

# **Operating Instructions**

# Geometric & Setup Management Software

# Geometry Manager Pro Ver. 7.1

# Windows



Thank you for purchasing this Panasonic product.

Before using this software, please read the instructions carefully.

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• Precautions regarding security

When using the "Geometric & Setup Management Software" (Geometry Manager Pro), security breaches of the type described below are conceivable.

- Leakage of your private information via this software
- Illegal operation of this software by a malicious third-party
- Harm to or cessation of operation of this software by a malicious third-party

Be sure to implement sufficient security measures.

- Make sure the password is as hard to guess as possible.
- Change the password periodically.
- Panasonic Projector & Display Corporation and its affiliated companies never directly ask customers for their password. Do not give out your password even if directly asked by a third-party representing themselves as Panasonic Projector & Display Corporation.
- Run Windows Update regularly to keep your computer up to date.
- Always use on a network that has safety protection such as a firewall implemented.
- Set the password for the computer you are using in order to set limits on user accessibility.
- This software makes use of the following software. A portion of this software is based in part on the work of the Independent JPEG Group.
- The illustrations and display examples used in this manual may differ from the actual product.
- Panasonic Projector & Display Corporation cannot be held liable for damages arising from data corruption or loss as a result of using this projector.

# What You Can Do with "Geometry Manager Pro"

Using this software allows you to perform real-time geometric compensation and other fine adjustments and corrections that cannot be handled on the projector side.

Even when you use this software, however, some functions and expanded functions may be limited if projector and computer activation are not completed.

@" "Activation" (page 12)

(Functions which are expanded as a result of activation" (page 32)

In addition, the correction and adjustment functions may be limited with some models.





When projecting images onto a screen surface that is not perfectly flat (such as the wall of a building) or projecting them onto a screen surface at an angle, the images become distorted.

When projecting images in these kinds of special environments, the geometry correction function serves to correct the images to counter the shape of the screen surface.

### Edge blending

This function serves to correct the brightness and makes the joins between the images less visible when the images projected from a multiple number of projectors are combined to form a single image.

### Uniformity

This function makes it possible to correct color irregularities in projected images – for example, those resulting from irregularities in the screen surface or from surrounding light and shade.

### Masking

This function makes it possible to mask certain parts of the projected images, projecting only the required parts.

### Auto Screen Adjustment (AUTO ADJUST)

This allows simple automatic adjustment of geometry correction, edge blending, color, and brightness according to the shape of the screen through use of a camera.

#### Note

- Both "Geometry Manager Pro" and the "Geometry Manager Pro Auto Screen Adjustment plug-in software" must be installed to use the Auto Screen Adjustment function.
- To use the Auto Screen Adjustment function, prepare a camera separately. @ "Camera connection" (page 115)

### Other functions

Lens adjustment, color matching, color adjustment, and input signal adjustment can be performed. Some of the projector's menu operations can also be carried out on a computer screen.

# **Check Your Computer**

# System requirements

The computer must meet the following requirements in order to use the supplied software.

OS: Microsoft Windows 11 (Windows 11 Home/Pro 64bit) Windows 10 (Windows 10 Home/Pro 64bit) Compatible with English, Japanese or Chinese language versions of the above operating systems. CPU: At least minimum required by OS Memory: At least minimum required by OS Available disk space: 16 GB or greater (Further available space is necessary to save projector information) Other requirements: A display with a resolution of 1 600 × 900 pixel or higher using High Color (16 bit) or higher LAN port for a wired LAN (10Base-T/100Base-TX / 1000Base-T) USB 2.0-compatible port or higher (when using the Auto Screen Adjustment function with a camera)

### Note

• Please understand that operation is not guaranteed if this software application is used in a system environment other than that specified above or on a home-built computer.

Proper operation cannot be guaranteed for all computers even if they satisfy the above requirements.

# **Necessary Environment for Computers to be Connected**

Be sure to check the following settings when connecting projectors to the computer via a wired LAN connection.

#### Computer with a built-in LAN function

• Is your LAN switched on?

#### Computer without a built-in LAN function

- Is your LAN adapter properly recognized?
   Please install the LAN adapter driver beforehand.
   For details on how to install the driver, please refer to instructions accompanying the LAN adapter.
- Is your LAN adapter switched on?

### Note

- It may not be possible to establish a connection with the projector if security (firewall) software or utility software for LAN adapter are installed.
  - Generations" (page 161)
- Operation is not guaranteed for all LAN adapters and built-in LAN adapters in the computers.
- An Internet connection is required to perform activation.

# Installing/Uninstalling Software

## Installation

Quit any applications running in Windows before starting installation. Failure to do so may result in improper installation.

### Installing "Geometric & Setup Management Software" (Geometry Manager Pro)

### Download the software.

- Download "Geometry Manager Pro".
  - Log in to PASS<sup>\*1</sup> on the following website, click [Software Download], and follow the on-screen instructions to download the software.

https://docs.connect.panasonic.com/projector/pass

You must be registered with PASS to log in to it.

\*1 PASS: Panasonic Professional Display and Projector Technical Support Website.

### Note

To enable use of the Auto Screen Adjustment function, download the "Auto Screen Adjustment plug-in software" as well. © "Installing the "Auto Screen Adjustment plug-in software" (page 8)

### **2** The installer starts up.

Double-click the downloaded "Installer.exe" file.

| 伊 Geometry Manager Pro Ver.XXX  | -  |                                  | ×        |
|---|--|----------------------------------|----------|
| Welcome to the Geometry Manager Pro Ver<br>Setup Wizard   | ·.X.X.X                                    |                                  |          |
| The installer will guide you through the steps required to install Geometry N<br>your computer.   | fanager P                                  | ro Ver.X)                        | KX on    |
|   |  |                                  |          |
|   |  |                                  |          |
| WARNING: This computer program is protected by copyright law and inte<br>Unauthorized duplication or distribution of this program, or any portion of it<br>or criminal penalties, and will be prosecuted to the maximum extent possib | rnational tr<br>, may resul<br>le under th | eaties.<br>It in seve<br>Ie law. | re civil |
| Cancel < <u>B</u> ac  | :k   | <u>N</u> ex                      | t>       |

Follow the on-screen instructions to install the application.

### Note

Perform this procedure using an account with administrator privileges.

### **3** As soon as the installation process is completed, a shortcut icon is created on the desktop.



### Note

If an identical version of the software is already installed, the following screen for selecting whether to repair or remove the existing version appears.



To repair defects in the software, select "Repair Geometry Manager Pro", and click [Finish].
 To uninstall the existing version before installing the software again, select [Remove Geometry Manager Pro], and click [Finish].

### Installing the "Auto Screen Adjustment plug-in software"

### Download the "Auto Screen Adjustment plug-in software".

Both "Geometry Manager Pro" and the "Geometry Manager Pro - Auto Screen Adjustment plug-in software" are
necessary to use the Auto Screen Adjustment function.
Log in to PASS on the following website, click [Software Download], and follow the on-screen instructions to download
the "Auto Screen Adjustment plug-in software".
https://docs.connect.panasonic.com/projector/pass

### **2** The installer starts up.

Double-click the downloaded "AusInstaller.exe" file, and follow the on-screen instructions to install the application.

Note

- Perform this procedure using an account with administrator privileges.
- The compatible combination of versions for the "Auto Screen Adjustment plug-in software" and the "Geometry Manager Pro" is predetermined. Therefore, an error message will appear if you attempt to install an incompatible version of the "Auto Screen Adjustment plug-in software". In such cases, check whether the version of "Geometry Manager Pro" that appears in the error message matches the software version found on the above website. If the versions match, download and install only "Geometry Manager Pro" from the website. If the versions do not match, download and install both "Geometry Manager Pro" and the "Auto Screen Adjustment plug-in software".

**3** When installation is complete, the [AUTO ADJUST] (Auto Screen Adjustment) button at the top right of the "Geometry Manager Pro" main screen will be enabled.

|  | - |        | ×     |  |  |  |  |  |  |
|--|---|--------|-------|--|--|--|--|--|--|
|  |   | AUTO A | DJUST |  |  |  |  |  |  |
| Ol Color Matching Masking Input Signal Other |   |        |       |  |  |  |  |  |  |

### Note

If you click the [AUTO ADJUST] button while the "Auto Screen Adjustment plug-in software" is not installed, a message indicating that installation of the plug-in software is required will appear.

# **Software Uninstall**

Enter and then select "Apps & features" in the search box of the task bar, select [Geometry Manager Pro Ver.\*.\*]\*1, and click [Uninstall].

\*1 The "\*" represent the version number.

### Note

- Perform this procedure using an account with administrator privileges.
- Uninstalling "Geometry Manager Pro" will not uninstall the "Auto Screen Adjustment plug-in software". Perform the same procedure as the above to uninstall the "Auto Screen Adjustment plug-in software" (Geometry Manager Pro Auto Screen Adjustment plug-in).

### Projectors supported

For details on models compatible with "Geometry Manager Pro", check the information found on the software download page after logging in to PASS on the following website.

https://docs.connect.panasonic.com/projector/pass

### Note

No guarantees are made for the operations when the computer is connected to a non-supported projector.

## Projector and computer connections

Connect the projector and computer using a LAN cable. Up to 99 projectors can be connected.

### Note

- Please use a crossing cable to connect the computer and projector when it is directly connected to the LAN.
- When using a hub to connect, whether or not a straight cable or crossing cable or both can be used depends on the system configuration. Please consult your network administrator for details.

## Setting the Computer

### **Network Setup**

- Set the IP ADDRESS, SUBNET MASK and DEFAULT GATEWAY according to the operating environment. (Please consult your network administrator for details.)
- If "use of automatic script" is checked for your web browser, please uncheck.
- If "Use of Proxy server in LAN" is checked for your web browser, please uncheck, or set the projector IP address to "Exceptions" in the detailed proxy settings.

### Setting the Projector

### **Network Setup**

Set the IP address, subnet mask, and default gateway according to your operating environment. (Please consult your network administrator for details.)

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.

