Warping & Blending AP

Operation about AP

This AP provides three major functions including Warp, Edge Blending and Black Level.

- If the AP is already installed, please remove previous version before installing the new one.
- If the projector was closed, please reopen the AP again to continue adjust.
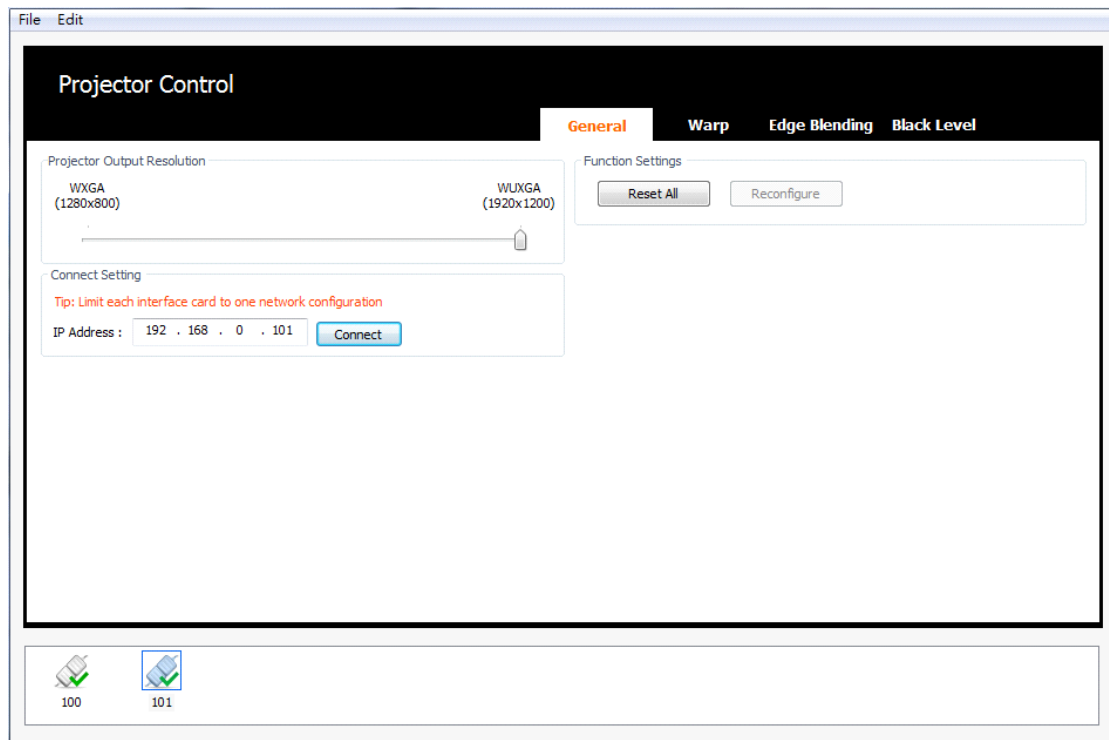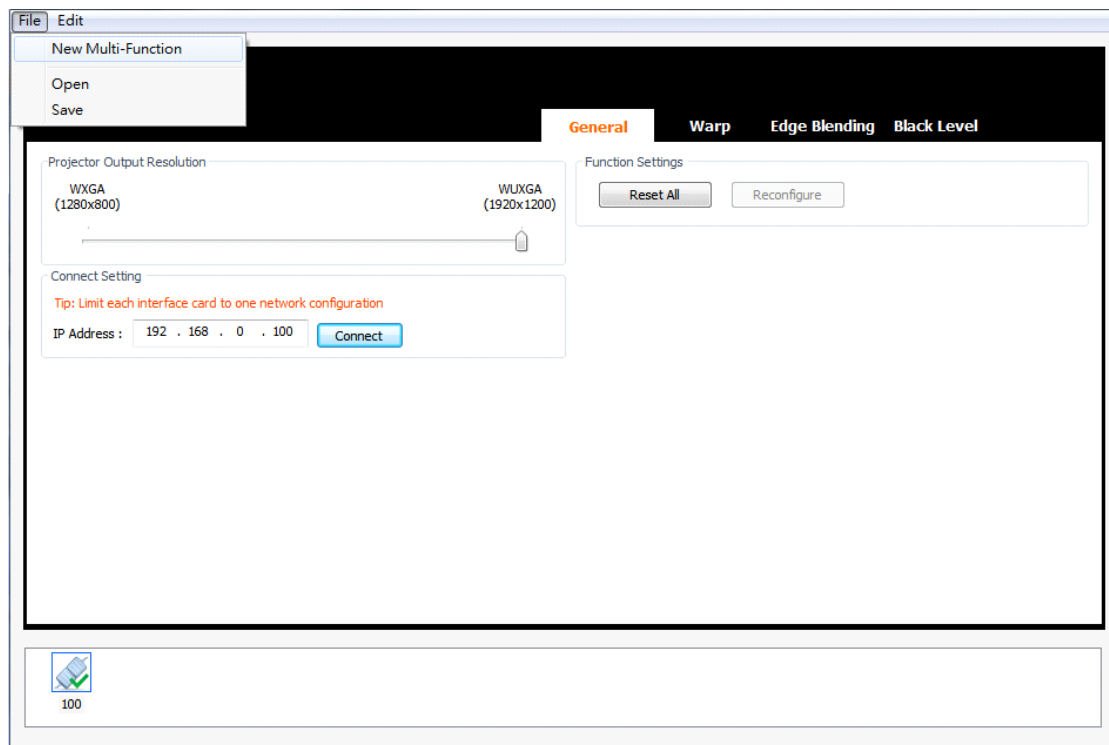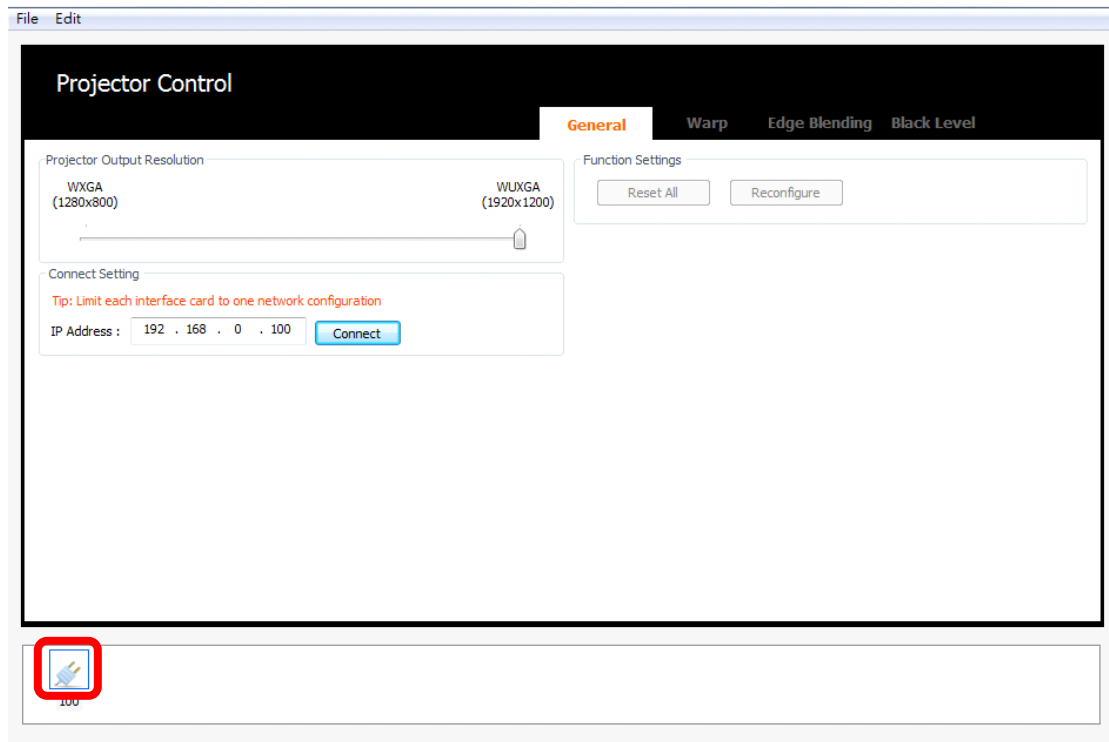
New Multi-Function

