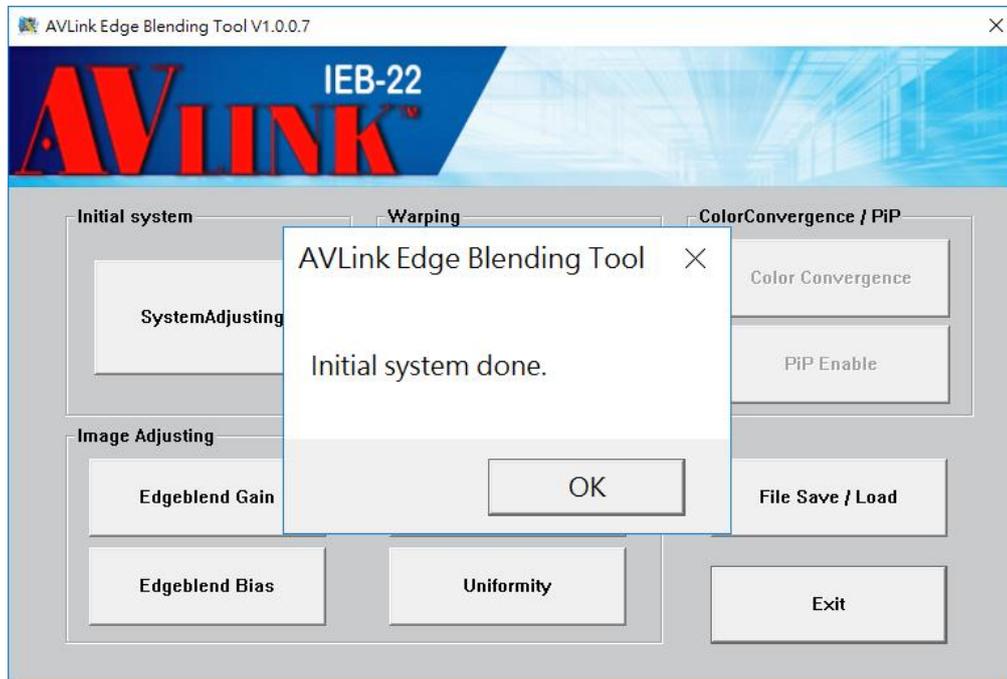


Figure 23: Quick Start - Initial system done 1

Step2: Click **“SystemAdjusting”** button.

- Choose H & V to the actual layout and click **“Set”**.
- Edit the schematic diagram position