If the entered IP address is used by another device, the projector cannot be registered.

- For models that can be set, enable both WEB Control and Command Control.
- For models in which the Web port number can be set, set the port number to "80".

### Note

- Refer to operating manual of the projector for method on configuring the projector.
- If prompted to configure the settings for the administrator account in the startup screen or WEB control screen of the projector, complete those settings.
- This software identifies the projector using the configured IP address. If DHCP is set to ON in the projector network setting in a network environment that uses a DHCP server etc. the DHCP server may change the IP address allocated to the projector, making it impossible to connect using this software.

Please ensure the server does not change the IP address by, for example, setting the DHCP server so as to fix the IP address allocated to the projector. (Please consult your network administrator for details.)

### Activation

There are functions that are enabled and functions that are expanded by performing activation.

The upgrade kit (ET-UK20), Auto Screen Adjustment upgrade kit (ET-CUK10), and Auto Screen Adjustment upgrade kit (PC) (ET-CUK10P) are required for activation. For details on compatible projector models, check the information found on the activation page by logging in to PASS on the following website.

https://docs.connect.panasonic.com/projector/pass

(Functions which are expanded as a result of activation" (page 32)

### Note

The "Auto Screen Adjustment plug-in software" must be installed and the Auto Screen Adjustment upgrade kit (ET-CUK10) must be applied on the projector or the Auto Screen Adjustment upgrade kit (PC) (ET-CUK10P) must be applied on the computer to enable the Auto Screen Adjustment function.

However, some projectors will be in the state with the functions enabled or functions expanded without having to activate the upgrade kit (ET-UK20) and Auto Screen Adjustment upgrade kit (ET-CUK10).

Also, some projectors do not support activation of the upgrade kit (ET-UK20) and Auto Screen Adjustment upgrade kit (ET-CUK10).

### Camera connection

To use the Auto Screen Adjustment function, prepare a camera separately.

For details on supported cameras and lenses and how to connect the camera to the computer, refer to "Auto Screen Adjustment" (page 115).

There are functions that are enabled and functions that are expanded by performing activation.

There are two methods of activation: one is to apply a kit on the projector to add or expand the functions of the projector (projector activation) and the other is to apply a kit on the computer to expand the functions of the software installed on that computer (computer activation).

The upgrade kit (ET-UK20) and Auto Screen Adjustment upgrade kit (ET-CUK10) are required for the former method and the Auto Screen Adjustment upgrade kit (PC) (ET-CUK10P) is required for the latter method. For details on compatible projector models, check the information found on the activation page by logging in to PASS on the following website. https://docs.connect.panasonic.com/projector/pass

(Functions which are expanded as a result of activation" (page 32)

### Note

- Both "Geometry Manager Pro" and the "Auto Screen Adjustment plug-in software" must be installed to use the Auto Screen Adjustment function.
- Some projectors will be in the state with the functions enabled or functions expanded without having to activate the upgrade kit (ET-UK20) and Auto Screen Adjustment upgrade kit (ET-CUK10).
- Some projectors do not support activation of the upgrade kit (ET-UK20) and Auto Screen Adjustment upgrade kit (ET-CUK10).

# Perform the projector activation

The flow of operations from installation to activation is as follows.

This sections describes projector activation.



Projector activation can be performed using one of the following two methods. Perform activation according to your operating environment.

### Note

Please note that activation may fail if you attempt to change the method to a different one during activation.

### Method 1: Method not involving file operation

### When can connect to the Internet

Connect to the Internet and perform activation from the computer while connected with the projector.

### **1** Have the key code ready.

The key code is indicated on the key code label of the upgrade kit (ET-UK20) or the Auto Screen Adjustment upgrade kit (ET-CUK10).

# **2** Start the software application, and display the Connection Setting screen.

**3** Select [Activation(ET-UK20/ET-CUK10)] from the [Option] menu of the Connection Setting screen.

| Activation(EFCOKTOP)   |             | >     |   |       |
|------------------------|-------------|-------|---|-------|
| Activation(ET-UK20/ET- | CUK10)      |       | J |       |
| Display Theme          |             | >     | 0 | . 8   |
| Command Control        |             | >     | - |       |
| Service Password       |             |       |   |       |
| Version                |             |       |   |       |
|                        |             |       |   |       |
| 10.73.182.4            | 407255.255. | 254.0 |   |       |
| Port:                  | Γ           |       |   | 1024  |
| User Name:             |             |       |   |       |
| Password:              |             |       |   | 0     |
| ) Load from file       |             |       |   |       |
| File path:             |             |       | S | elect |
|                        |             |       |   |       |
|                        |             |       |   |       |
|                        |             |       |   |       |
|                        |             |       |   |       |

The following screen appears if there is no loadable license management information, such as at initial startup. In this case, click [Cancel].



### **4** Click the [Projector Search] button.

| projector | Activation   |        |        |        |        |                  |        |                        |            | ×    |
|-----------|--------------|--------|--------|--------|--------|------------------|--------|------------------------|------------|------|
| Proj      | ector Search | Delete | Export | Import | Reload |                  |        |                        |            |      |
| N         | Io MAC       | IPv4   | S/N    | Model  | Name   | Keycode(ET-UK20) | Status | Keycode(ET-CUK10)      | Status     |      |
|           |              |        |        |        |        |                  |        |                        |            |      |
|           |              |        |        |        |        |                  |        |                        |            |      |
|           |              |        |        |        |        |                  |        |                        |            |      |
|           |              |        |        |        |        |                  |        |                        |            |      |
|           |              |        |        |        |        |                  |        |                        |            |      |
|           |              |        |        |        |        |                  |        |                        |            |      |
|           |              |        |        |        |        |                  |        |                        |            |      |
|           |              |        |        |        |        |                  |        | Server Connection Test | Activation | Exit |
|           |              |        |        |        |        |                  |        |                        |            |      |

# **5** Enter the IP address, port number, user name, and password, and click the [Search] button to search for the projector.

To search by specifying an IP address range, select the [End IP Address] check box and enter the IP address for which to end the search.

| Projector Search |            |   |        |    |     |      |      |      | × |
|------------------|------------|---|--------|----|-----|------|------|------|---|
| IP Address:      |            |   | 192    | •  | 168 | 0    | •    | 8    |   |
| End IP Add       | Iress:     |   | 192    |    | 168 | 0    |      | 254  |   |
| Port:            |            |   |        |    |     | <br> |      | 1024 |   |
| User Name:       | User Name: |   |        | in |     |      |      |      |   |
| Password:        | Password:  |   |        |    |     |      |      |      |   |
|                  |            | 5 | Search |    |     |      | Exit |      |   |

6 Select the projector you want to connect to from the search results, and click the [Connect] button.

| Geometry Manager Pro  | D           |              |        | ×       |
|-----------------------|-------------|--------------|--------|---------|
|                       |             |              |        | Cancel  |
| Available projectors: | 2 Selected: | 2 Upper limi | ts: 99 |         |
| IP Address            | Model       | Name         | Status |         |
| 192.168.0.8           | PT-RCQ10E   | NAME3282     |        |         |
| 192.168.0.9           | PT-RZ970    | NAME8874     |        |         |
|                       |             |              |        |         |
|                       |             |              |        |         |
|                       |             |              |        |         |
|                       |             |              |        |         |
|                       |             |              |        |         |
|                       |             |              |        |         |
|                       |             |              |        |         |
|                       |             |              |        |         |
|                       |             |              |        |         |
|                       |             |              |        |         |
| <                     |             |              |        | >       |
| Select All Clea       | ar All      |              | Back   | Connect |

7 Select the projector to be managed, and double-click in a license item you want to activate.

| Projector Activation  |  | ×  |
|---|--|--|
| Projector Search Delete Export Import   | Reload   |  |
| No         MAC         IPv4         S/N         Model           ✓         1         00-08-97-41-86-42         192.168.0.8         SN1234567890         PT-RCQ10E           ✓         2         BC-C3-42-87-08-86         192.168.0.9         DA7640074         PT-RZ970 | Name         Keycode(ET-UK20)         Status           NAME3282         PJ's info acquired           NAME8874         PJ's info acquired | Keycode(ET-CUK10) Status<br>PJ's info acquired<br>PJ's info acquired |
|   | Server Connec  | tion Test Activation Exit  |

# 8 Enter the key code, and click [OK].

The [OK] button is enabled when you enter all 25 digits of any key code.

| Input Keycode | 2                                     | × |
|---------------|---------------------------------------|---|
| ET-UK20:      |                                       |   |
| ET-CUK10:     | · · · · · · · · · · · · · · · · · · · |   |
|               | Cancel OK                             |   |

# **9** Click the [Activation] button.

| P | rojec | tor A        | ctivation                                     |                                    |                                  |                                |                              |   |  |       |  | ×  |
|---|-------|--------------|---|------------------------------------|----------------------------------|--------------------------------|------------------------------|---|--|-------|--|--|
|   |       | Proje        | ctor Search                                   | Delete                             | Export                           | Import                         | Reload                       |   |  |       |  |  |
|   | NN    | No<br>1<br>2 | MAC<br>00-08-97-41-E6-42<br>BC-C3-42-87-D8-86 | IPv4<br>192.168.0.8<br>192.168.0.9 | S/N<br>SN1234567890<br>DA7640074 | Model<br>PT-RCQ10E<br>PT-RZ970 | Name<br>NAME3282<br>NAME8874 | Keycode(ET-UK20)<br>U0020-ZGF0Z-30000-1AAQH-117F7 | Status<br>Keycode registered<br>PJ's info acquired |       | Keycode(ET-CUK10)<br>C0010-ZGF0Z-30000-1AMHJ-82B98 | Status<br>PJ's info acquired<br>Keycode registered |
|   | <     |              |   |                                    |                                  |                                |                              |   |  |       |  | >  |
|   |       |              |   |                                    |                                  |                                |                              |   | Server Co  | nnect | ion Test Activation                                | Exit   |

# **10** Activation is complete when [Status] becomes "Activated".

Exit the software application by clicking the [Exit] button.