This function makes user able to operate a single projector.

You can enable this function in the menu 【File】 → 【New Multi-Function】.

If you want to connect another projector, please do 【File】 → 【New Multi-

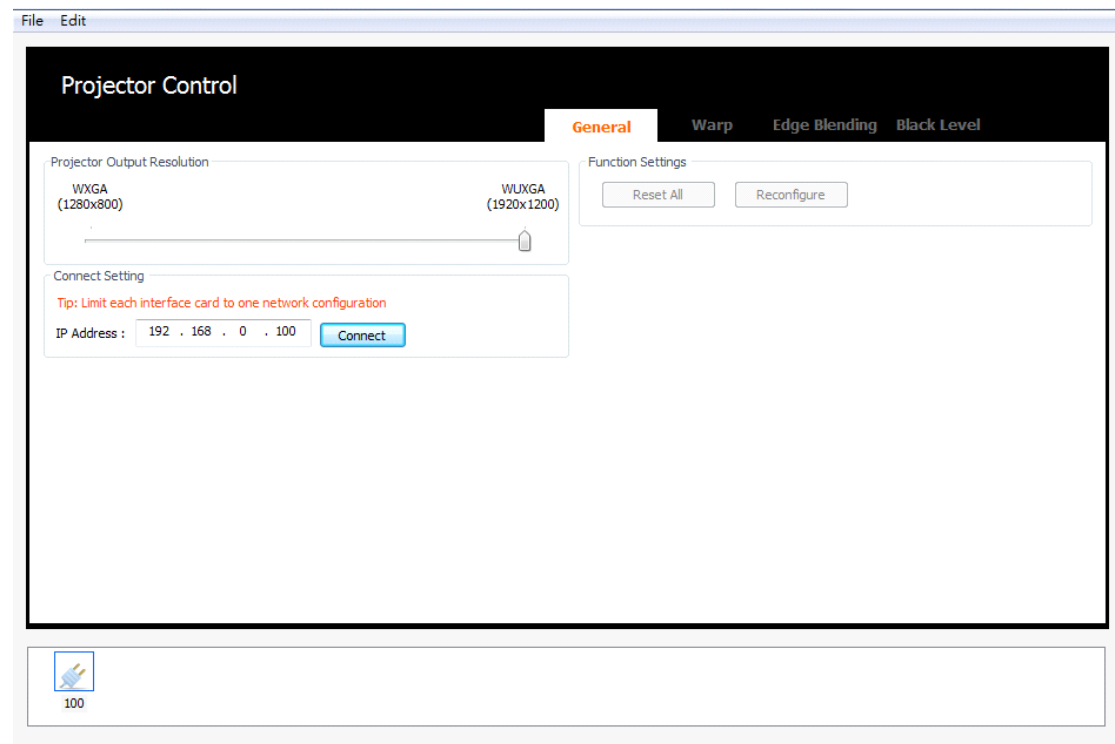Function】 again. You can use mouse to select a projector which you want to adjust.

Projector State

- Icon that indicating disconnection:

- Icon that indicating connection:

- Icon that indicating sleep:

- Selected channel will be in a blue box:

- Press "Ctrl + Shift + Delete" on the keyboard to delete the selected channel

General

Projector Output Resolution

- Please select the connected projector's native resolution.

Connect Setting

- After selected resolution, then edit IP address and connect with projector.

Function Settings

- "Reset All" button can reset all settings to default value including Warp, Edge Blending and Black Level. The button will enable after connected by New Multi-Function, then disable after user entry into Warp, Edge Blending or Black Level layer.
- "Reconfigure" button can apply saved settings from AP to projector. The button will enable if user open a saved file.

Warp
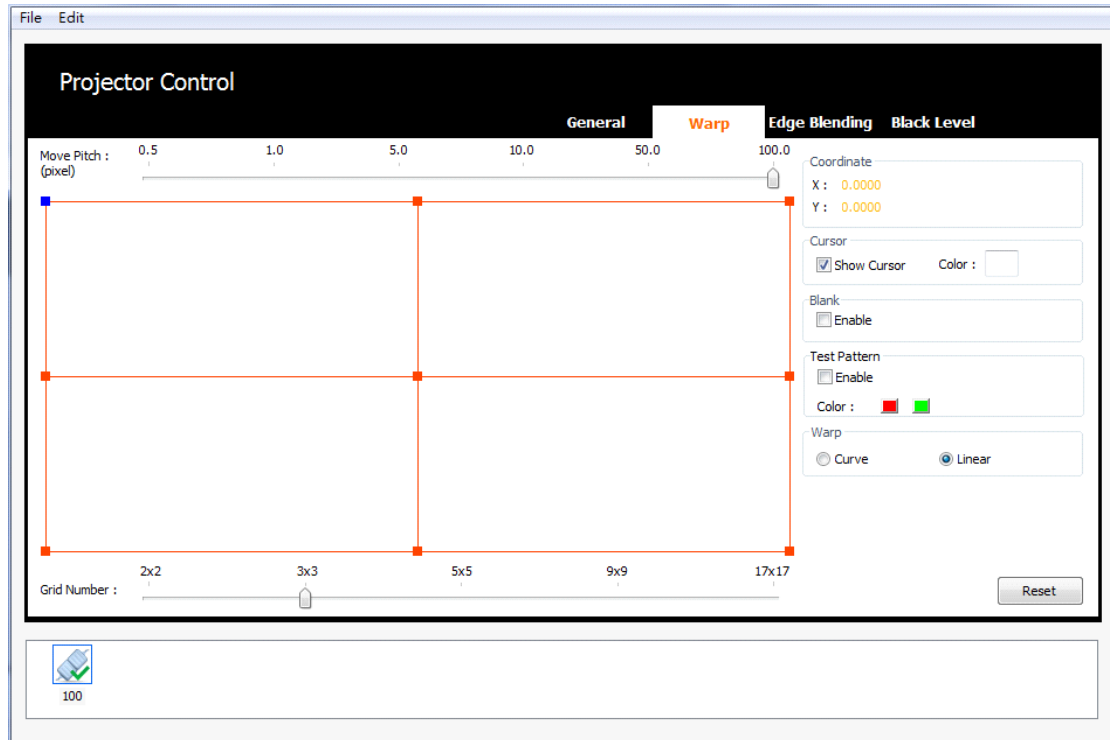
Move Pitch

- Current adjustment point move pixels once.

