

# Basic Operations

## The dongle storage cover

This projector has a cover on the bottom where you can store so-called “dongles” such as casting devices and digital media players.



### Note

- ❖ Due to the size of the dongle and the way the cables are routed, it may not be possible to store it inside the cover.
- ❖ The device that has been confirmed to be able to be stored is the Google Chromecast (3rd generation).

Since the unit is placed upside down during work, prepare a spacer that is 3.5cm-4.0cm thick, 15cm wide or more, and 5cm-10cm deep to prevent the unit from tilting due to its inclined part. Make sure that the spacer is strong enough. If the spacer is made of a hard material, wrap it in a cloth to prevent scratches.

### How to store the dongle inside the cover

- 1) The storage compartment is on the bottom of the unit, so you will need to place the unit upside down.
- 2) Prepare a flat table that is large enough to place the projector on and work on. (It is recommended that there be a margin of 10cm in both length and width beyond the size of the projector.) You will be working on this table, so make sure it is strong enough.
- 3) Place a sheet of cloth or similar on the table that is larger than the projector to prevent scratches.
- 4) Turn off the power to the projector and unplug the power cable. Also, unplug all connected signal cables.
- 5) Place the projector upside down on the sheet. The front of the device is inclined, it may be unstable when placed on the sheet, so please be careful.

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- 6) Place the prepared spacer on the front of the projector. At this time, make sure that the projector does not tilt or the spacer does not fall out by applying force to the unit.

## Note

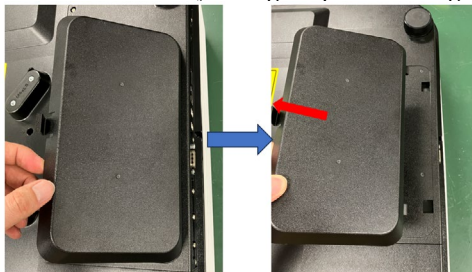
- Make sure that the bottom surface of the projector is not tilted when placed between the spacer. A dongle placed on the bottom may slip off and be damaged.



- 7) Hook your finger into the tab on the cover and push and lift in the direction of the arrow to remove the cover.



- 8) The cover can be removed by lifting it up and sliding it off.



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## Note

- ❖ Depending on the shape of the dongle, it may not be possible to store it inside the cover.
- ❖ If you use the USB power terminal(5V2A) of this projector to power the dongle, make sure that the dongle's power supply voltage is 5V and the current is 2A or less. Even if the power supply voltage and current are compatible, it may not actually work. In such cases, use an AC adapter.
- ❖ Before closing the dongle cover, make sure there is enough space around the dongle and that there is no unnecessary strain on the cable.
- ❖ When closing the cover, do so slowly and without using excessive force. Closing the cover with too much force may damage the dongle.

- 9) Insert the dongle's HDMI connector into the HDMI1 terminal.  
(If you insert the connector into the HDMI2 terminal, it will interfere with the claw on the cover and cannot be used.)  
Place the dongle on top of the bottom of the projector. Connect the dongle's power supply.



- 10) Insert the two claws of the cover into the holes on the bottom of the projector.



- 11) There is a gap on the underside of the cover, through which the dongle cable is threaded.

Close the cover, making sure that no force is applied to the dongle.

Make sure it locks into place with a click.



- 12) Remove the spacer, return the unit to its normal orientation and place it where you want to use it.

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13) Connect the power cable and signal cable and turn the power on.

## Caution

### Note

- ❖ To display video from the dongle, select HDMI1 as the input.

- Please use the dongle cover and power terminal (5V2A) at your own risk. RICOH is not responsible for any problems that may occur when using the dongle due to the use of the dongle cover or power terminal (5V 2A).
- Placing the dongle inside the cover may cause the dongle to overheat. If the dongle becomes unstable, remove it from the cover and use it.
- If the dongle is placed inside the cover, the dongle's wireless communication may become unstable. If this occurs, remove the dongle from the cover and use it.
- Radio waves from the dongle may cause the projector's wireless communication to become unstable. If this occurs, remove the dongle from the cover and place it away from the projector.
- Do not move the projector with the dongle still inside the cover as this may cause the dongle to break.
- Be careful not to allow clips or other metal objects to enter the hole where the cover's fingernail used to be.  
If metal should enter, never turn on the power.  
Please request repairs as soon as possible.
- Please keep the cover on at all times except when installing or removing the dongle.
- If the cover is broken or lost, cover the holes where the cover's tabs were with insulating tape or something similar. Then, request repairs immediately.