| Pro | jecto | or Ac  | tivation                               |                            |                           |                       |                      |                               |                                 |                               |                                 | ×  |
|-----|-------|--------|--|----------------------------|---------------------------|-----------------------|----------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|----|
|     | P     | roject | or Search                              | Delete                     | Export                    | Import                | Reload               |                               |                                 |                               |                                 |    |
|     |       | No     | MAC                                    | IPv4                       | S/N                       | Model                 | Name                 | Keycode(ET-UK20)              | Status                          | Keycode(ET-CUK10)             | Status                          | ٦  |
| 6   |       | 2      | 00-0B-97-41-E6-42<br>3C-C3-42-B7-DB-B6 | 192.168.0.8<br>192.168.0.9 | SN1234567890<br>DA7640074 | PT-RCQ10E<br>PT-RZ970 | NAME3282<br>NAME8874 | U0020-ZGF0Z-30000-1AAQH-117F7 | Activated<br>PJ's info acquired | C0010-ZGF0Z-30000-1AMHJ-82B98 | PJ's info acquired<br>Activated | וו |
|     |       |        |  |                            |                           |                       |                      |                               |                                 |                               |                                 |    |
|     |       |        |  |                            |                           |                       |                      |                               |                                 |                               |                                 |    |
|     |       |        |  |                            |                           |                       |                      |                               |                                 |                               |                                 |    |
|     |       |        |  |                            |                           |                       |                      |                               |                                 |                               | _                               | >  |
|     | -     |        |  |                            |                           |                       |                      |                               |                                 |                               |                                 | _  |
|     |       |        |  |                            |                           |                       |                      |                               | Server Con                      | nection Test Activation       | Exit                            |    |

### When cannot connect to the Internet

Export the license management information including the device and key code information, and acquire the activation code using another computer that can connect to the Internet. The computer that will acquire the activation code does not need to connect with the projector.

### • Operation of computer connected with projector

### **1** Have the key code ready.

The key code is indicated on the key code label of the upgrade kit (ET-UK20) or the Auto Screen Adjustment upgrade kit (ET-CUK10).

# **2** Start the software application, and display the Connection Setting screen.

**3** Select [Activation(ET-UK20/ET-CUK10)] from the [Option] menu of the Connection Setting screen.

| 🥮 Geometry Ma | inager Pro  |            |         |      |        | × |
|---------------|-------------|------------|---------|------|--------|---|
| Option        |             |            |         |      |        |   |
| Activation(E  | T-CUK10P)   |            | >       |      |        |   |
| Activation(E  | T-UK20/ET-C | UK10)      |         |      |        |   |
| Display The   | ne          |            | >       | 0.   | 8      |   |
| Command C     | ontrol      |            | >       |      | _      |   |
| Service Pass  | word        |            |         |      |        |   |
| Version       |             |            |         |      |        |   |
| 0             |             |            |         |      | _      |   |
|               | 10.73.182.4 | 0 / 255.25 | 5.254.0 |      | $\sim$ |   |
|               |             |            |         |      |        |   |
| Port:         |             |            |         |      | 1024   |   |
| User Name     |             |            |         |      |        |   |
| Password:     |             |            |         |      |        |   |
|               |             |            |         |      | V      |   |
| ~             |             |            |         |      |        |   |
| O Load from t | ile         |            |         |      |        |   |
|               |             |            |         | _    |        |   |
| File path:    |             |            |         | Se   | lect   |   |
|               |             |            |         |      |        |   |
|               |             |            |         |      |        |   |
|               |             |            |         |      |        |   |
|               |             |            |         |      |        |   |
|               |             |            |         |      |        |   |
|               |             |            |         |      |        |   |
|               | Conr        | nect       |         | Exit |        |   |
|               | L           |            |         |      |        |   |
|               |             |            |         |      |        |   |

The following screen appears if there is no loadable license management information, such as at initial startup. In this case, click [Cancel].



### **4** Click the [Projector Search] button.

| No MAC IPv4 S/N Model Name Keycode(ET-UK20) Status Keycode(ET-CUK10) Status |      |
|---|------|
|   |      |
|   |      |
|   |      |
|   | <br> |

# **5** Enter the IP address, port number, user name, and password, and click the [Search] button to search for the projector.

To search by specifying an IP address range, select the [End IP Address] check box and enter the IP address for which to end the search.

| Proj | ector Search    |   |         |      |     |      |      |      | × |
|------|-----------------|---|---------|------|-----|------|------|------|---|
|      | IP Address:     |   | 192     | •    | 168 | 0    | -    | 8    |   |
|      | End IP Address: |   | 192     |      | 168 | 0    |      | 254  |   |
|      | Port:           |   |         |      |     | <br> |      | 1024 |   |
|      | User Name:      |   | dispadr | nin  |     |      |      |      |   |
|      | Password:       |   | •••••   | •••• | ••  |      |      |      |   |
|      |                 | 5 | Search  |      | ]   |      | Exit |      |   |

6 Select the projector you want to connect to from the search results, and click the [Connect] button.

| Geometry Manager Pro  | <b>b</b>           |                  |         | ×       |
|-----------------------|--------------------|------------------|---------|---------|
|                       |                    |                  |         | Cancel  |
| Available projectors: | 2 Selected:        | 2 Upper lim      | its: 99 |         |
| IP Address            | Model<br>PT-RCQ10E | Name<br>NAME3282 | Status  |         |
| 192.168.0.9           | PT-RZ970           | NAME8874         |         |         |
|                       |                    |                  |         |         |
|                       |                    |                  |         |         |
|                       |                    |                  |         |         |
|                       |                    |                  |         |         |
|                       |                    |                  |         |         |
|                       |                    |                  |         |         |
| <                     |                    |                  |         | >       |
| Select All Clea       | ar All             |                  | Back    | Connect |

7 Select the projector to be managed, and double-click in a license item you want to activate.

| Pro | jector A | ctivation                              |                            |                           |                       |                      |    |                  |  |                   |                  |                              | >    |
|-----|----------|--|----------------------------|---------------------------|-----------------------|----------------------|----|------------------|--|-------------------|------------------|------------------------------|------|
|     | Proje    | ctor Search                            | Delete                     | Export                    | Import                | Reload               |    |                  |  |                   |                  |                              |      |
|     | No       | MAC                                    | IPv4                       | S/N                       | Model                 | Name                 | 11 | Keycode(ET-UK20) | Status                                   | Keycode(ET-0      | CUK10) Stat      | us                           | 1    |
| 6   | ✓ 1 ✓ 2  | 00-0B-97-41-E6-42<br>BC-C3-42-B7-DB-B6 | 192.168.0.8<br>192.168.0.9 | SN1234567890<br>DA7640074 | PT-RCQ10E<br>PT-RZ970 | NAME3282<br>NAME8874 |    |                  | PJ's info acquired<br>PJ's info acquired |                   | PJ's i<br>PJ's i | nfo acquired<br>nfo acquired |      |
|     |          |  |                            |                           |                       |                      | •  |                  |  |                   |                  |                              | •    |
|     |          |  |                            |                           |                       |                      |    |                  |  |                   |                  |                              |      |
|     |          |  |                            |                           |                       |                      |    |                  |  |                   |                  |                              |      |
|     |          |  |                            |                           |                       |                      |    |                  |  |                   |                  |                              |      |
|     |          |  |                            |                           |                       |                      |    |                  |  |                   |                  |                              |      |
|     |          |  |                            |                           |                       |                      |    |                  | Server                                   | r Connection Test | Activation       |                              | Exit |

### 8 Enter the key code, and click [OK].

The [OK] button is enabled when you enter all 25 digits of any key code.

| Input Keycode | ×                       | : |
|---------------|-------------------------|---|
| ET-UK20:      |                         |   |
| ET-CUK10:     | · · · · · · · · · · · · |   |
|               | Cancel OK               |   |

**9** Check that [Status] has become "Keycode registered".

| ojector A        | Activation                                    |                                    |                                  |                                |                              |   |   |  |       |   |   | ×          |
|------------------|---|------------------------------------|----------------------------------|--------------------------------|------------------------------|---|---|--|-------|---|---|------------|
| Proje            | ctor Search                                   | Delete                             | Export                           | Import                         | Reload                       |   |   |  |       |   |   |            |
| Nα<br>↓ 1<br>↓ 2 | MAC<br>00-08-97-41-E6-42<br>BC-C3-42-87-D8-86 | IPv4<br>192.168.0.8<br>192.168.0.9 | S/N<br>SN1234567890<br>DA7640074 | Model<br>PT-RCQ10E<br>PT-RZ970 | Name<br>NAME3282<br>NAME8874 | Ŋ | Keycode(ET-UK20)<br>U0020-ZGF0Z-30000-1AAQH-117F7 | Status<br>Keycode registered<br>PJ's info acquired |       | Keycode(ET-CUK10)<br>C0010-ZGF0Z-30000-1AMHJ-82B9 | Status<br>PJ's info acquire<br>PJ's info acquire<br>Reycode registe | ed<br>ered |
| <                |   |                                    |                                  |                                |                              |   |   | Server Co  | nnect | ion Test Activation                               | Exi   | ><br>it    |

**10** Click the [Export] button and save the file to USB memory or other storage media.

| Proje | ector      | Activation                             |                            |                           |                       |                      |                               |  |       |                               |                                      | >          |
|-------|------------|--|----------------------------|---------------------------|-----------------------|----------------------|-------------------------------|--|-------|-------------------------------|--------------------------------------|------------|
|       | Proj       | ector Search                           | Delete                     | Export                    | Import                | Reload               |                               |  |       |                               |                                      |            |
|       | N          | o MAC                                  | IPv4                       | S/N                       | Model                 | Name                 | Keycode(ET-UK20)              | Status                                   |       | Keycode(ET-CUK10)             | Status                               |            |
| R     | ] 1<br>] 2 | 00-0B-97-41-E6-42<br>BC-C3-42-B7-DB-B6 | 192.168.0.8<br>192.168.0.9 | SN1234567890<br>DA7640074 | PT-RCQ10E<br>PT-RZ970 | NAME3282<br>NAME8874 | U0020-ZGF0Z-30000-1AAQH-117F7 | Keycode registered<br>PJ's info acquired |       | C0010-ZGF0Z-30000-1AMHJ-82898 | PJ's info acquire<br>Keycode registe | əd<br>əred |
| ۲     |            |  |                            |                           |                       |                      |                               | Server Co                                | nnect | ion Test Activation           | Exi                                  | ><br>it    |