- Adjust the Move Pitch, use 【+】 and 【-】 on the key board or simply use mouse.

- Move Pitch default is 100 pixels.

Grid Number

- Type of warping adjustment points.

- Use 【Ctrl】 and 【+】, 【Ctrl】 and 【-】 on the key board or simply use mouse to increase/decrease the grid number, and to increase/decrease the cursor number at the same time.

- Grid Number default is 3x3 mode.

Coordinate

- Show the current adjustment point coordinate.

Cursor

- Show the adjustment points on projection screen.

- Click on the 【Color】 can change the cursor color.

Blank

- Projector output black pattern.

Test Pattern
- Show the grid pattern on projection screen.

Warp
- Warping adjustment type.
- The function hide if projector support new warping algorithm.

Select Warp Cursor
- One selected point can adjust warping.
- Use 【W】, 【A】, 【S】, 【D】 on the key board or simply use mouse. The selected cursor will be change into blue color.

Move Warp Cursor
- The selected point can move coordinate to do warping adjustment.
- Move cursor, use 【↑, ↓, ←, →】 on the key board.

Reset
- Click on the button will reset Warp settings.

Adjustment procedure:
- Choosing less grid number then increases the grid number step by step, so we usually use 2x2 to setup four corners at first.
- After using more grid number then choose less grid number will lose the early detail settings.
- Adjust the outer cursors as the red ones shown below, and then adjust the inner cursors as the green ones shown below.
- After adjusted inner cursors then adjusted outer cursors will lose the inner cursors settings.
- Using less grid number adjustment is easier to get homogeneous deformation.
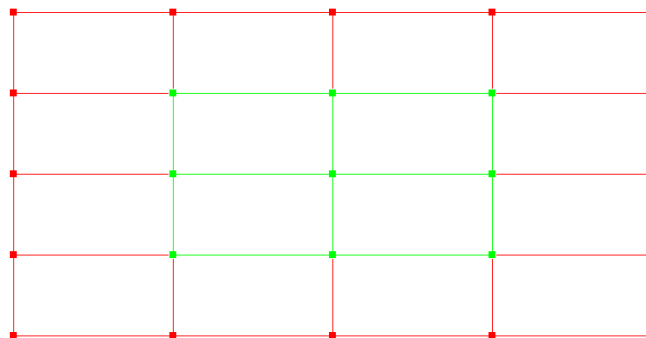
Test Pattern

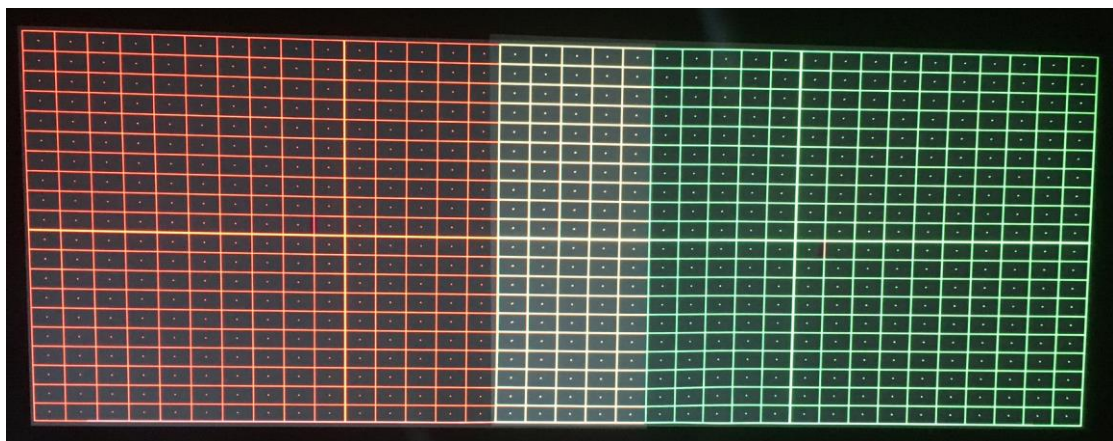- Test Pattern can help user to align the overlap area.