## The Menu Screen (OSD)

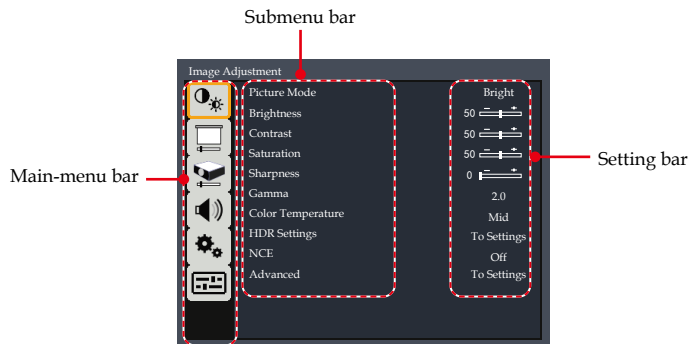
*The Projector has a multilingual the Menu Screen that allows you to make image adjustments and change a variety of settings*

### How to operate the Menu

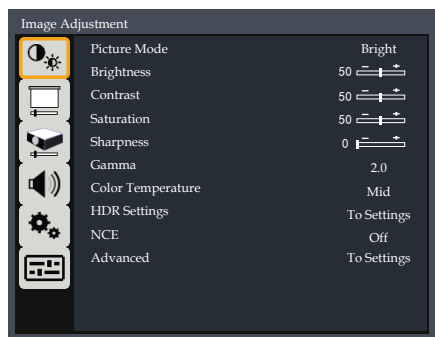
1. To open the Menu, press "Menu" on the control panel or remote control.
2. When OSD is displayed, use ▲ ▼ buttons to select any item in the main menu. While making a selection on a particular page, press ► or "Enter" button to enter sub menu.
3. Use ▲ ▼ buttons to select the desired item in the sub menu and press the Enter button to view further settings. Adjust the settings by using ◀▶ button or ▲ ▼ button.
4. Select the next item to be adjusted in the sub menu and adjust as described above.
  - When there is no next menu in the submenu, press the ◀▶ buttons to set related options.
  - When there is a next menu in the submenu, the screen will display the text "To Settings". Press the ▲ ▼ buttons to set related options. If the next submenu contains option settings, press the Enter button to proceed with the next submenu option setting (as above).
5. Press the Menu button to return to the previous menu setting.
6. Press the ◀▶ buttons to change or adjust the setting and press "Enter" button to confirm the change.
7. After exiting, press the Menu button again, the menu will close, and the projector will automatically save the new settings.

#### Note

- ❖ If no button operation is made for approximately 30 seconds, the Menu will be closed automatically.



# User Settings



## Image Adjustment

### Picture Mode

#### Note

- ❖ When [Picture Mode] is set to [Bright], [Constant Luminance] cannot be selected for [Laser Power Mode]. Also, when [Constant Luminance] is selected for [Laser Power Mode], [Bright] cannot be selected for [Picture Mode].

There are factory presets optimized for various types of images. The available options:

- ▶ **Bright:** Mode for emphasizing brightness.
- ▶ **Standard:** Mode for optimizing the balance between brightness and color reproduction.
- ▶ **Vivid:** Enrich the details of the picture, make the picture more vivid.
- ▶ **Natural:** Images suitable for natural portraits.
- ▶ **DICOM SIM :** In this image mode, the images are adjusted to simulate the DICOM format. DICOM is a global standard for storing and transmitting medical images. However, this mode only simulates these formats, so the image maybe projected differently from the original DICOM format. It should not be used for actual diagnoses.

### Brightness

Adjust the brightness of the image.

- ▶ Press the ◀ button to darken image.
- ▶ Press the ▶ button to lighten the image.

### Contrast

The contrast controls the degree of difference between the lightest and darkest parts of the picture. Adjusting the contrast changes the amount of black and white in the image.

- ▶ Press the ◀ button to decrease the contrast.

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- ▶ Press the ► button to increase the contrast.

## Saturation

Adjust the color saturation of the image.