### • Operation of the other computer

# **11** Load the file saved in step 10 using another computer that can connect to the Internet.

Start the software application, and select [Activation(ET-UK20/ET-CUK10)] from the [Option] menu of the Connection Setting screen. When the following screen opens, click the [Import] button.

| Pro | ector | Activation   |        |        |        |        |                  |        |           |                |     |            | ×    | < |
|-----|-------|--------------|--------|--------|--------|--------|------------------|--------|-----------|----------------|-----|------------|------|---|
|     | Proj  | ector Search | Delete | Export | Import | Reload |                  |        |           |                |     |            |      |   |
|     | N     | o MAC        | IPv4   | S/N    | Model  | Name   | Keycode(ET-UK20) | Status |           | Keycode(ET-CUK | 10) | Status     |      | ] |
|     |       |              |        |        |        |        |                  |        |           |                |     |            |      |   |
|     |       |              |        |        |        |        |                  |        |           |                |     |            |      |   |
|     |       |              |        |        |        |        |                  |        |           |                |     |            |      |   |
|     |       |              |        |        |        |        |                  |        |           |                |     |            |      |   |
|     |       |              |        |        |        |        |                  |        |           |                |     |            |      |   |
|     |       |              |        |        |        |        |                  |        |           |                |     |            |      |   |
|     |       |              |        |        |        |        |                  |        |           |                |     |            |      |   |
|     |       |              |        |        |        |        |                  |        | Server Co | nnection Test  |     | Activation | Exit |   |

# **12** Click the [Activation] button.

| Pro | oject | tor A        | ctivation                                     |                                    |                                  |                                |                              |   |  |       |  |  | × |
|-----|-------|--------------|---|------------------------------------|----------------------------------|--------------------------------|------------------------------|---|--|-------|--|--|---|
|     | I     | Proje        | ctor Search                                   | Delete                             | Export                           | Import                         | Reload                       |   |  |       |  |  |   |
| E   | N N   | Nc<br>1<br>2 | MAC<br>00-08-97-41-E6-42<br>BC-C3-42-87-D8-86 | IPv4<br>192.168.0.8<br>192.168.0.9 | S/N<br>SN1234567890<br>DA7640074 | Model<br>PT-RCQ10E<br>PT-RZ970 | Name<br>NAME3282<br>NAME8874 | Keycode(ET-UK20)<br>U0020-ZGF0Z-30000-1AAQH-117F7 | Status<br>Keycode registered<br>PJ's info acquired |       | Keycode(ET-CUK10)<br>C0010-ZGF0Z-30000-1AMHJ-82B98 | Status<br>PJ's info acquired<br>Keycode registered | d |
| <   |       |              |   |                                    |                                  |                                |                              |   |  |       |  |  | > |
|     |       |              |   |                                    |                                  |                                |                              |   | Server Co  | nnect | ion Test Activation                                | Exit   |   |

**13** Check that [Status] has become "Activation code acquired".

| rojec        | ctor / | Activation                             |                            |                           |                       |                      |       |                               |  |        |                               |  |
|--------------|--------|--|----------------------------|---------------------------|-----------------------|----------------------|-------|-------------------------------|--|--------|-------------------------------|--|
|              | Proje  | ector Search                           | Delete                     | Export                    | Import                |                      | Reloa | d                             |  |        |                               |  |
|              | N      | o MAC                                  | IPv4                       | S/N                       | Model                 | Name                 |       | Keycode(ET-UK20)              | Status   |        | Keycode(ET-CUK10)             | Status                                     |
| $\mathbf{N}$ | 1<br>2 | 00-0B-97-41-E6-42<br>BC-C3-42-B7-DB-B6 | 192.168.0.8<br>192.168.0.9 | SN1234567890<br>DA7640074 | PT-RCQ10E<br>PT-RZ970 | NAME3282<br>NAME8874 |       | U0020-ZGF0Z-30000-1AAQH-117F7 | Activation code acquired<br>PJ's info acquired |        | C0010-ZGF0Z-30000-1AMHJ-82B98 | PJ's info acquired<br>Activation code acqu |
|              |        |  |                            |                           |                       |                      |       |                               |  |        |                               |  |
|              |        |  |                            |                           |                       |                      |       |                               |  |        |                               |  |
| /            |        |  |                            |                           |                       |                      |       |                               |  |        |                               |  |
| `            |        |  |                            |                           |                       |                      |       |                               |  |        |                               |  |
|              |        |  |                            |                           |                       |                      |       |                               | Serv   | er Con | nection Test Activation       | Exit                                       |

14 Click the [Export] button and save the file to USB memory or other storage media.

| Proje | tor / | Activation                             |                            |                           |                       |                      |       |                               |  |        |                               |  | ×   |
|-------|-------|--|----------------------------|---------------------------|-----------------------|----------------------|-------|-------------------------------|--|--------|-------------------------------|--|-----|
|       | Proje | ector Search                           | Delete                     | Export                    | Import                |                      | Reloa | id                            |  |        |                               |  |     |
|       | N     | o MAC                                  | IPv4                       | S/N                       | Model                 | Name                 |       | Keycode(ET-UK20)              | Status   |        | Keycode(ET-CUK10)             | Status                                       |     |
| N     | 1 2   | 00-0B-97-41-E6-42<br>BC-C3-42-B7-DB-B6 | 192.168.0.8<br>192.168.0.9 | SN1234567890<br>DA7640074 | PT-RCQ10E<br>PT-RZ970 | NAME3282<br>NAME8874 |       | U0020-ZGF0Z-30000-1AAQH-117F7 | Activation code acquired<br>PJ's info acquired |        | C0010-ZGF0Z-30000-1AMHJ-82898 | PJ's info acquired<br>Activation code acquir | red |
| <     |       |  |                            |                           |                       |                      |       |                               | Serv   | er Con | nection Test Activation       | Exit   | >   |

• Operation of computer connected with projector

**15** Click the [Import] button on the computer connected with the projector, and load the file saved in step 14.

| Pro | jecto | or Ac | rtivation                              |                            |                           |                       |                      |      |                               |   |          |                 |                |                                   | ×                  |
|-----|-------|-------|--|----------------------------|---------------------------|-----------------------|----------------------|------|-------------------------------|---|----------|-----------------|----------------|-----------------------------------|--------------------|
|     | P     | rojec | tor Search                             | Delete                     | Export                    | Import                |                      | Relo | ad                            |   |          |                 |                |                                   |                    |
| Γ   |       | No    | MAC                                    | IPv4                       | S/N                       | Model                 | Name                 |      | Keycode(ET-UK20)              | Status  |          | Keycode(ET-CUK  | 10)            | Status                            |                    |
|     |       | 2     | 00-0B-97-41-E6-42<br>BC-C3-42-B7-DB-B6 | 192.168.0.8<br>192.168.0.9 | SN1234567890<br>DA7640074 | PT-RCQ10E<br>PT-RZ970 | NAME3282<br>NAME8874 |      | U0020-ZGF0Z-30000-1AAQH-117F7 | Activation code acquire<br>PJ's info acquired | d        | C0010-ZGF0Z-300 | 00-1AMHJ-82B98 | PJ's info acqui<br>Activation cod | red<br>le acquired |
|     |       |       |  |                            |                           |                       |                      |      |                               |   |          |                 |                |                                   |                    |
|     |       |       |  |                            |                           |                       |                      |      |                               |   |          |                 |                |                                   |                    |
|     |       |       |  |                            |                           |                       |                      |      |                               |   |          |                 |                |                                   |                    |
| <   |       |       |  |                            |                           |                       |                      |      |                               |   |          |                 |                |                                   | >                  |
|     |       |       |  |                            |                           |                       |                      |      |                               | 5   | erver Co | onnection Test  | Activation     |                                   | Exit               |

# **16** Click the [Activation] button.

| Proje | ctor Ac<br>Project | tivation                                      | Delete                             | Export                           | Import                         |                              | Rek | ad  |  |        |  |  |                |
|-------|--------------------|---|------------------------------------|----------------------------------|--------------------------------|------------------------------|-----|---|--|--------|--|--|----------------|
| N     | No<br>1<br>2       | MAC<br>00-0B-97-41-E6-42<br>BC-C3-42-B7-DB-B6 | IPv4<br>192.168.0.8<br>192.168.0.9 | S/N<br>SN1234567890<br>DA7640074 | Model<br>PT-RCQ10E<br>PT-RZ970 | Name<br>NAME3282<br>NAME8874 |     | Keycode(ET-UK20)<br>U0020-ZGF0Z-30000-1AAQH-117F7 | Status<br>Activation code acquired<br>RJ's info acquired |        | Keycode(ET-CUK10)<br>C0010-ZGF0Z-30000-1AMHJ-82B98 | Status<br>PJ's info acquire<br>Activation code | ed<br>acquired |
| <     |                    |   |                                    |                                  |                                |                              |     |   | Ser  | ver Co | onnection Test Activation                          |  | Exit           |

# **17** Activation is complete when [Status] becomes "Activated".

Exit the software application by clicking the [Exit] button.