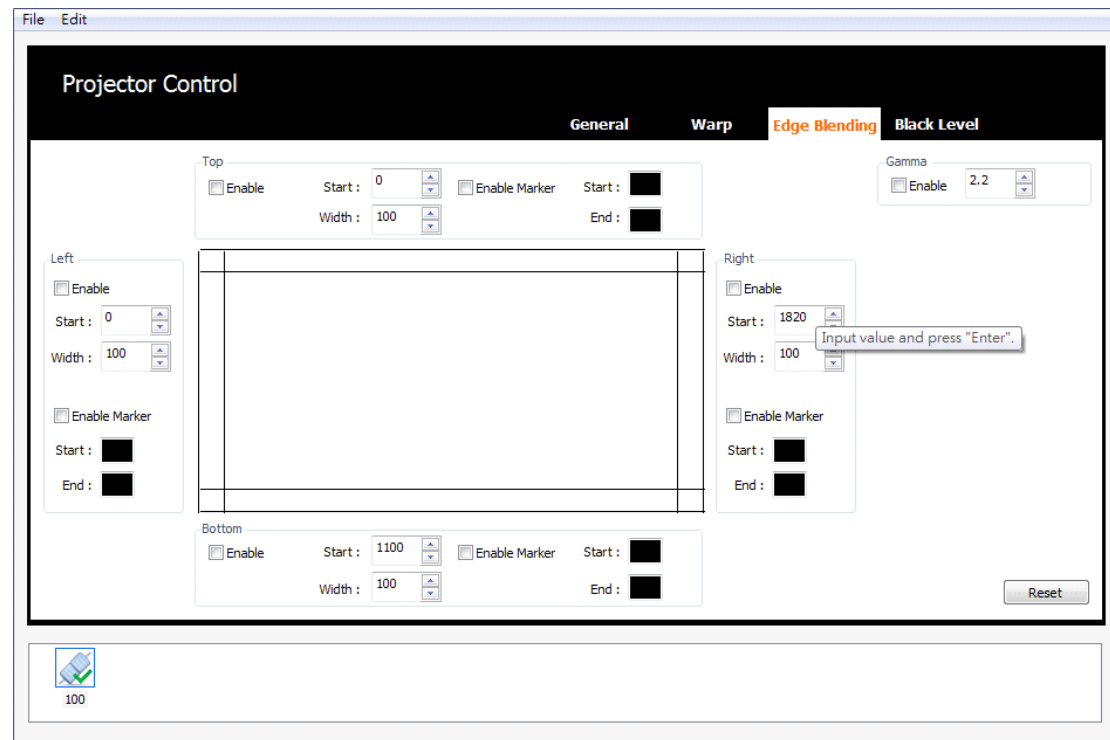- Use test pattern to speed up the warping process as shown below.
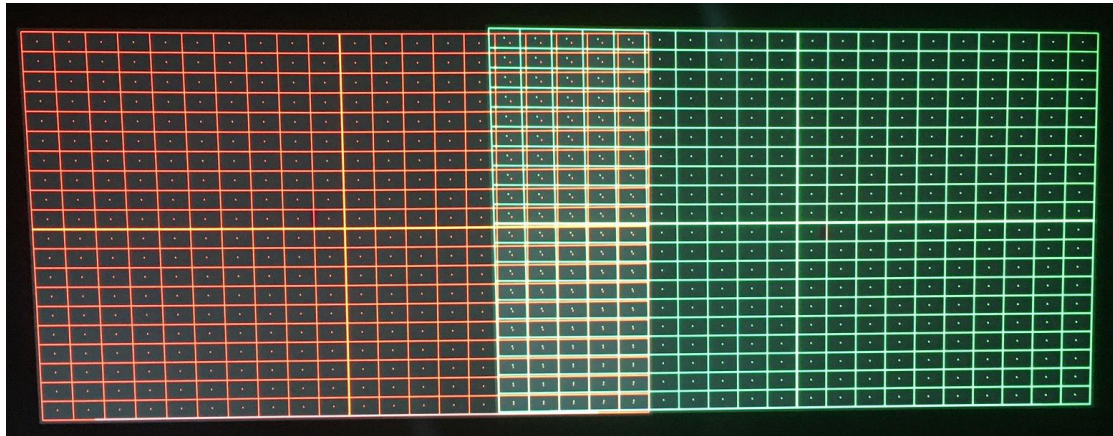
Before adjustment

Adjustment finished

Edge Blending

Top

- Start indicate the top vertical position of top blending area, default value is 0.
- Width indicate the range of top blending area, default value is 100 pixels.
- Marker Start indicate the top line of top blending area, default color is black.
- Marker End indicate the bottom line of top blending area, default color is black.
- Both Marker Start line and Marker End line can change color by mouse click.
- After edit Start or Width, it must press "Enter" key to apply.

Bottom

- Start indicate the top vertical position of bottom blending area, default value is Projector Output Resolution's height minus 100.
- Width indicate the range of bottom blending area, default value is 100 pixels.
- Marker Start indicate the top line of bottom blending area, default color is black.
- Marker End indicate the bottom line of bottom blending area, default color is black.
- Both Marker Start line and Marker End line can change color by mouse click.
- After edit Start or Width, it must press "Enter" key to apply.