- ▶ Press the ◀ button to decrease the amount of color in the image.
- ▶ Press the ► button to increase the amount of color in the image.

## Sharpness

Adjust the sharpness of the image.

- ▶ Press the ◀ button to soften the image.
- ▶ Press the ► button to sharpen the image.

## Gamma

Adjust the gamma to adjust the brightness of the projection image. Choose the right gamma values according to different projection environments to adjust the best picture brightness effect.

The available options: 1.8/2.0/2.2/2.4/Shine.

- ▶ Shine: The midtones of the image are brightest.
- ▶ 2.4: The midtones of the image are darkest.

## Color Temperature

Use this function to set the color temperature of the image. The available options: Low/Mid/High/Native.

## HDR Settings

Use this function to adjust the HDR (High Dynamic Range) related settings.

- ▶ HDR: Enable or disable the HDR function.
  - Auto: Enable HDR function automatically.
  - Off: Disable HDR function.
- ▶ EOTF: Adjust the dynamic range of the displayed image.
  - Low: The image is with the low contrast.
  - Mid: The image is with the middle contrast.
  - High: The image is with the high contrast.

# User Settings

## NCE

### Note

- ❖ When the NCE Settings function is set to [On], the NCE settings can be valid.

Adjust the advanced color adjustment to adjust the quality of the projection image. You can adjust the different colors by adjusting saturation, hue and gain values.

- ▶ On: Enable this function.
- ▶ Off: Disable this function.

## Advanced

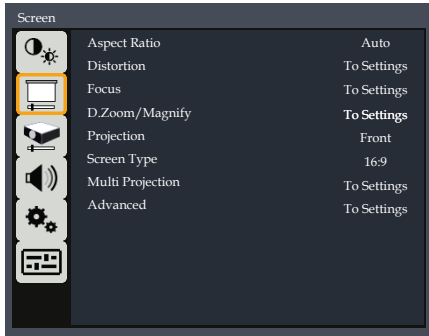
Select this function for users to adjust the color parameters of the picture more accurately to obtain the best image effect.

### Note

- ❖ When [Image Adjustment] > [Picture Mode] is set to other than [Bright], [High Contrast Mode] is set to [Off].
- ❖ When [High Contrast Mode] is set to other than [Off], [Laser Power Mode] is set to [Constant Power] and [Laser Power] is set to [100] in [Options] > [Laser Settings].

- ▶ Wall Color Mode: Obtain an optimized screen image according to the wall color. The available options: Off/Light Yellow/Light Blue/Pink/Dark Green.
- ▶ NCE Settings: Adjust the quality of the projection image by adjusting the saturation, hue and gain values of different colors (RGBCMYW). The available options: Red/Green/Blue/Cyan/Magenta/Yellow/White/Reset.
- ▶ High Contrast Mode: Switches the control of the light source according to the input video signal. The available options: Off/LD Cutoff/Normal.
  - Off.
  - LD Cutoff: Turns off the light source when a black signal is input. The brightness of the light source is automatically controlled according to the input video.
  - Normal: Automatically controls the brightness of the light source according to the input video.





## Screen

### Aspect Ratio

Use this function to choose your desired aspect ratio of the projected image.

- ▶ Auto: Selects the appropriate display format automatically.
- ▶ 4:3: Displays 4:3 aspect ratio.
- ▶ 16:9: Displays 16:9 aspect ratio.
- ▶ 16:10: Displays 16:10 aspect ratio.

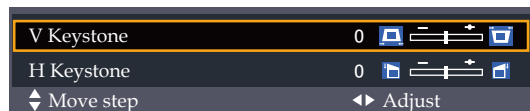
### Distortion

Adjust image distortion caused by tilting the projector.



- ❖ H/V Keystone and geometric corrections make the image less clear than it was before correction. This is due to digital signal processing and is not a malfunction.
- ❖ Only one function in [Distortion] can be applied at the same time.

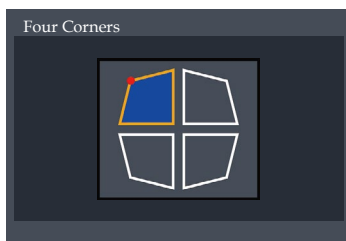
- ▶ H/V keystone: Selects this function to correct distortion when projecting from an angle to the screen..