| Projector Activation                              |   |  |                                     |   |   |  | ×   |
|---|---|--|-------------------------------------|---|---|--|---|
| Projector Search                                  | Delete                                  | Export Import                                      | Reload                              |   |   |  |   |
| No MAC<br>✓ 1 00-08-97-41-E1<br>✓ 2 BC-C3-42-87-D | ₽v4 192.168.0.8 S<br>8-86 192.168.0.9 D | S/N Model<br>N1234567890 PT-RCC<br>A7640074 PT-R29 | Name<br>10E NAME3282<br>70 NAME8874 | Keycode(ET-UK20)<br>U0020-ZGF0Z-30000-1AAQH-117F7 | Status<br>Activated<br>PJ's info acquired | Keycode(ET-CUK10)<br>C0010-ZGF0Z-30000-1AMHJ-82B98 | Status<br>PJ's info acquired<br>Activated |
| <   |   |  |                                     |   |   |  | >   |
|   |   |  |                                     |   | Server Connectio                          | n Test Activation                                  | Exit                                      |

### Note

- Registering just the key code first is not possible.
- Deactivation or transferring the key code to another projector is not possible.
- To test connecting with the server, click [Server Connection Test].

| rojector Activation |        |        |        |        |                  |        |                   |        |  |
|---------------------|--------|--------|--------|--------|------------------|--------|-------------------|--------|--|
| Projector Search    | Delete | Export | Import | Reload |                  |        |                   |        |  |
| No MAC              | IPv4   | S/N    | Model  | Name   | Keycode(ET-UK20) | Status | Keycode(ET-CUK10) | Status |  |
|                     |        |        |        |        |                  |        |                   |        |  |
|                     |        |        |        |        |                  |        |                   |        |  |
|                     |        |        |        |        |                  |        |                   |        |  |
|                     |        |        |        |        |                  |        |                   |        |  |
|                     |        |        |        |        |                  |        |                   |        |  |
|                     |        |        |        |        |                  |        |                   |        |  |
|                     |        |        |        |        |                  |        |                   |        |  |

If the connection test is successful, the following screen appears. Click [OK] to close the screen.





### Method 2: Method involving file operation

### **1** Have the key code ready.

The key code is indicated on the key code label of the upgrade kit (ET-UK20) or the Auto Screen Adjustment upgrade kit (ET-CUK10).

# **2** Start the software application, and display the main screen.

"Adjustment and Settings – Main screen" (page 37)

### **3** On the [File] menu, select [Activation] - [Export Equipment Profile] - [ET-UK20/ET-CUK10].

- All the projectors to which the upgrade kit (ET-UK20) or the Auto Screen Adjustment upgrade kit (ET-CUK10) is not applied will be targets for operation.
- All connected projectors will be displayed in the common operation area. However, the operation cannot be performed while two or more of these projectors are selected.
- In the common operation area, an asterisk (\*) appears to the left of projector names for which the upgrade kit (ET-UK20) has not been applied. You can check whether the Auto Screen Adjustment upgrade kit (ET-CUK10) is applied when using the Auto Screen Adjustment function.



The file save screen is displayed.

- **4** Specify the save destination, name the file, and save.
  - The default file name is "SERIAL.LST."

When the confirmation screen for saving the file appears, click [OK].



5 Start the web browser, and log in to PASS on the following website.

https://docs.connect.panasonic.com/projector/pass

6 Click the activation button in the side menu of the top page, and follow the on-screen instructions to perform key code registration, etc.

Register the key code readied in step 1 and the file (default file name: SERIAL.LST) saved in step 4 to PASS to acquire the activation code file (default file name: ACTIVE.LST).

 The activation codes for the upgrade kit (ET-UK20) and the Auto Screen Adjustment upgrade kit (ET-CUK10) must be acquired separately.

### **7** Close the web browser.

8 On the [File] menu, select [Activation] - [Activate License] - [ET-UK20] or [ET-CUK10].

The file selection screen is displayed.

| E    | Geometry Manager Pro  |   |                               |       |                      |                     |
|------|---|---|-------------------------------|-------|----------------------|---------------------|
| File | Edit View Tools Version   |   |                               |       |                      |                     |
|      | Open File (Current Tab)<br>Open File (One Projector)<br>Open File (All Projectors)<br>Open File (Connection Ophy)   |   | ens Setting Geometry Edge Ble | nding | Uniformity Bri       | ghtness Con<br>Lens |
|      | Save File (One Projector)<br>Save File (One Projector)<br>Save File (One Projector) As<br>Save File (All Projectors) As<br>Save File (Connection Only) As |   | <b>±</b>                      |       |                      | 1. LEI<br>2. LEI    |
|      | Reset Data (Current Tab)<br>Reload (Current Tab)  |   |                               |       | ▶ ₩                  | 3. LE<br>4. LE      |
|      | Activation  | > | Export Equipment Profile      | >     |                      |                     |
|      | Export  | > | Activate License              | >     | ET-UK20              |                     |
|      | Key Config<br>Exit  |   | ¥                             |       | ET-CUK10<br>ET-CUK10 | P                   |
|      |   |   |                               |       | Home Position        |                     |

**9** Select the activation code file (default file name: ACTIVE.LST) acquired in step 6. When activation is complete and the confirmation screen appears, click [OK].



# Perform the computer activation

This section describes computer activation.

### Method 1: Activation directly from this software

### **1** Have the keycode ready.

The keycode is indicated on the keycode label of the Auto Screen Adjustment upgrade kit (PC) (ET-CUK10P).



2 Start this software, and display the Connection Setting screen.

**3** Select [Activation(ET-CUK10P)] – [Direct Procedure] from the [Option] menu of the Connection Setting screen.

| Activation(ET-CUK10P) ><br>Activation(ET-UK20/ET-CUK10)<br>Display Theme ><br>Command Control ><br>Service Password<br>Version<br>10.73.182.40 / 255.255.254.0<br>Port:<br>User Name:<br>Password: | Direct Procedure ><br>File-based Procedure ><br>0 . 8<br>1024 |
|--|---|
| Activation(ET-UK20/ET-CUK10)<br>Display Theme ><br>Command Control ><br>Service Password<br>Version<br>10.73.182.40 / 255.255.254.0<br>Port:<br>User Name:<br>Password:                            | File-based Procedure >  |
| Display Theme > Command Control > Service Password Version 10.73.182.40 / 255.255.254.0 Port: User Name: Password:   | 0 . 8   |
| Command Control ><br>Service Password Version 10.73.182.40 / 255.255.254.0 Port: User Name: Password:  |   |
| Service Password           Version           10.73.182.40 / 255.255.254.0           Port:           User Name:           Password:   | 1024  |
| Version  10.73.182.40 / 255.255.254.0  Port: User Name: Password:  | 1024  |
| 10.73.182.40 / 255.255.254.0           Port:           User Name:           Password:  | 1024  |
| 10.73.182.40 / 255.255.254.0           Port:           User Name:           Password:  | 1024  |
| Port:<br>User Name:<br>Password:   | 1024  |
| User Name: Password:   |   |
| Password:  |   |
|  | $\bigcirc$  |
| O Load from file   | Select.   |

The [PC Activation] screen appears.

**4** Double-click the area displaying the keycode or status in the [PC Activation] screen.



The [Input Keycode] screen appears.

# **5** Enter the keycode and click the [OK] button in the [Input Keycode] screen.

[OK] is enabled when you enter all 25 digits of the keycode.

| Input Keycode |               |        | ×  |
|---------------|---------------|--------|----|
| ET-CUK10P:    | · · · · · · · | -      |    |
|               |               | Cancel | ОК |

If you click [Cancel], all digits of the input keycode will be discarded.

# **6** Check that [Status] has become "Keycode registered".

| PC Activation |                                 |                    | ×  |
|---------------|---------------------------------|--------------------|----|
| License       | Keycode                         | Status             |    |
| ET-CUK10P     | C0010-P****_*****_*****         | Keycode registered |    |
|               |                                 |                    |    |
| Se            | rver Connection Test Activation | Deactivation       | it |

# 7 Click the [Activation] button.

| PC Activation        |                                  |                              | ×  |
|----------------------|----------------------------------|------------------------------|----|
| License<br>ET-CUK10P | Keycode<br>C0010-P****-****-**** | Status<br>Keycode registered |    |
| Ser                  | ver Connection Test              | Deactivation                 | it |

## 8 Activation is complete when [Status] becomes "Activated".

| PC Activation |                                |              | ×    |
|---------------|--------------------------------|--------------|------|
| License       | Keycode                        | Status       |      |
| ET-CUK10P     | C0010-P****_*****_*****        | Activated    |      |
|               |                                |              |      |
| Ser           | ver Connection Test Activation | Deactivation | Exit |

Exit the software by clicking [Exit].

### Note

• To test connecting with the server, click [Server Connection Test].



If the connection test is successful, the following screen appears. Click [OK] to close the screen.



If the connection test failed, the following error message appears. In this case, revise the Internet settings of the computer and then perform the connection test again.

| Geometry Manager Pro            | × |
|---------------------------------|---|
|                                 |   |
|                                 |   |
| Failed to connect to the server |   |
|                                 |   |
|                                 |   |
| ОК                              |   |
|                                 |   |

• When computer activation is completed, the [AUTO ADJUST] button at the top right of the main screen changes as shown below.

| i 💽 AUTO ADJUST 从 |
|-------------------|
| I AU              |

### Method 2: Activation via a website

### **1** Have the key code ready.

The key code is indicated on the key code label of the Auto Screen Adjustment upgrade kit (PC) (ET-CUK10P).



- **2** Start the software application, and display the Connection Setting screen or the main screen.
- **3** Select [Activation(ET-CUK10P)] [File-based Procedure] [Export Volume Serial] from the [Option] menu of the Connection Setting screen or [Activation] [Export Equipment Profile] [ET-CUK10P] from the [File] menu of the main screen.

| 🥮 Geometry Manager Pro   |            | ×                              |   |
|--|------------|--------------------------------|---|
| Option   |            |                                |   |
| Activation(ET-CUK10P)  | >          | Direct Procedure               |   |
| Activation(ET-UK20/ET-CUK10)   |            | File-based Procedure >         | Export Volume Serial                                  |
| Display Theme<br>Command Control<br>Service Password   | > (<br>> ( | 0.8                            | Activate Software License                             |
| Geometry Manager Pro   |            |                                |   |
| Open File (Current Tab)<br>Open File (Our Projector)<br>Open File (All Projectors)<br>Open File (Connection Only)            |            | ens Setting Geometry Edge Bler | nding Uniformity Brightness Control Co<br>Lens Memory |
| Save File (One Projector)<br>Save File (One Projector) As<br>Save File (All Projectors) As<br>Save File (Connection Only) As |            | *                              | 1. LENSMEMO<br>2. LENSMEMO                            |
| Reset Data (Current Tab)<br>Reload (Current Tab)   |            |                                | 3. LENSMEMO   |
| Activation   | >          | Export Equipment Profile       | > ET-UK20 / ET-CUK10                                  |
| Export   | >          | Activate License               | > ET-CUK10P   |
| Key Config<br>Exit   |            | ¥                              | 6. LENSMEMC   |

The [Input Keycode] screen appears.