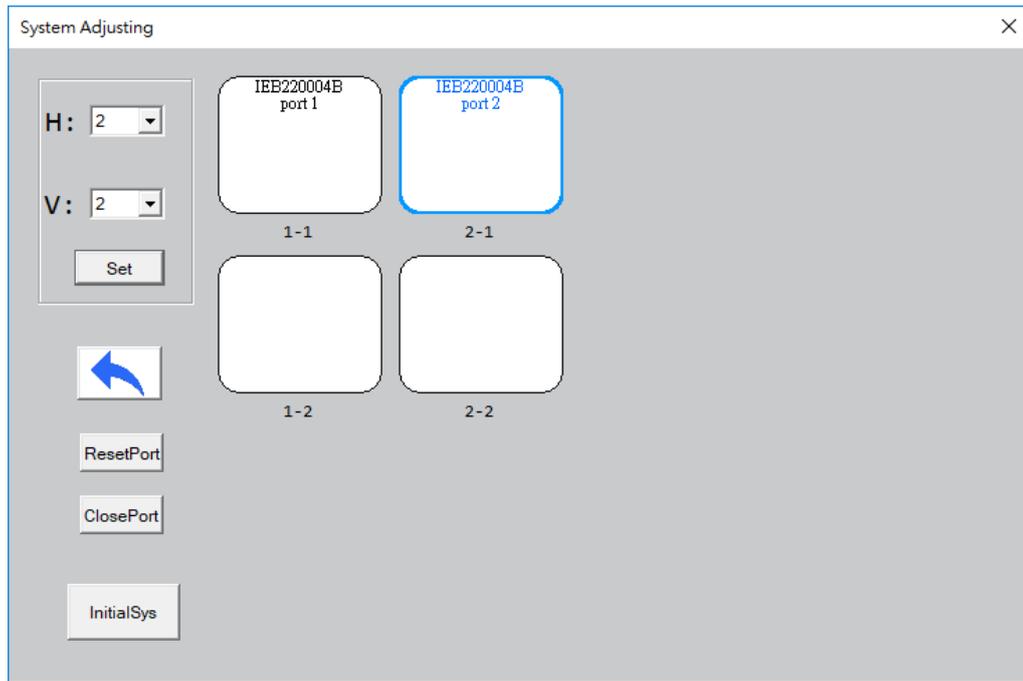


Figure 24: Quick Start – SystemAdjusting UI

Step3: Click “**InitialSys**” button, and wait the “initial system done” message to appear. Then press “OK” and proceed to the next step.

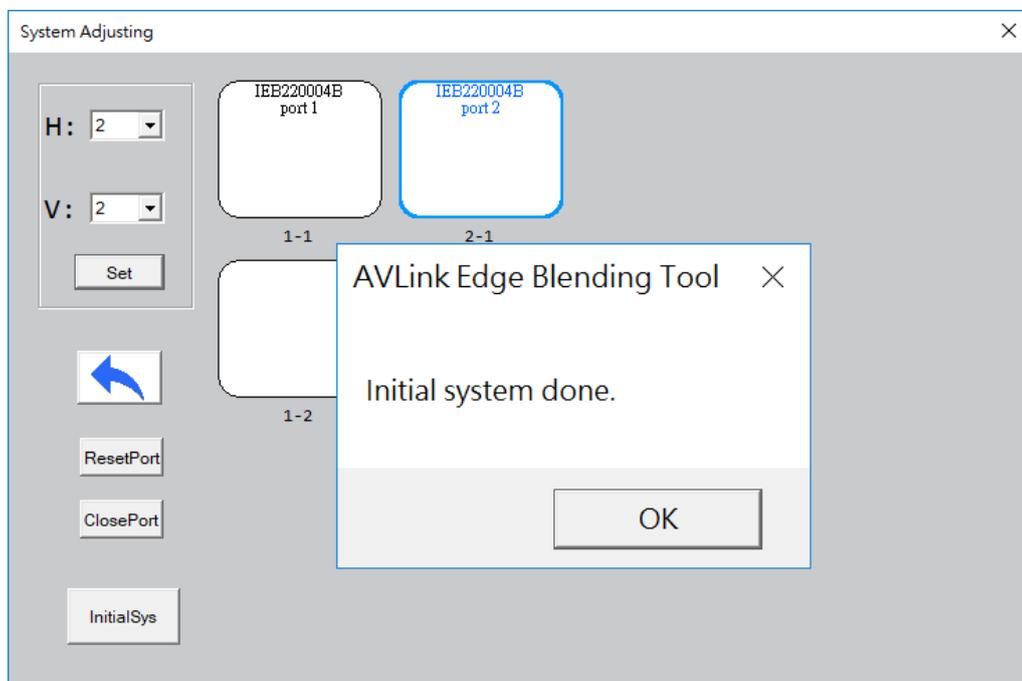


Figure 25: Quick Start - Initial system done 2

Step4: Click the “**Test Pattern**” button.