Use the ▲, ▼ keys to select Horizontal/Vertical keystone correction and the ◀, ▶ keys to adjust.

- ▶ Four Corners: Select this function to correct the four corners of the image to match the screen.

# User Settings

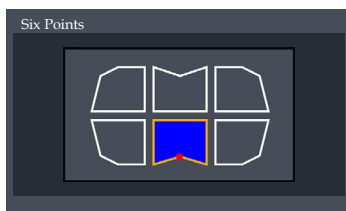
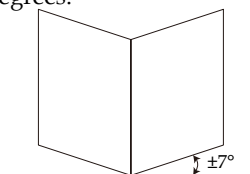


## Note

- ❖ [Six Points] can be used when [Aspect] and [Screen Type] are set to [16:9] and [D.Zoom/Magnify] is disabled.

Press the Enter button to select the corner and press the ▲▼◀▶ button for adjustment.

- ▶ Six points: Corrects distortion when projecting on a folded screen as shown below. The range of fold angle that can be corrected is  $\pm 7^\circ$ .

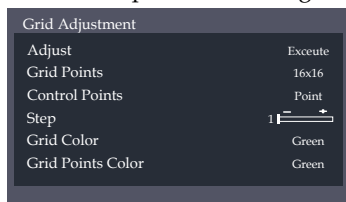


Press the Enter button to select the corner and press the ▲▼◀▶ buttons for adjustment.

## Note

- ❖ [Grid adjustment] can be used when [Aspect] and [Screen Type] are set to [16:9] and [D.Zoom/Magnify] is disabled.

- ▶ Grid adjustment: Select this function to correct slight distortions that occur in parts of the image.



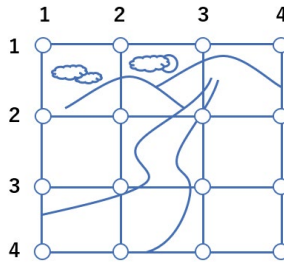
- Adjust: Select this function to adjust the local points of the projected image .

# User Settings

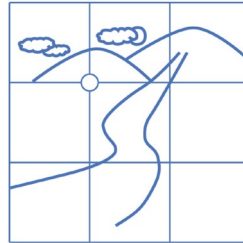
## Note

- ❖ If [Grid points] is changed, grid adjustment value will be reset.

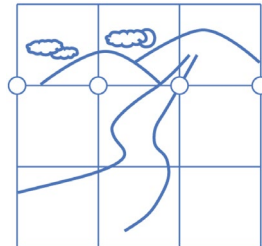
- Grid Points: Selects this function to set the number of grid point both horizontally and vertically.



- Control Points: Selects this function to set the adjustment way.



Point



H. Line

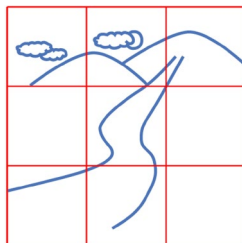


V. Line

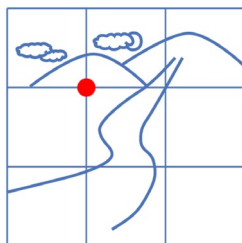
- Step: The ability to set the amount of pixel movement when adjusting the grid.

# User Settings

- Grid Color: Selects this function to change the color of the grid.



- Grid Points Color: Selects this function to set the magnitude of the adjustment.



## Note

- ❖ [D.Zoom/ Magnify] function is available only when chosen the [HDMI1], [HDMI2] and [HDBaseT] as the input signal.

- ❖ H.(V.) Shift adjustment range depends on the H.(V.) Zoom setting value. And When H.(V.) Zoom is set to 100, H.(V.) Shift cannot be adjusted.

- ❖ H.Zoom/V. Zoom/H.Shift/V. Shift have values that cannot be set. Such values are not set during adjustment and are skipped.

- ▶ Reset: Select this function to make adjustment value back to the factory default.

## Focus

Adjust the focus according to the picture displayed on the screen to make the picture fresher. Long press ◀ or ▶ button to adjust the value (For more information, see [page 51](#)).

## D.Zoom/ Magnify

Use the D.Zoom/ Magnify function to adjust the size or position of a projected image. Use the ◀ or ▶ button to adjust the value.