### **4** In the [Input Keycode] screen, enter the key code indicated on the key code label.

The key code consists of 25 single-byte alphanumeric characters. All letters should be uppercase, and 5 characters should be entered in each box.

| Input Keycode  | × |
|--|---|
|  |   |
| OK Cancel  |   |
| Your Volume Serial Number  |   |
|  |   |
| *Log in the PASS(Refer to the instruction manual for URL) web site, and visit "activation" page. |   |
| * Then follow the procedures, upload the exported Volume Serial Number                           |   |
| * (SERIAL.LST) file OR enter your Volume Serial Number manually on to PASS.                      |   |
|  |   |

Click [OK] to display the file save screen.

### Note

If key code input fails 10 times in a row, you will not be able to enter the key code for 24 hours. If that happens, wait until input becomes possible and then try again.

## **5** Save the Volume Serial file ("SERIAL.LST") to any location.



You can change the file name as desired, but do not change the extension (.LST). To return to the [Input Keycode] screen, click [Cancel] in the file save screen. When saving of the file is completed, the [Input Keycode] screen closes. Once the file has been saved, the volume serial number (20 single-byte alphanumeric characters) appears in the [Input Keycode] screen.

If you will enter this volume serial number manually to download an activation code file later in this procedure, write down this code and take care not to lose it before activation is completed.



**6** Start the web browser, log in to PASS on the following website, and click the [Activation] button from the side menu of the member top page.

https://docs.connect.panasonic.com/projector/pass

### 7 Follow the on-screen instructions to download the activation code file.

Download the activation code file ("ACTIVE.LST") using one of the following two methods.



### When using a volume serial file (default file name: SERIAL.LST)

Follow the on-screen instructions to upload the volume serial file to PASS, enter the key code, and download the activation code file ("ACTIVE.LST") to any location.

- You can change the activation code file name as desired, but do not change the extension (.LST).
- The activation code (30 single-byte alphanumeric characters) is displayed after the activation code file is downloaded, but it is not used when using the activation code file ("ACTIVE.LST") to perform activation later in this procedure. If you will enter the activation code manually to perform activation, write down this code and take care not to lose it before activation is completed.

### When entering the volume serial number manually

Follow the on-screen instructions to register the volume serial number to PASS, enter the key code, and download the activation code file ("ACTIVE.LST") to any location.

- The volume serial number consists of 20 single-byte alphanumeric characters. All letters should be uppercase, and 5 characters should be entered in each box.
- You can change the activation code file name as desired, but do not change the extension (.LST).
- The activation code (30 single-byte alphanumeric characters) is displayed after the activation code file is downloaded, but it is not used when using the activation code file to perform activation later in this procedure. If you will enter the activation code manually to perform activation, write down this code and take care not to lose it before activation is completed.

### **8** Close the web browser.

### **9** Perform activation.

Perform activation using one of the following two methods.



### When using the activation code file (default file name: ACTIVE.LST)

 Select [Activation(ET-CUK10P)] - [File-based Procedure] - [Activate Software License] from the [Option] menu of the Connection Setting screen or [Activation] - [Activate License] - [ET-CUK10P] from the [File] menu of the main screen and then click the [By import "Activation Code" file] button.

| Geometry Manager Pro<br>Option |   | ×                      |                           |
|--------------------------------|---|------------------------|---------------------------|
| Activation(ET-CUK10P)          | > | Direct Procedure       |                           |
| Activation(ET-UK20/ET-CUK10)   |   | File-based Procedure > | Export Volume Serial      |
| Display Theme                  | > | 0.8                    | Activate Software License |
| Command Control                | > | • • • •                |                           |
| Service Password               |   | 0.10                   |                           |

| Open File (Current Tab)  |         |   |          |                    |                   |
|--|---------|---|----------|--------------------|-------------------|
| Open File (One Projector)<br>Open File (All Projectors)<br>Open File (Connection Only)                                       |         | ens Setting Geometry Edge   | Blending | Uniformity Brightn | ess Contr<br>Lens |
| Save File (One Projector)<br>Save File (One Projector) As<br>Save File (All Projectors) As<br>Save File (Connection Only) As |         | *   |          |                    | 1. LEN<br>2. LEN  |
| Reset Data (Current Tab)<br>Reload (Current Tab)   |         |   |          | <b>bb bb</b>       | 3. LEN<br>4. LEN  |
| Activation   | >       | Export Equipment Profile  | >        |                    |                   |
| Export   | >       | Activate License  | >        | ET-UK20            | N.                |
| Key Config   |         |   |          | ET-CUK10           | _                 |
| Exit   |         | ¥   |          | ET-CUK10P          |                   |
|  |         |   |          | Home Position      |                   |
| Activation   |         |   |          | ×                  |                   |
|  | How you | i input Activation Code into the pro<br>By import "Activation Code" file<br>By entering "Activation Code" | igram?   |                    |                   |

2) Select the activation code file (default file name: ACTIVE.LST) downloaded from PASS.

### When entering the activation code manually

 Select [Activation(ET-CUK10P)] - [File-based Procedure] - [Activate Software License] from the [Option] menu of the Connection Setting screen or [Activation] - [Activate License] - [ET-CUK10P] from the [File] menu of the main screen and then click the [By entering "Activation Code"] button.

| ption   |   |         |   |  |                   |
|---|---|---------|---|--|-------------------|
| Activation(ET-  | CUK10P)   | >       | Direct Procedure  |  |                   |
| Activation(ET-<br>Display Theme<br>Command Cor<br>Service Passwo  | UK20/ET-CUK10)<br>:<br>htrol<br>ord   | >       | File-based Procedure         >           0         .         8           0         .         10             | Export Volume Serial<br>Activate Software Li     | l<br>cense        |
| Geometry Mana<br>le Edit View<br>Open File (Curr<br>Open File (One<br>Open File (All F                              | ger Pro<br>Tools Version<br>rent Tab)<br>Projector)<br>Projectors)                |         | ens Setting Geometry Edge Blend   | ing Uniformity Brightness                        | Contr             |
| Open File (Con<br>Save File (One I<br>Save File (One I<br>Save File (All Pr<br>Save File (Conn<br>Percet Date (Conn | nection Only)<br>Projector)<br>Projector) As<br>rojectors) As<br>rection Only) As |         | *   | 1  | LEN<br>LEN<br>LEN |
| Reload (Curren  | t Tab)  |         |   |  | LEN:              |
| Activation  |   | >       | Export Equipment Profile  | , <b>F</b>                                       |                   |
| Export<br>Key Config<br>Exit  |   | >       | Activate License  | ET-UK20     ET-CUK10     ET-CUK10P Home Position | 4                 |
|   | Activation  |         |   | ×  |                   |
|   |   | How you | input Activation Code into the program<br>By import "Activation Code" file<br>By entering "Activation Code" | ,<br>]<br>]                                      |                   |

- 2) After downloading the activation code file, enter the displayed activation code.
  - The activation code consists of 30 single-byte alphanumeric characters. All letters should be capitalized, and 5 characters should be entered for each box.



# **10** When activation is completed, the activation code is registered to the computer.

When the confirmation screen appears, click [OK].

### Note

- If activation failed, check the following again.
  - The key code input in the [Input Keycode] screen in step 4 and the key code input when uploading the volume serial file (default file name: SERIAL.LST) to PASS or registering the volume serial number to PASS are different.
  - The volume serial file or the volume serial number created in step 5 and the volume serial file uploaded to PASS when generating the activation code or the volume serial number entered when registering to PASS are different.
- When computer activation is completed, the [AUTO ADJUST] button at the top right of the main screen changes as shown below.

|--|

## Perform the computer deactivation

Deactivation is possible when computer activation was performed directly from this software (page 23). Deactivation enables the keycode to be used for activation on another computer.

**1** Start this software, and display the Connection Setting screen.

**2** Select [Activation(ET-CUK10P)] – [Direct Procedure] from the [Option] menu of the Connection Setting screen. The [PC Activation] screen appears.

**3** Check that the keycode is already entered and [Status] is "Activated" in the [PC Activation] screen.

| PC Activation                           |                                  |              | × |
|---|----------------------------------|--------------|---|
| License                                 | Keycode                          | Status       |   |
| ET-CUK10P C0010-P****-*****-*****-***** |                                  | Activated    |   |
| Se                                      | erver Connection Test Activation | Deactivation | t |

### **4** Click the [Deactivation] button.

A confirmation message appears. Click [OK] to perform deactivation. Click [Cancel] to not perform deactivation.

## **5** Deactivation is complete when [Status] becomes "Keycode Registered".

| PC Activation |                                 |                    | ×   |
|---------------|---------------------------------|--------------------|-----|
| License       | Keycode                         | Status             | ]   |
| ET-CUK10P     | C0010-P****_*****_*****         | Keycode registered |     |
| Ser           | rver Connection Test Activation | Deactivation       | cit |

### Note

• When computer deactivation is completed, the [AUTO ADJUST] button at the top right of the main screen changes as shown below.





**Before deactivation** 

After deactivation

# Functions which are expanded as a result of activation

Listed below are the functions which are expanded when the activation process has been completed.

### Note

Some projectors will be in the state with the functions enabled or functions expanded without having to activate the upgrade kit (ET-UK20) and Auto Screen Adjustment upgrade kit (ET-CUK10).