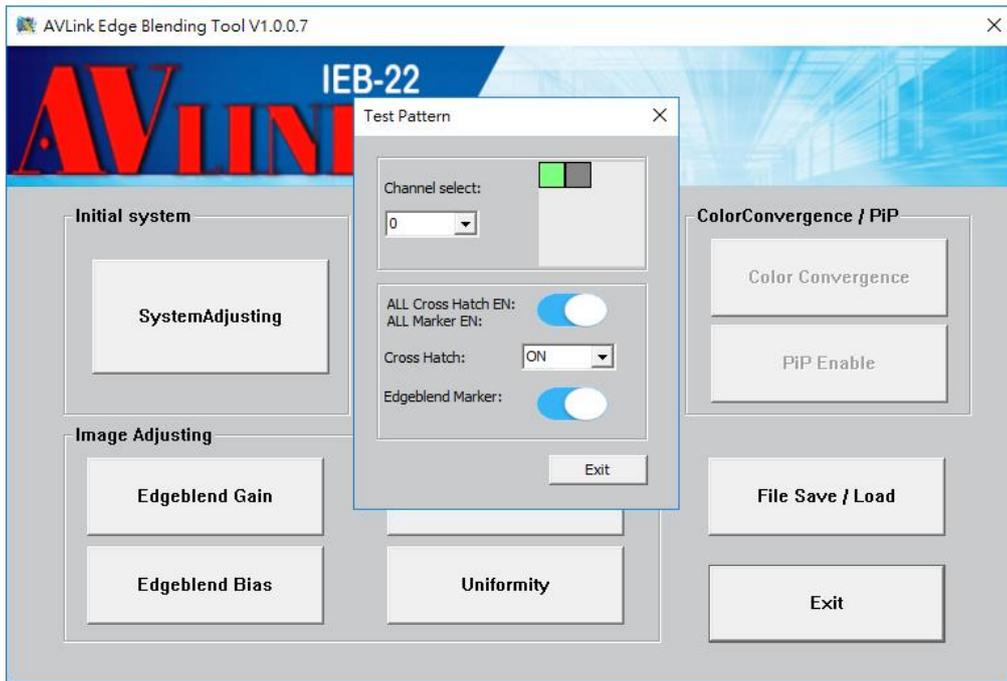


Figure 26: Quick Start - Test Pattern Function All ON

- Tick All Cross Hatch EN / All Marker EN as ON.
- Set Cross Hatch as ON.
- Tick Edgeblend Marker as ON.
- Exit this function.

Then the patterns will appear as below.

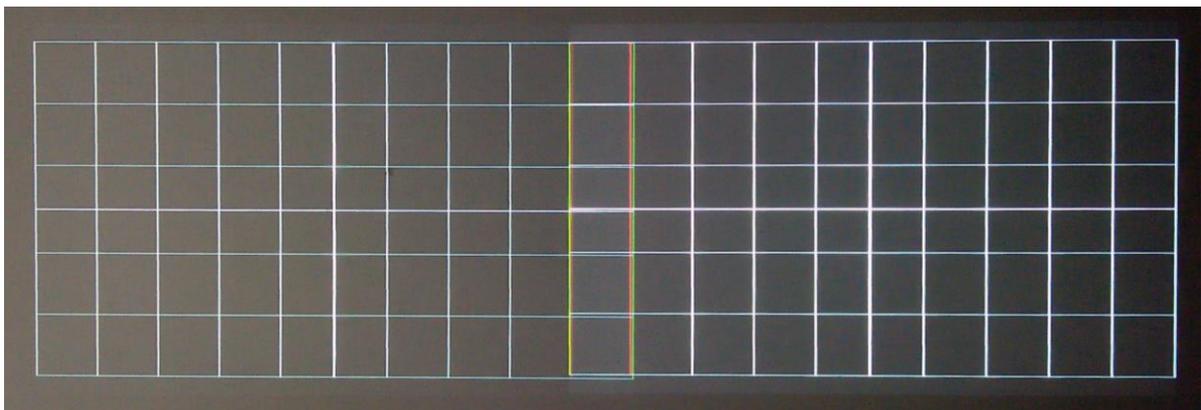


Figure 27: Quick Start – All Pattern and Marker ON

Step5: Click the “**Warping**” button to begin splicing.