Left

- Start indicate the left horizontal position of left blending area, default value is 0.
- Width indicate the range of left blending area, default value is 100 pixels.
- Marker Start indicate the left line of left blending area, default color is black.
- Marker End indicate the right line of left blending area, default color is black.
- Both Marker Start line and Marker End line can change color by mouse click.
- After edit Start or Width, it must press "Enter" key to apply.

Right

- Start indicate the left horizontal position of right blending area, default value is Projector Output Resolution's width minus 100.
- Width indicate the range of right blending area, default value is 100 pixels.
- Marker Start indicate the left line of right blending area, default color is black.
- Marker End indicate the right line of right blending area, default color is black.
- Both Marker Start line and Marker End line can change color by mouse click.
- After edit Start or Width, it must press "Enter" key to apply.

Gamma

- Gamma value can control the gamma curve of the blending area.
- Default of Gamma is 2.2.
- After edit Gamma value, it must press "Enter" key to apply.

Reset

- Click on the button will reset Edge Blending settings.

Adjustment procedure

- Setting the blending width, the start position let the edge blending marker superimposed on each other.
- Whether the blending area matches another or not also depends on the result of warping adjustment.
- Setting the same blending gamma value to the blending area of adjacent projectors.

Enable Marker

- Marker can help user to align the overlap area.

- Set the start position and the corresponding width to speed up the blending process as shown below.

Before adjustment

Adjustment finished

Blending Adjustment for Multi Projectors

- Please check projector's native resolution and input signal segment pixels.

- Edge blending adjust start position and correction width to match input signal segmentation.

- Projector adjust ZOOM size and LENS offset for blending area overlap.

- Warping fine-tune with Test Pattern function.

- Enable Edge Blending and set same Gamma value for each projector.

Black Level

If projector output dark content, the blending area will visible.
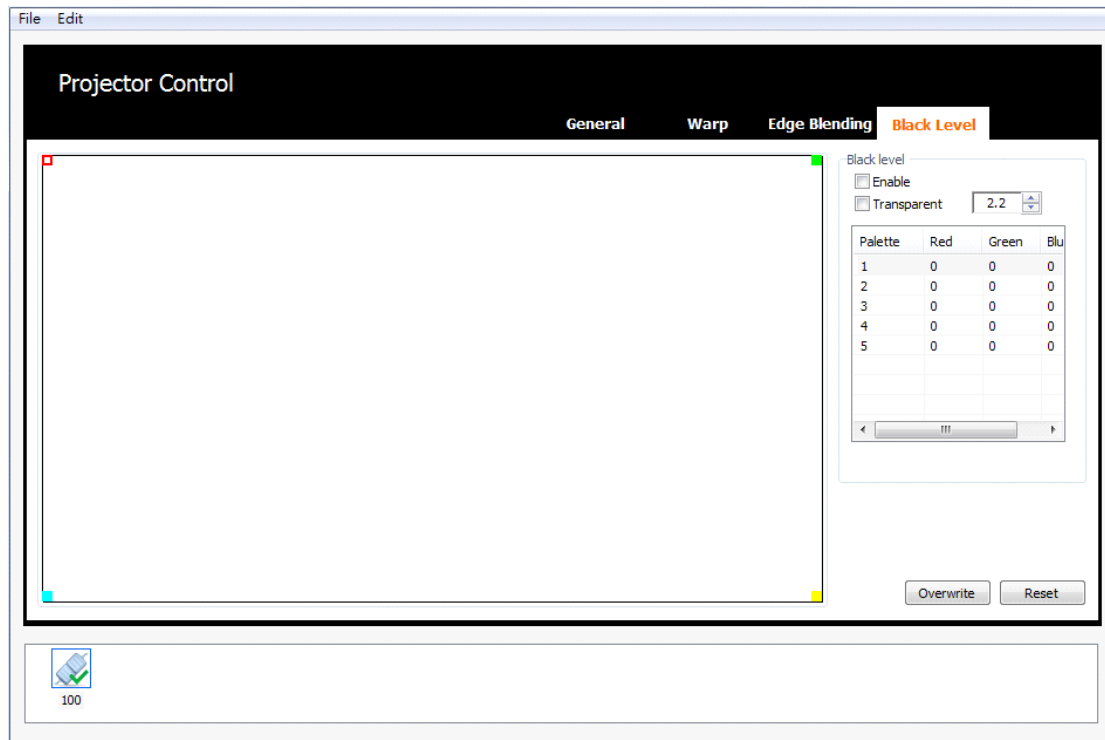Black Level can patch palettes for projection screen homogeneous.

Before Black Level adjustment

After Black Level adjustment

Canvas

- Black level only support rectangular shape, there are four points to determine the rectangular shape.
- Default color of upper left point is red.
- Default color of upper right point is green.
- Default color of lower left point is cyan.
- Default color of lower right point is yellow.
- The select point will turn to hollow.
- Select the control point, use 【W】, 【A】, 【S】, 【D】 on the key board or simply use mouse.
- Use mouse to drag and put the control point to the desired position.
- Use 【↑, ↓, ←, →】 on the key board to process fine tuning.