### ■ Upgrade kit (ET-UK20)

|   | Functio                         | n   | Activation not completed  | Activation completed |
|---|---------------------------------|---|---|----------------------|
| Grid pattern dots   |                                 | olution of the projector<br>) dots or 3840 x 2400 | 2×2 to 11×11  | 2×2 to 41×26         |
| Grid pattern       When the resolution of the projector is 1920 x 1200 dots or 3840 x 2400 dots         Grid pattern       When the resolution of the projector is 1400x1050 dots         When the resolution of the projector is 1400x1050 dots       Vertical keystone correction         Adjustment ranges       Vertical keystone correction         Horizontal keystone       Vertical arcs         Pincushion       Pincushion         Rotational correction       Flip Vertical         Flip Horizontal       Flip Vertical         Iniformity       Flip Vertical Flip Horizontal | 2×2 to 11×11                    | 2×2 to 29×22                                      |   |                      |
| Geometry  |                                 | Vertical keystone correction                      | ±40°  | ±45°                 |
|   | Adjustment<br>ranges            | Horizontal keystone correction                    | ±15°  | ±40°                 |
|   |                                 | Vertical arcs                                     | ±50   | ±100                 |
| Correction  |                                 | Horizontal arcs                                   | ±50   | ±100                 |
|   |                                 | Pincushion  | ±50   | ±100                 |
|   | Rotational co                   | rrection  | _   | $\checkmark$         |
|   | Flip Vertical<br>Flip Horizonta | al  | _   | $\checkmark$         |
|   | Flexible Corre                  | ection  | _   | $\checkmark$         |
| Uniformity  | Flip Vertical<br>Flip Horizonta | al  | projector $2 \times 2 \text{ to } 11 \times 11$ stone $\pm 40^{\circ}$ ceystone $\pm 15^{\circ}$ s $\pm 50$ arcs $\pm 50$ $  -$ | $\checkmark$         |
| Masking   | ·                               |   | _   | $\checkmark$         |

 $\sqrt{\cdot}$  Can be used.

-: Cannot be used.

# Auto Screen Adjustment upgrade kit (ET-CUK10) / Auto Screen Adjustment upgrade kit (PC) (ET-CUK10P)

This allows simple automatic adjustment of geometry correction, edge blending, color, and brightness according to the shape of the screen through use of a camera.

### Note

- Both "Geometry Manager Pro" and the "Auto Screen Adjustment plug-in software" must be installed to use the Auto Screen Adjustment function.
- To use the Auto Screen Adjustment function, prepare a camera separately. If "Camera connection" (page 115)

# Starting the application

Double-click the shortcut icon on the desktop.

When the application starts, the connection settings screen appears.

| PAddress          |                         |              |
|-------------------|-------------------------|--------------|
| Start IP Address: | 192 . 168 . 0 . 8       |              |
| End IP Address:   |                         |              |
| O Network         |                         |              |
| 10.73.1           | 82.40 / 255.255.254.0 🗸 | LAN connec   |
| Port:             | 1024                    |              |
| User Name:        |                         |              |
| Password:         | 0                       |              |
|                   |                         |              |
| O Load from file  |                         |              |
| File path:        | Select.                 | File connect |
|                   |                         |              |
|                   |                         |              |
|                   |                         |              |

Select [ • IP Address ] or [ • Network ] to use a LAN connection for the projector and computer, and select [ • Load from file ] to connect by loading a saved file.



|  | _ |
|--|---|
| Command Control  |   |
| Control command data set in the Command Control screen (registered commands and registered scripts) can be |   |
| saved to a file or read from a file.   |   |
| ☞ "Projector Control" (page 111)   |   |
| Import Commands  |   |
| This reads control command data from a file.   |   |
| Export Commands  |   |
| This saves control command data to a file.   |   |
| Service Password   |   |
| This menu is used to support maintenance. It is not normally used.   |   |
| Version  |   |
| This is where the application's version information can be checked.  |   |

### LAN connection

Select the search method for the projector to be connected, and configure the following settings.

#### **IP Address**

Select this to search by specifying the IP address of the projector to be connected.

#### Start IP Address:

Input the IP address of the projector to be connected to the computer. When searching for a connected projector, enter an IP address to start searching.

#### End IP Address:

When searching for a connected projector, select the check box and enter an IP address to end searching.

#### Network

Select this to search for a projector within the same network as your computer. The IP address and subnet mask of your computer are displayed in the list.

#### Port

Set the number of port on the computer for connecting with the projector.

#### **User Name**

Input the user name used for WEB control of the connected projector.

#### Password

Input the password used for WEB control of the connected projector. You can switch between displaying the input password as is or displaying it replaced with "•" by clicking the icon on the right of the input area.

• Displays the password replaced with "•". (default)

🔌: Displays the password as is.

### Note

- Specify the same network address for the Start IP Address and End IP Address. If the search range is too wide, an error will occur when you start the search.
- In Network, multiple IP addresses and subnet masks are displayed in the list if your computer has multiple network interfaces. Select the address that is connected to the same network as the projector to be connected from the list.
- Enter the user name and password of the account with administrator privileges for the projector to be connected.

When not searching for a connected projector, click [Connect] after configuring the settings to display the data transfer method confirmation screen. Click the [OK] button on the screen to display the main screen.

 ${\ensuremath{\en$ 

### Note

• If the check box is selected on the data transfer method confirmation screen when you click the [OK] button, the confirmation screen will not be displayed subsequently.

| Geometry Manager Pro                                 | × |
|--|---|
| Current data transfer to projector is set to "Auto". |   |
| ок   |   |

When searching for a connected projector, click [Search] after configuring the settings to start the search according to the settings. The projector search screen is displayed while the search is in progress.

|                       |           |            |               |         | - Cancel   |
|-----------------------|-----------|------------|---------------|---------|--|
| Geometry Manager Pro  |           |            |               | ×       | Cancel the search.   |
|                       |           |            |               | Cancel  | When a search is canceled, projectors that have been       |
| Available projectors: | 2 Select  | ted: 2 Upp | er limits: 99 |         | detected up to that point will be displayed.               |
| IP Address            | Model     | Name       | Status        |         | Composited pupils story list                               |
| 192.168.0.9           | PT-DZ780  | NAME5061   |               |         | - Connected projector list                                 |
| 192.168.0.10          | PT-RZ670  | NAME0203   |               |         | Displays a list of projectors that were detected via the   |
|                       |           |            |               |         | search.  |
|                       |           |            |               |         |  |
|                       |           |            |               |         | - Connect  |
|                       |           |            |               |         | Connect to the selected projectors, and display the data   |
|                       |           |            |               |         | transfer method confirmation screen. Click the IOK1 button |
|                       |           |            |               |         | on the screen to display the main screen a "Adjustment     |
|                       |           |            |               |         | and Settings – Main screen" (nage 37)                      |
| <                     |           |            |               | >       | and oottings main of control (page of )                    |
| Select All C          | ilear All |            |               | Connect |  |
|                       |           |            |               |         | Clear All  |
|                       |           |            |               |         | Clear selection of all detected projectors.                |
|                       |           |            |               |         |  |
| L                     |           |            |               |         | – Select All   |
|                       |           |            |               |         | Select all detected projectors.                            |

When [Exit] is clicked, the application is exited without establishing a connection.

### File connection

Select [ ( Load from file ] and configure the following settings.

#### File path

Specify a file (with .prjc or .prjs extension) saved in the past. Click [Select] to open the file selection screen.

Click [Connect] after configuring the settings to display the data transfer method confirmation screen (page 35). Click the [OK] button on the screen to display the main screen. If "Adjustment and Settings – Main screen" (page 37) When [Exit] is clicked, the application is exited without establishing a connection.

### Note

The following screen appears when you connect to a projector for which the upgrade kit (ET-UK20) has not been applied.

| Geometry Manager Pro  |  |  |  |  |  |
|---|--|--|--|--|--|
| This projector has limitation on the following functions.<br>- Geometry<br>- Uniformity<br>- Masking                                |  |  |  |  |  |
| Please check the following:<br>- Does the projector support the upgrade kit?<br>- Is the projector activated using the upgrade kit? |  |  |  |  |  |
| ОК  |  |  |  |  |  |

# **Exiting the application**

To exit the connection main screen, either select [File] and then [Exit] or click the  $\boxtimes$  button at the top right of the window. To exit the connection settings screen, either click the [Exit] button or click the  $\boxtimes$  button at the top right of the window.
# **Adjustment and Settings**

# Main screen

The main screen consists of the following five general areas and the [AUTO ADJUST] (Auto Screen Adjustment) button.

| Main menu  | Adjustm  | ent area                          | [AUTO ADJUST]<br>(Auto Screen Adjustment) |
|--|--|-----------------------------------|---|
| Image: Geometry Manager Pro      File: Edit View Tools Version      Icon menu      Image: Ima  |  |                                   | - 🗆 ×                                     |
| Common<br>OSD ON<br>Status OFF<br>Status ON<br>Status OFF<br>Status OFF<br>Sta | Lens Setting  Geometry  Edge Blending  Uniformity  Brightness Control  Color Mat    Image: Setting Setting  Image: Setting S | Aching Masking Input Signal Other | nport FREE GRID                           |
|  | 01.1   |                                   |   |

# Note

- When using this application, keep the main power of the projector in the "on" setting.
- The [Power ON] operation will be enabled even when the projector is in the standby state. However, if the standby mode is set to [ECO] on a projector for which standby mode can be set, all operations including [Power ON] will be disabled. When using this application and performing the [Power ON] operation, set the projector's standby mode to [Normal]. Operations other than [Power ON] are not guaranteed when the projector is in the standby state.
- If the projector settings have been changed using a remote control, for instance, rather than the software application, the software application displays and projector settings may not match.

# Adjustment area

You can click the tabs in the adjustment area to switch between screens and perform various adjustments and operations. The modes in which these adjustments and operations are performed are called "editing modes."