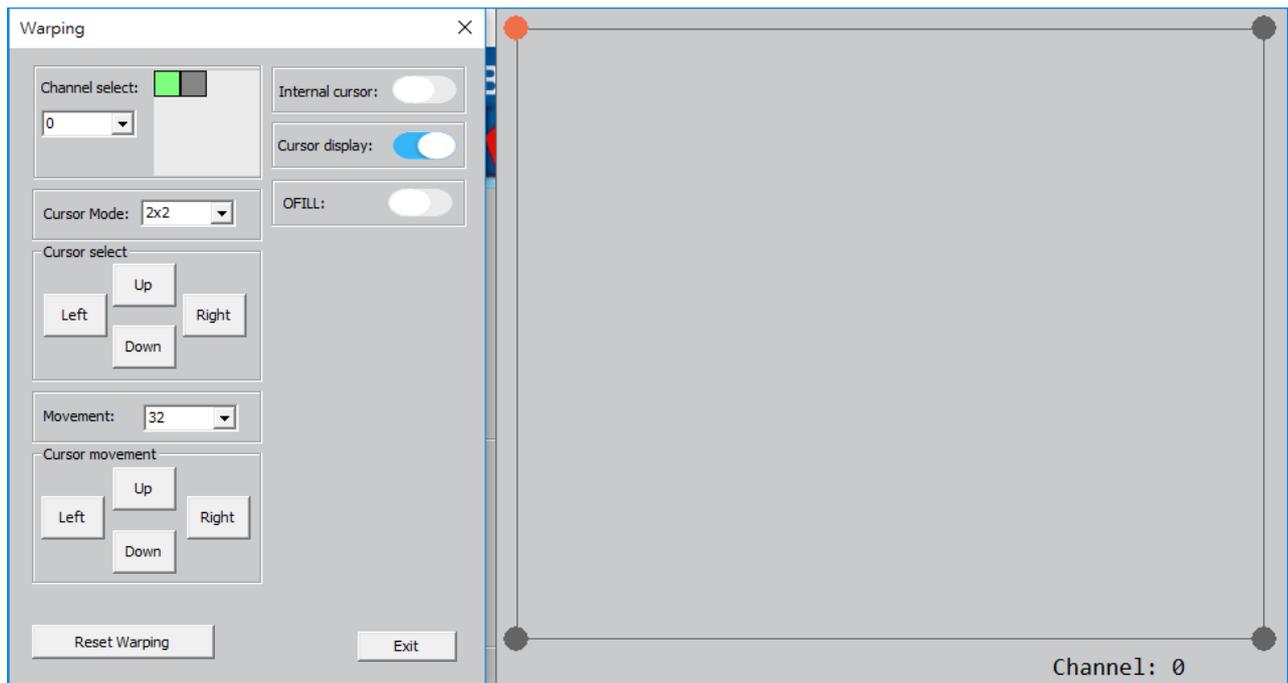


Figure 28: Quick Start – Warping Function UI

- Select one device that needs to warp. (ex: 0)
- Set **Cursor Mode** as 2x2.
- Set **Movement** as 32. You can choose another parameter to fit your operation.
- Keep **Internal** and **OFILL** setting as default.
- Tick **Cursor display** as ON.
- Select the cursor that needs to adjust.
- Move the selected cursor to the correct location with direct function buttons in the warping block. (Move point **a1** to match point **b1** as shown in the figure below.)
- Change another points and devices and repeat the above steps. Till the green line overlaps exactly with the red line.
- Until all pattern splicing is done as following figure. Exit this function.