Transparent

- Default transparent is 2.2.

Palette

- Black Level support five palettes, default color is black.
- Click on a row of palette table will show palette dialogue, the dialogue can pick the palette color.
- The selected palette will turn to light gray background.

Overwrite

- Click on the button can paint the selected palette on canvas rectangular area.

Reset

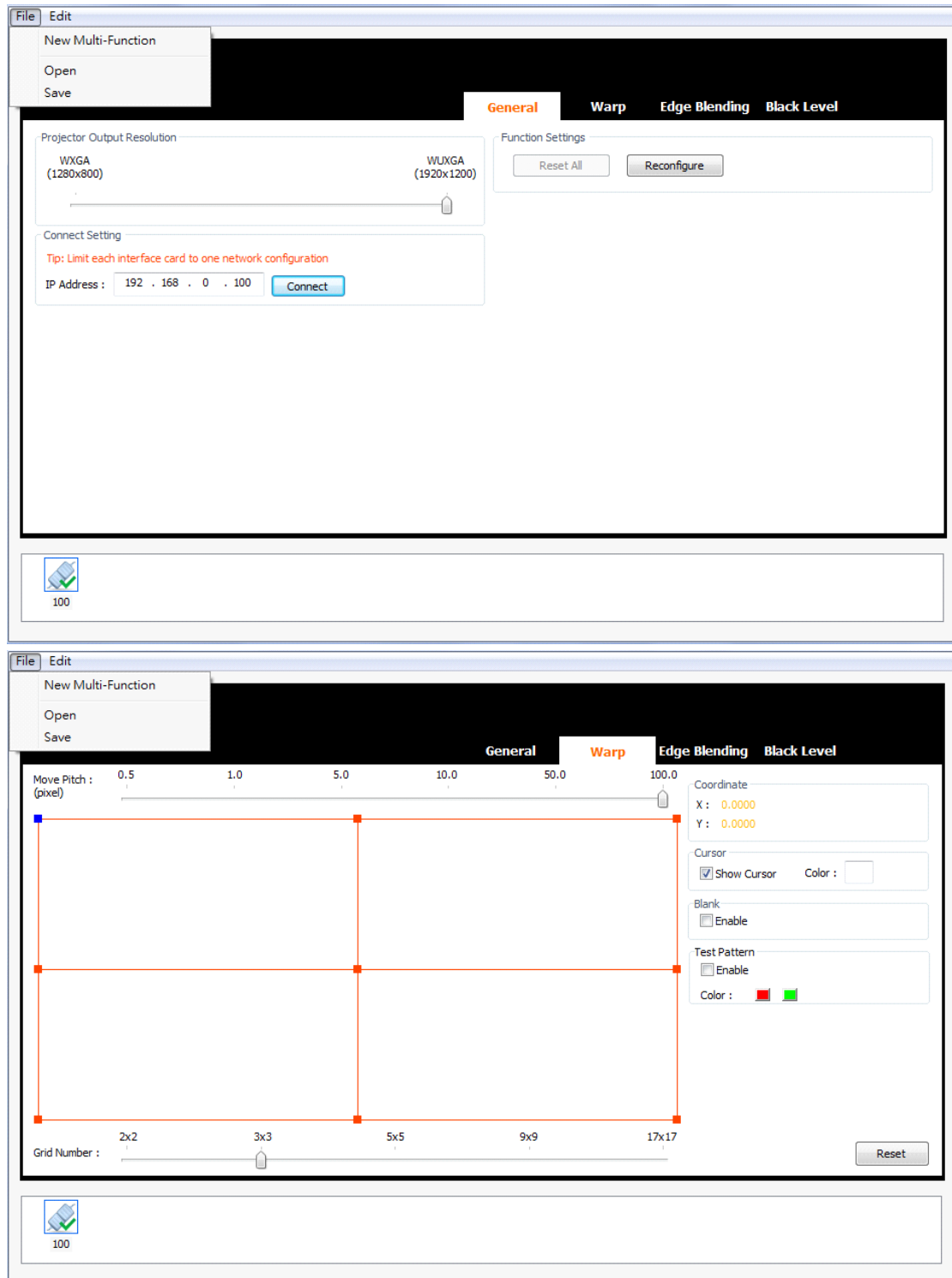- Click on the button will reset Black Level settings.