- ▶ H. Zoom: Selects this function to magnify or reduce the size of the projected image horizontally.
  - Press the ▶ button to magnify the image size .
  - Press the ◀ button to reduce the image size.
- ▶ V. Zoom: Selects this function to magnify or reduce the image size vertically.
  - Press the ▶ button to magnify the image size .

- Press the ◀ button to reduce the image size.
- ▶ H. Shift: Selects this function to shift the position of the projected image horizontally.
  - Press the ▶ button to shift the image to the right.
  - Press the ◀ button to reduce the image to the left.
- ▶ V. Shift: Selects this function to shift the position of the projected image vertically.
  - Press the ▶ button to shift the image up.
  - Press the ◀ button to reduce the image down.

## Projection

Use this function to select the projector mode, depending upon how the projector is mounted.

- ▶ Normal: This is the default selection. The image is projected directly onto the screen.
- ▶ Rear: When selected, the image will appear upside down.
- ▶ Ceiling : When selected, the image will appear reversed.
- ▶ Rear Ceiling: When selected, the image will appear reversed in upside down position.

## Screen Type

The user can choose the appropriate screen ratio for the projection. The available options: 4:3/16:9/16:10.

## Multi Projection

This projector has built-in multi projection function, in which two projectors are lined up horizontally and project one large image.

- ▶ Multi Projection: Set [On] to enable built-in Multi Projection function.
- ▶ Position: Set the projector position. [1]:Left [2]:Right.
- ▶ Edge Blending
- ▶ Blending:
  - Control: Select [On] to darken the edges of the overlapping area.
  - Width:Set Blending area width.

# User Settings

## Note

- ❖ When using Multi projection function, please set [Image Adjusting] > [Advanced]>[High Contrast Mode] to [Off].
- ❖ Make sure that the [Image Adjustment] and [Options]>[Laser settings] of the two projectors have the same settings.
- ❖ The Overlapped area of [Black Level] adjustment will not match the actual overlapped area when [Four Corners (M.P.)] is adjusted. This is a limitation of this projector.

- Pattern: Displays Blending pattern. If any key is pressed, it will disappear.

### ▶ Four Corners (M.P.)

- Adjust: Adjust Four corner adjustment for Multi Projection.
- Reset: Reset Four corner adjustment for Multi Projection.

### ▶ Black Level

- Auto Test Pattern: When set to [On], the test pattern will be displayed when adjusting the Black level.

### ▶ Non-overlapped black level

- Interlocked: When set to [On], only the brightness (white) can be adjusted.
- White: Adjust the brightness of Non-overlapped area black level.
- Red/Green/Blue: Adjust the color of Non-overlapped area black level.

### ▶ Overlapped Black Level

- Interlocked: When set to [On], only the brightness (white) can be adjusted.
- White: Adjust the brightness of Overlapped area black level.
- Red/Green/Blue: Adjust the color of Overlapped area black level.

### ▶ Reset

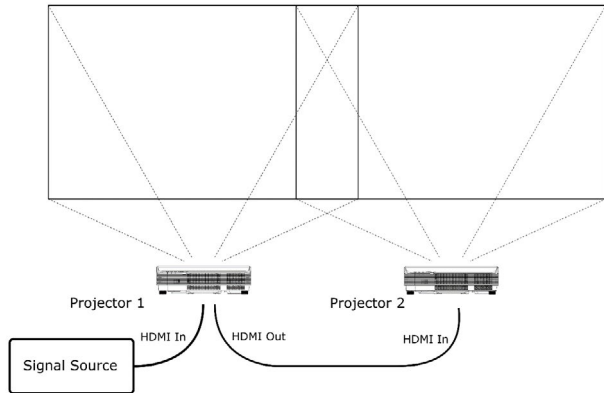
- Reset settings related to Edge Blending to factory defaults.

## How to set the Multi projection.

- Preparations:

Input the same image to the two projectors. This unit has an HDMI output terminal, so it is convenient to connect it as shown in the diagram below.

# User Settings



The part of the image output from the signal source using two projectors, surrounded by the red frame shown below, is displayed.



The image projected from each projector is shown below. The overlapping areas of both projectors become darker toward the edges due to the blending function, making the overlapping areas appear natural.