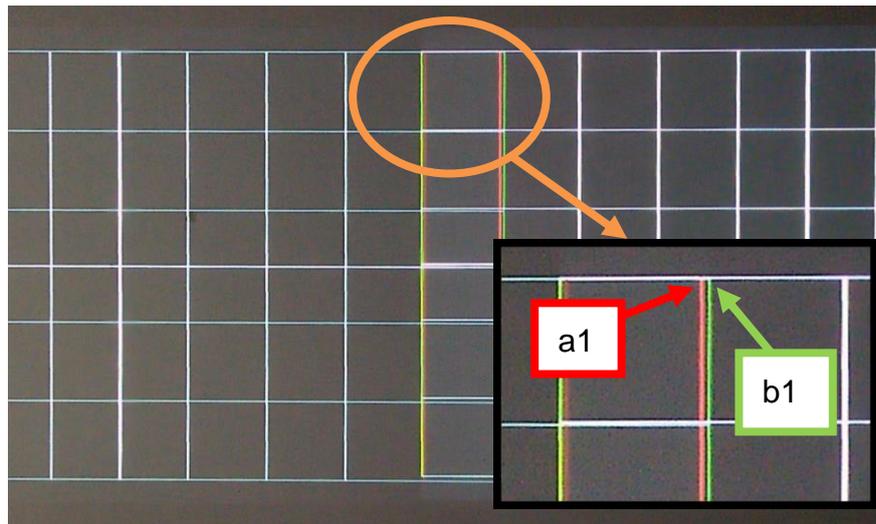


Figure 29: Partial Pattern Zoom Out

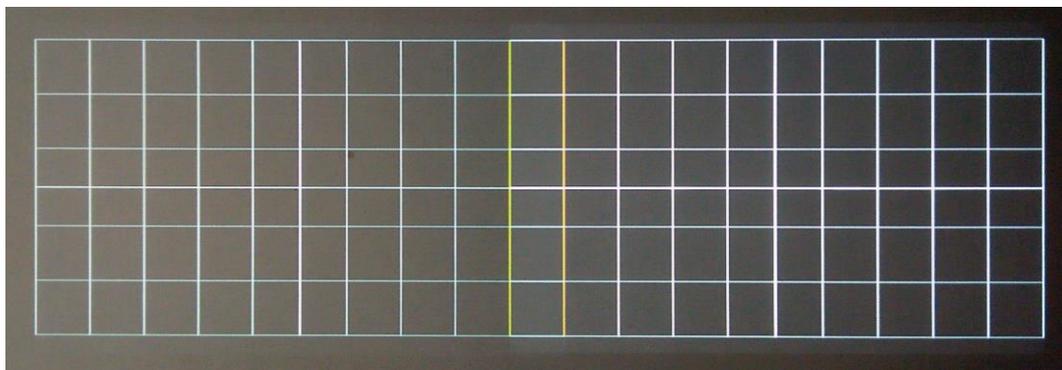


Figure 30: Finish Splicing Pattern

Step6: Execute “**Test Pattern**” again.

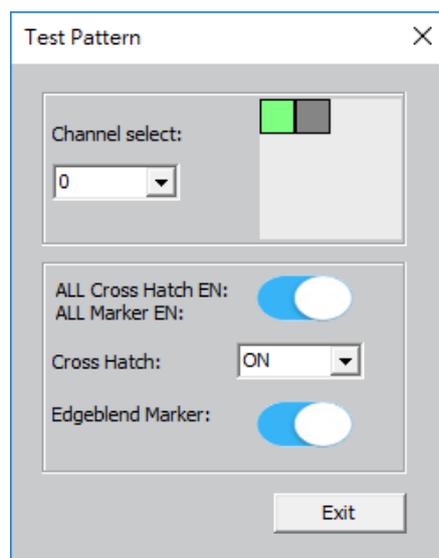


Figure 31: Quick Start - Test Pattern Function All OFF

- Tick **ALL Cross Hatch EN / ALL Marker EN** as OFF.
- Set **Cross Hatch** as OFF.
- Tick **Edgeblend** as OFF.
- Exit this function.

Then it will go back to the video screen.