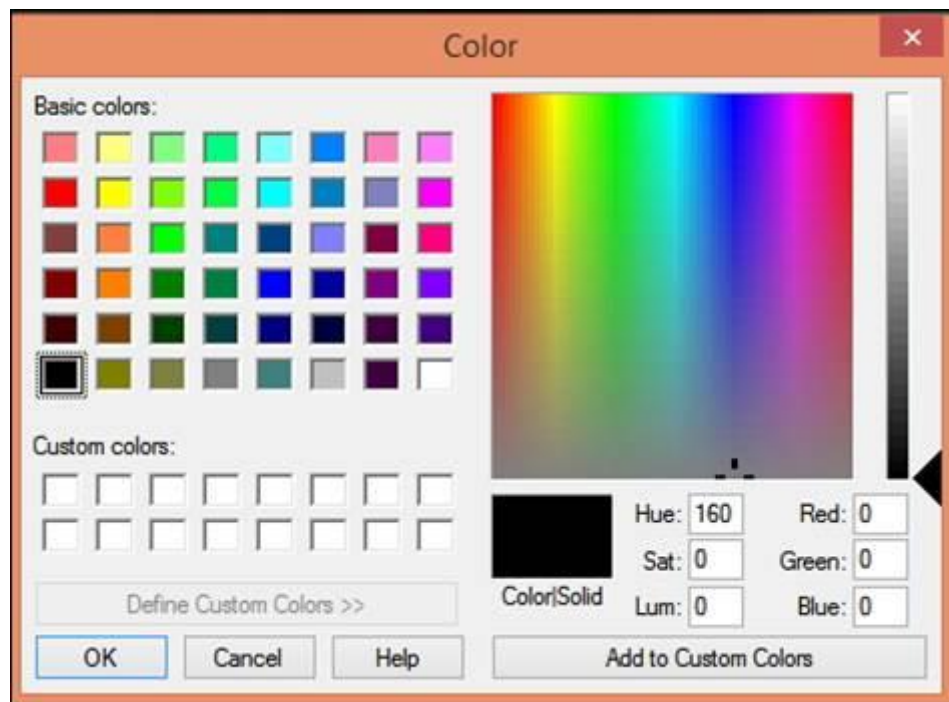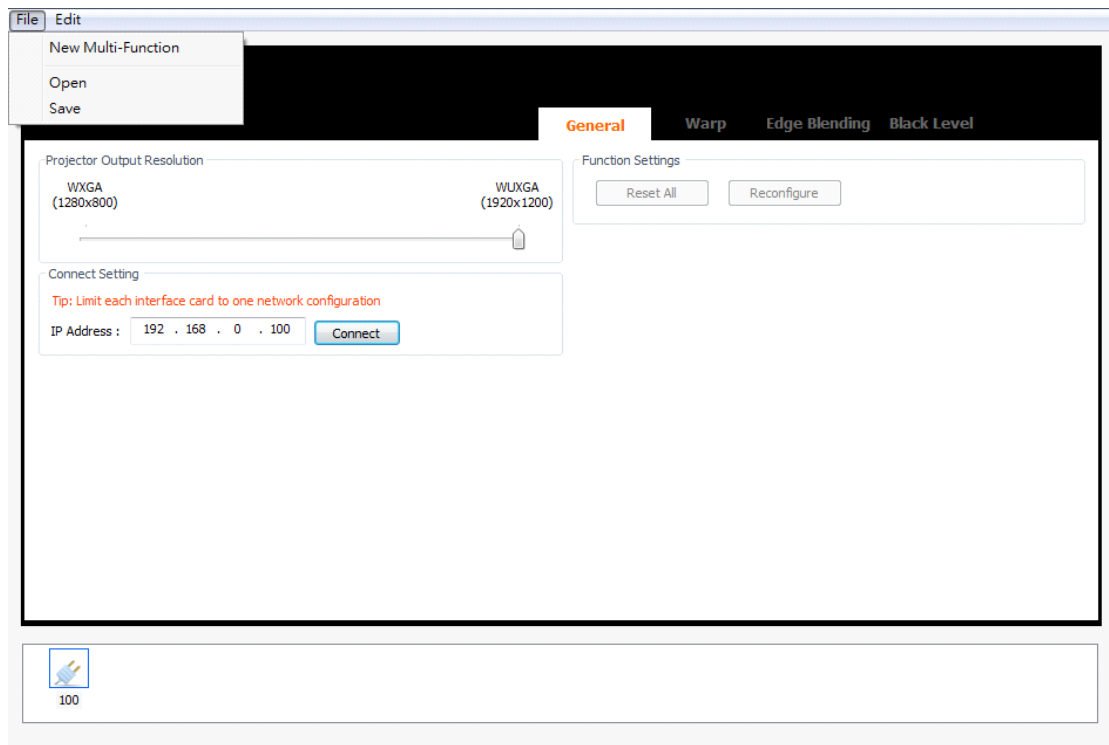

Palette Dialogue

Save/Open

This function makes user able to save the current settings for each projector and open the setting for them after power on next time.

User can enable this function in the menu 【File】→【Open】/【Save】.

User can save all the settings after adjustment by clicking on 【Save】.

User can apply the previous settings by click on 【Open】.

- Edit IP address and connect with projector.

- Click on【Reconfigure】to apply the previous settings.