-Settings and Adjustments

# User Settings

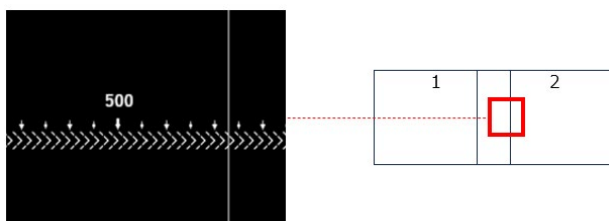
- Install two projectors side by side. It is recommended that at least 20% of the width of the projectors overlap.

When installing, adjust the projectors so that they are oriented squarely to the screen. Since this is an ultra-short-throw projector, even a slight tilt will not result in a rectangular screen.

It is relatively easy to adjust the position and tilt of the projector by attaching a piece of paper with a rectangle of the desired projection size drawn on it to the screen in advance and adjusting the position and tilt of the projector to match the rectangle.

- Set **[Screen] > [Multi Projection] > [Multi Projection] > [On]** in the menu system.
- Set **[Screen] > [Multi Projection] > [Position]**. Set the left projector to [1] and the right projector to [2] in the menu system.
- Open **[Screen] > [Multi Projection] > [Edge Blending] > [Pattern]** to display the Blending Pattern on both projectors.

This Blending Pattern can be used to measure the width of the area where the images from the two projectors overlap. The image below shows the red frame of the projected image of the two projectors, where the scale displayed from the right projector overlaps the outer frame of the left projector. From this image, the position of the intersection of the scale and the outer frame is read. The distance between the small arrows is 50, and in this case the width of the overlapped area is 730.



The left projector's scale is oriented in the opposite direction, allowing the overlap width to be measured in the same manner.

Adjust the projection position of the left and right projectors by operating **[Screen]>[Multi Projection]>[Edge Blending]>[Four Corners (M.P.)]** in menu system.

Make the outer frames of the left and right projectors in the overlapping area to be the same position. Also, adjust the



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overlap width read from the scale so that the values are the same as much as possible for the three locations of the left and right projectors (6 locations in total).

If the overlap width is different between the left and right projectors, adjust the position of the non-overlapping corner.

Once all overlap widths are approximately the same, note the values.

Open **[Screen]>[D.Zoom/Magnify]** and the value to be the image enlargement ratio (in %) in **[H.Zoom]/[V.Zoom]**. (Adjust both projectors to the same value).

Adjust the vertical cropping position of the screen you want to display with **[V.Shift]**. Set the same value for both projectors.

Adjust the horizontal cropping position of each projector's image with **[H.Shift]**. Then use **[H.Shift]** on one projector to make fine adjustments so that the images in the overlapping area do not become double.

Enter the overlap width you noted down in **[Screen]>[Multi Projection]>[Edge Blending]>[Blending]>[Width]** menu system.

Set **[Screen]>[Multi Projection]>[Edge Blending]>[Blending]>[Control]** to **[On]** in the menu system.

Adjust the Black Level if necessary.

## Advanced

Preset advanced screen setting.

- ▶ **Menu position:** Selects this function to set the menu display position from the following none options..
  - Top Left
  - Top Center
  - Top Right
  - Center Left
  - Center
  - Center Right
  - Bottom Left
  - Bottom Center
  - Bottom Right
- ▶ **Startup Screen:** Select this function to preset the startup screen when powering on as you like.

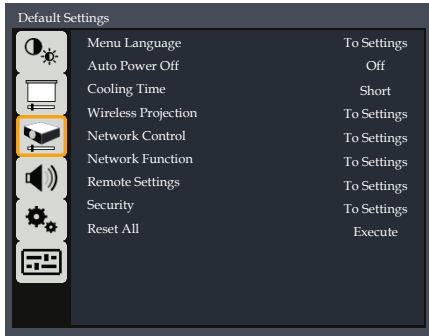
### Note

- ❖ When enlarged, the menu may become invisible and difficult to operate. If this happens, change the menu position by changing **[Screen] > [Advanced] > [Menu position]** in the menu system.