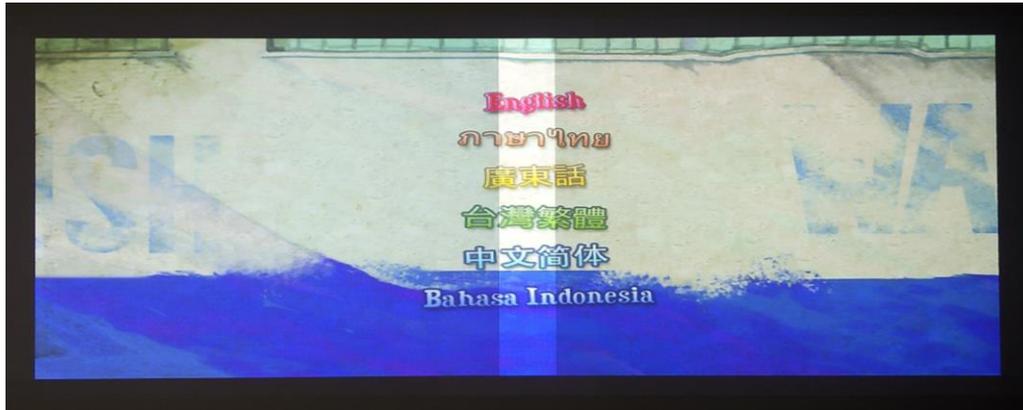


Figure 32: Finish Splicing Image

Step7: Click the “**Gamma**” button.

- Tick **Gamma enable** as ON.
- Tick **All Gamma EN** as ON.
- Exit this function.

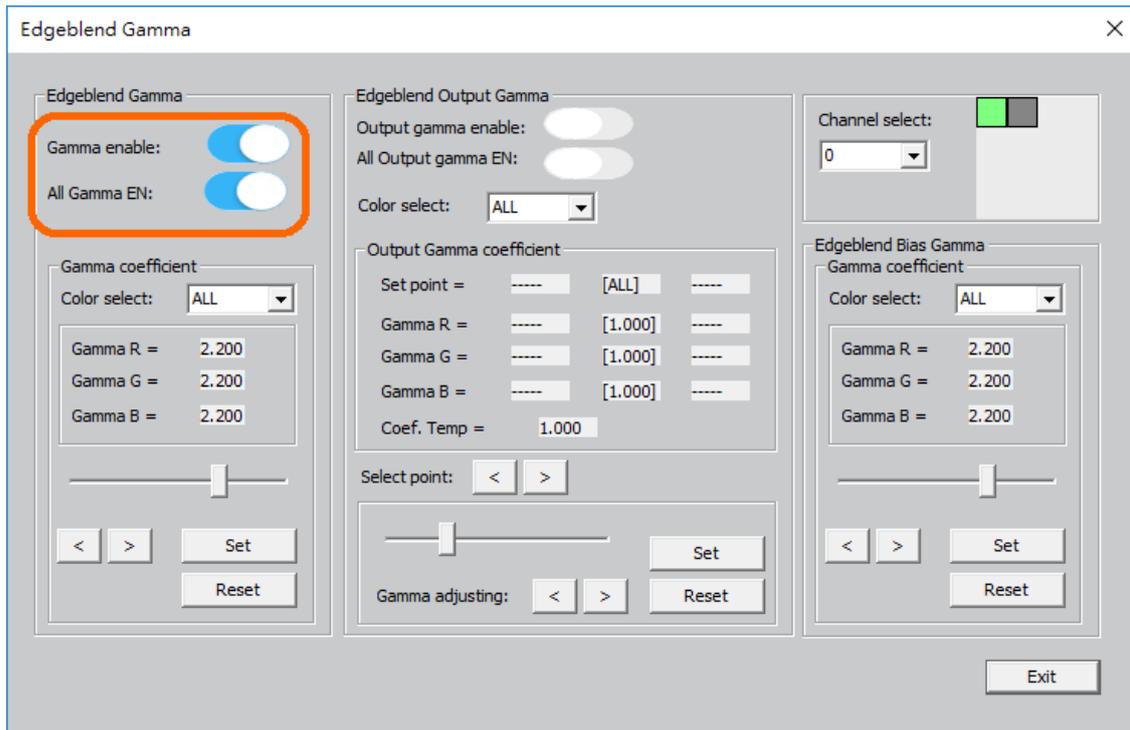


Figure 33: Quick Start – Edgeblend Gamma ON

Step8: Click the “Edge Blend Gain” button.

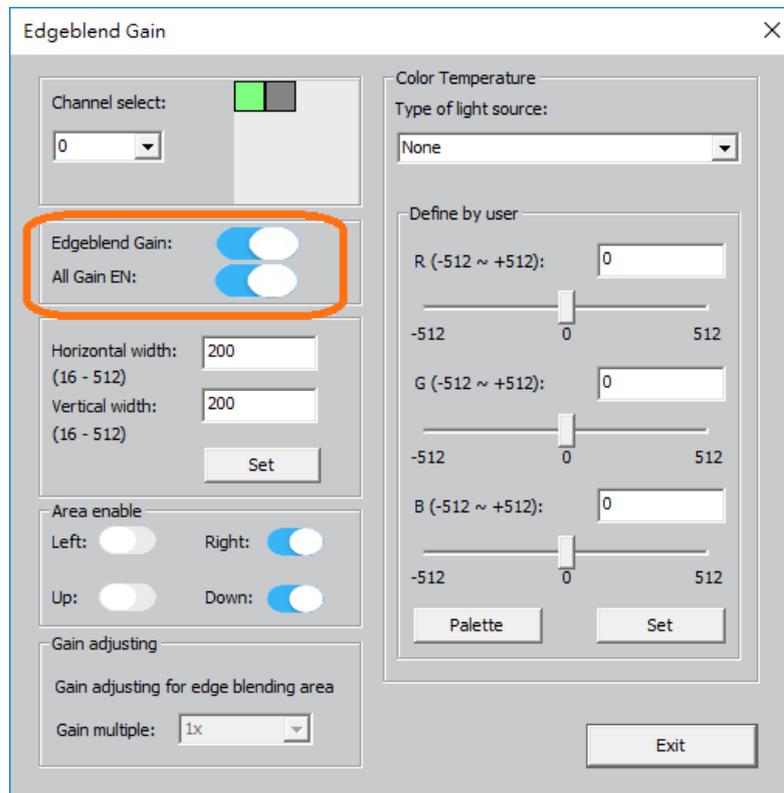


Figure 34: Quick Start – Edgeblend Gain ON

- Tick **Edgeblend Gain** as ON.
- Tick **All Gain EN** as ON.
- Exit this function.

And the image output is as following figure.

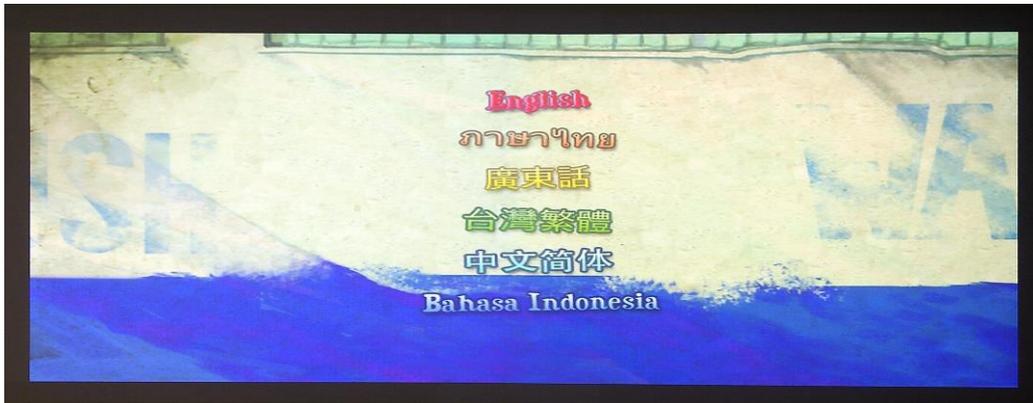


Figure 35: Quick Start – Complete Image

Step9: Excute the edgeblend bias function, if the image needs to be adjusted the brightness and colors.