# User Settings

## Note

- ❖ You can take a screenshot only when you go to the [Memory Viewer] Input Source menu page and select the image. Click the [User Logo] application screenshot and it will take effect when the projector is turned on again.
  - ❖ To register the User Logo, please refer to [page 89](#) for details.
  - ❖ [RGB input range] function is available only when chosen the [HDMI] as the input signal.
- Logo: Selects this function to display the factory default RICOH logo screen.
  - User Logo: Selects this function to enable us to capture images being projected and use it for a startup display.
  - Off: Selects this function to display the blue screen.
- ▶ Background Color: Select this function to preset the background if no signal is connected.
    - Blue: Selects this function to enable the projector display blue when no signal is connected to it.
    - Gray: Selects this function to enable the projector display gray when no signal is connected to it.
    - Black: Selects this function to enable the projector display black when no signal is connected to it.
  - ▶ RGB input range: Adjust the RGB aberration range in the HDMI input source.
    - Auto: Automatically detect RGB range.
    - Limited Range: Selects this function to process the input image with a limited RGB range.
    - Full Range: Selects this function to process the input image with a full RGB range from AV equipment.
  - ▶ Test pattern: Display the test patterns built in the projector. Select the mode of the needed patterns: Off, Grid, Color Bar, White, Black, Red, Green, Blue, Yellow, Magenta, Cyan, E pattern, Focus and RGB RAMP. Select "Off" or press the Menu button to cancel this function.
  - ▶ 4K Shift: Select this function to enable or disable the pixel shift device..
    - On: Enables the 4K shift function (4K resolution).
    - Off: Disable the 4K shift function (1080P resolution).



## Default settings

### Language

This function is used for multi-language switch. Select **Default settings > Language**, press the Enter button to enter the sub-menu, and press the ▲▼◀▶ button to select the required language. Press the Enter button again for confirmation.

#### Note

- ❖ Default value of [Auto Power Off] is 20 min.

### Auto Power Off

Set the time interval of screen countdown. The projector will enter the state of countdown when there is no signal input. Auto Power Off is activated when the set time interval is due. The light source will turn off to cool down, and enter the standby mode.

### Cooling Time

After your projector is powered off, select the cooling time.

- ▶ Normal: Running in normal way.
- ▶ Short: Shorten cooling time. Increases fan speed, resulting in higher noise level.

### Wireless Projection

Use the projector wireless screen projection function, please refer to **page 91** for specific operations.

### Network Control

Configure the Network Control settings.

- ▶ Wired LAN Settings: This function can be set to adjust the parameters of the wired network.
  - DHCP: Select [On] to allow the projector to obtain an IP

# User Settings

## Note

- ❖ To change the wireless LAN settings, connect to the projector via a wired LAN and configure the settings from the Web control page (See [page 98](#)).
- ❖ When Reset option is performed, the password for wireless LAN is updated to a random 8 characters each time.

## Note

- ❖ To prevent unauthorized access, it is recommended to disable features that are not used.

address automatically from your network. Select [Off] to manually assign IP, Subnet Mask and Gateway configuration.

- IP Address: Set an IP address.
- Subnet mask: Set subnet mask.
- Default gateway: Set default gateway.
- DNS: Set DNS address.
- Apply: Execute all settings.
- ▶ **Wired LAN Status:** This feature allows you to view Wired LAN Status.
- ▶ **Wireless LAN:** This feature allows you to view Wireless LAN Status.
  - Mode: Displays the projector's wireless mode. Access Point/Infrastructure
  - SSID: Display the current SSID.
  - Password: The password is displayed when in access point mode. It is not displayed in infrastructure mode. Please contact your network administrator for the password in infrastructure mode.
  - IP Address: Display the current IP address.
  - MAC Address: Display MAC address of the projector's wireless LAN interface.
- ▶ **Reset:** Select this function to make adjustment value back to the factory default.

## Network Functions

Configure some network functions.

- ▶ **Web Control:** Users can view and set the projector's status information through using a Web browser. Set the option to [On] to enable web control function. Set the option to [Off] to disable web control function.
- ▶ **Wireless Projection:** Set the option to [On] to enable Wireless Projection function.
- ▶ **PJLink:** Set the option to [On] to enable PJLink function. Set the option to [Off] to disable PJLink function.
- ▶ **PJLink Notification:** You can manually set the IP address of the computer currently communicating with the projector.
- ▶ **AMX:** Supports AMX device discovery function.