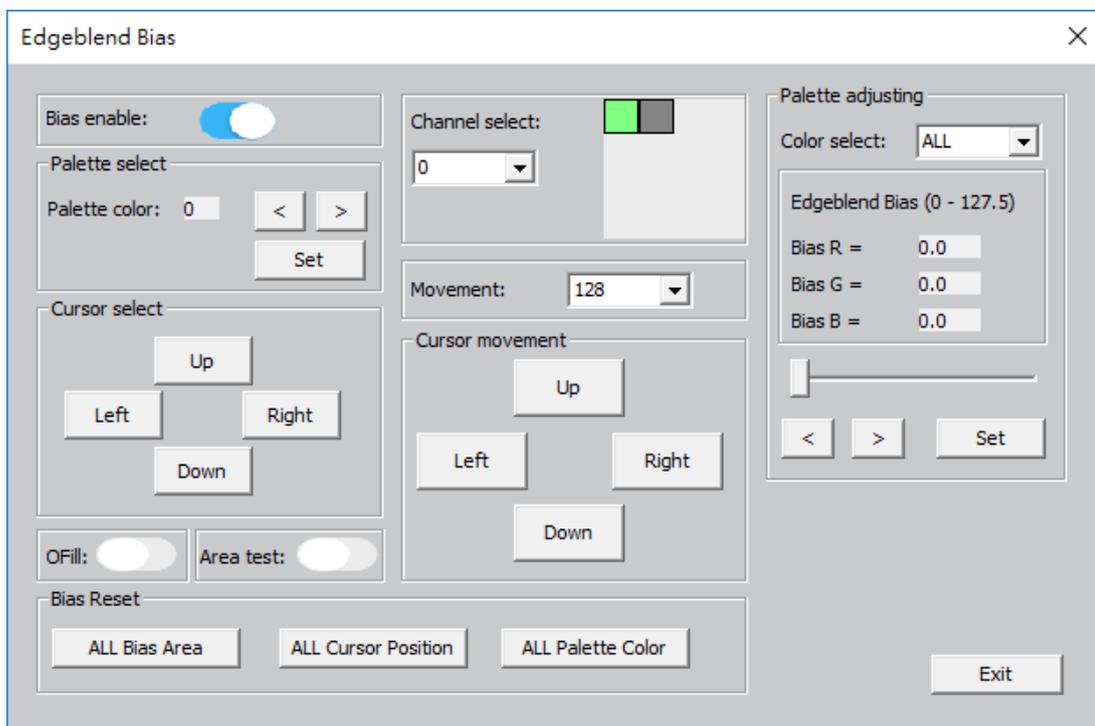


Figure 36: Quick Start – Edgeblend Bias

- Click the “**Edgeblend Bias**” button.
- Select a channel.
- Tick **Bias enable** as ON.
- Reset the **All Bias Area**.
- Tick **OFill** as ON.
- Select the target cursor and move it to the edge of edgeblending area.
- Select a palette color except “0” and press **Set** to save it.
- Tick **Area test** as ON to check the selected area. If the area is correct. Then Tick **Area test** as OFF.
- If the selected area is incorrect, do the above steps again.
- Use the “<” or “>” button or horizontal bar to adjust the bias of the selected area. Then press **Set** to save the setting.
- Tick **OFill** as OFF to play the final image.

## 6. TROUBLESHOOTING

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### **Q: No power**

- Make sure the DC power cord is securely connected to the device and to a power outlet.
- Plug into another electrical device into power outlet to verify that socket provides the correct voltage.
- Change another DC power cord.

### **Q: Power on but no screen image**

- Confirm the power cord is securely connected.
- Confirm the input and output HDMI cables are securely connected.
- Confirm the micro USB connection between all the equipment.
- If plug in three times, the screen still has no image, please return the device with the original box and all materials to the local supplier or factory.

### **Q: The IN and OUT LED indicators are not lit**

- Confirm the power cord is securely connected.
- Confirm the input and output HDMI cables are securely connected.
- If the connections of all equipment are okay, please return the device with the original box and all materials to the local supplier or factory.

### **Q: Cannot execute the program**

- Make sure the signal cable between PC and product is connected successfully and the correct CD driver is installed.

### **Q: The output image position is wrong**

- Make sure all settings of the parameters and devices are correct.
- Make sure the resolution and frequencies are supported by the product. If the

frequency is out of range, adjust the resolution.

**Q: The screen display abnormally**

- Make sure all the output and input machines are okay.
- Make sure the input and output signal cables are securely connected.
- Make sure the signal cables match the input and output signals.