# Main menu

#### File submenu

#### **Open File (Current Tab)**

This loads only the setting data of the current editing mode from a setting file (with .prj extension) saved on the computer.

• When this item is selected, a confirmation message appears. Proceed with operation as instructed in the message.

# Open File (One Projector)

This loads all the editing mode settings from the setting file (with .prj extension) saved on the computer into the selected projector.

When this menu item is selected, the loaded settings are reflected in the target projector even if Auto Transfer (at the bottom of the common operation area) has not been checked.

• When this item is selected, a confirmation message appears. Proceed with operation as instructed in the message.

# Note

When the setting file is loaded, the settings may not be reflected correctly if the selected input signal is not the same as the one when the setting file was saved.

#### **Open File (All Projectors)**

This loads a file saved with [Save File (All Projectors) As...].

When this item is selected, the loaded settings are reflected in all the target projectors that are connected even if

Auto Transfer (at the bottom of the common operation area) is not checked.

• When this item is selected, a confirmation message appears. Proceed with operation as instructed in the message.

#### Note

When the file is loaded, an error message is displayed if the target projector is not connected to the network. When the connection of the target projector to the network is recognized, the connection is established and the loaded settings are reflected automatically.

#### Open File (Connection Only)

This loads a setting file (with .prjc or .prjs extension) saved to the computer and reflects the status of the connection with the saved projector.

#### Note

- When the file is loaded, an error message will be displayed if the target projector is not connected to the network, but a connection will be established automatically when the computer recognizes that the target projector is connected to the network.
- Even if a setting file (with .prjs extension) is selected, the settings of the projector target for connection are not reflected.

#### Save File (One Projector)

This saves the settings being edited, overwriting the previous settings in the current setting file (with .prj extension). When the file is saved for the first time, a message appears prompting the user to provide a filename.

#### Save File (One Projector) As...

This saves the settings now being edited in a file under the filename (with .prj extension) provided.

#### Save File (All Projectors) As...

This saves the setting information of all the currently connected projectors as a single All Project File (with .prjs extension) on the computer.

The layout information, IP addresses, user names, and passwords of the projectors are also encrypted and saved in the All Project File.

#### Save File (Connection Only) As...

This saves the connection information of all the currently connected projectors as a single file (with .prjc extension) on the computer.

The IP addresses, user names, and passwords of the projectors are also encrypted and saved.

#### Reset Data (Current Tab)

This sets the current editing mode settings to the initial statuses.

• When this item is selected, a confirmation message appears. Proceed with operation as instructed in the message.

#### **Reload (Current Tab)**

This cancels the settings currently being edited using the application, and loads the same settings again from the projector.

• When this item is selected, a confirmation message appears. Proceed with operation as instructed in the message.

#### Activation

#### Export Equipment Profile (ET-UK20 / ET-CUK10 / ET-CUK10P)

Creates a file to be registered in PASS. This file is required to acquire the activation code file. <sup>(C)</sup> "Activation" (page 12)

#### Activate License (ET-UK20 / ET-CUK10 / ET-CUK10P)

Select [ET-UK20], [ET-CUK10], or [ET-CUK10P] and then perform activation.

(Functions which are expanded as a result of activation" (page 32)

- The activation code file is required.
  "Activation" (page 12)
- If the "Auto Screen Adjustment plug-in software" is not installed, [ET-CUK10] or [ET-CUK10P] cannot be selected.
  "Installing the "Auto Screen Adjustment plug-in software" (page 8)

#### Export

#### Multi Monitoring and Control Software

This saves the data in the file format (with .ugk extension) used for the "Multi Monitoring & Control Software". The file is for registering the data of the projectors already registered in the software application in the "Multi Monitoring & Control Software" for monitoring and control purposes.

For details, refer to the operation manual of the "Multi Monitoring & Control Software".

#### Key Config

This configures the key settings for using a gamepad to operate some functions of this software.

@" "Operation by Gamepad" (page 152)

#### Exit

Exits the software.

• When this item is selected, a confirmation message appears. Proceed with operation as instructed in the message.

# Edit submenu

#### Undo

This discards the software application and projector settings currently being edited. It returns these settings to the status before the setting data is sent.

#### Redo

This returns the settings to the ones before the Undo operation is performed.

# Note

- Undo and Redo can be used up to 50 times during a single setting process (for each editing mode).
- The Undo and Redo logs are cleared if you switch to another editing mode or projector.

The following Edit submenu items are enabled only in certain editing modes. For details, refer to the respective reference pages.

#### Lock

"Adjustment and Settings – Geometry Correction" (page 57)

#### Unlock

P "Adjustment and Settings – Geometry Correction" (page 57)

#### Free

@ "Adjustment and Settings – Geometry Correction" (page 57)

#### Reset

"Adjustment and Settings – Geometry Correction" (page 57), "Adjustment and Settings – Uniformity" (page 79), "Adjustment and Settings – Masking" (page 91)

#### **Flip Vertical**

"Adjustment and Settings – Geometry Correction" (page 57), "Adjustment and Settings – Uniformity" (page 79), "Adjustment and Settings – Masking" (page 91)

#### **Flip Horizontal**

"Adjustment and Settings – Geometry Correction" (page 57), "Adjustment and Settings – Uniformity" (page 79), "Adjustment and Settings – Masking" (page 91)

#### Area Select

@ "Adjustment and Settings – Uniformity" (page 79)

#### Point Select

(Page 79) \*\* Adjustment and Settings - Uniformity" (page 79)

# View submenu

#### Tool Bar, Status Bar, Sub Window, Layout Window

Enter a check mark, and select whether the items are to be displayed. In the initial status, "Tool Bar" and "Status Bar" are displayed.

#### **Display Theme**

#### Dark Gray / Light Gray

These switch the theme (color scheme) of this software.

#### **Live View**

This displays live view images.

@""Live View" (page 147)

#### Auto Transfer

When a check mark is entered for this and then settings are changed, the changed settings are reflected in the projector as soon as they are changed.

The state when this software is exited will continue when the software starts next time.

• Entering a check mark causes a check mark to appear in Auto Transfer in the lower left of the common operation area.

#### **Image Direction**

#### Landscape / Landscape (Flipped) / Portrait (Clockwise) / Portrait (Counterclockwise)

Switch this to match the direction of images projected by the projector and the display in this software.

- P "Adjustment and Settings Geometry Correction Geometry screen" (page 57)
- P "Adjustment and Settings Edge Blending Edge Blending screen" (page 71)
- P "Adjustment and Settings Uniformity Uniformity screen" (page 80)
- (37) "Adjustment and Settings Masking Masking screen" (page 92)

# Note

- This setting is not linked with the portrait setting of the projector. Configure the portrait setting of the projector separately.
- Set this setting individually for each connected projector.

#### Line Color

#### White / Red / Green / Blue

These perform the same operations as the icon menu [White], [Red], [Green] and [Blue] on the Geometry screen. \* "Adjustment and Settings - Geometry Correction - Geometry screen" (page 57)

# **Coordinate Information**

#### None / Absolute / Relative

These select the mode in which the coordinates of the control points are displayed. \* Adjustment and Settings - Main screen - Coordinate Information" (page 49)

#### **Grid Resolution**

#### Use Square Grid / X / Y

These select the mode in which the coordinates of the control points are displayed. "Adjustment and Settings - Geometry Correction - Geometry screen" (page 57)

#### Zoom

x1/8 / x1/4 / x1/2 / x1 / x2 / x3 / x4 / x5 / x6 / x7 / x8

The editing area is zoomed in or out.

#### Masking Marker

#### Red / Green / Blue / Orange

These select whether to display the control points.

If "Adjustment and Settings - Masking - Masking screen" (page 92)

# Tools submenu

# **Command Control**

This displays the Command Control screen.

Projector Control" (page 111)

# Auto Screen Adjustment

This displays the Auto Screen Adjustment screen.

This performs the same operation as the [AUTO ADJUST[ (Auto Screen Adjustment) button.

(auto Screen Adjustment) button" (page 50)

# Note

This cannot be selected if the "Auto Screen Adjustment plug-in software" is not installed.

# Version submenu

# About Geometry...

This displays version information for "Geometry Manager Pro".

# **Adjustment and Settings**

#### Icon menu

This icon menu is used in all the editing modes.

For details on the icon menu items used in each editing mode, refer to the description of the mode concerned.



# Dpen File (One Projector)

This performs the same operation as [Open File (One Projector)] on the File submenu.

# Save File (One Projector)

This performs the same operation as [Save File (One Projector)] on the File submenu.

# 🚰 Reload (Current Tab)

This performs the same operation as [Reload (Current Tab)] on the File submenu.

#### Undo

This performs the same operation as [Undo] on the Edit submenu.

#### Redo

This performs the same operation as [Redo] on the Edit submenu.

#### E Layout Window

Each time this is clicked, the Layout Window screen is switched between displayed and cleared.

On the Layout Window, the positions of the projectors can be changed by means of mouse operations.

When a projector position is moved, the overall layout is automatically corrected based on the projector which was moved. Main screen operations can be performed even while the Layout Window is displayed.

The Layout Window screen can be displayed also by selecting [Layout Window] on the View submenu.

The Layout Window screen below is an example when eight projectors are connected.



# **Reset Data (Current Tab)**

This performs the same operation as [Reset Data (Current Tab)] on the File submenu.

# Dpen File (Current Tab)

This performs the same operation as [Open File (Current Tab)] on the File submenu.

# **Common operation area**

The common operation area houses the operations which can be used in all the editing modes.



#### **Projector list**

This list displays the projector numbers, projector names and IP addresses in the sequence in which the projectors were connected.

The projector currently selected is the one whose data is being edited. Any projector on the list can be selected to switch the projector whose data is to be edited.

#### Note

**Display Grid Lines** 

- Multiple projectors can be selected as targets for operations by holding the Ctrl key while clicking. In that case, the following functions can be operated.
   Power ON/Standby, Shutter Close/Shutter Open, OSD ON/OSD OFF, Status ON/ Status OFF, Status Page, Test Pattern, Display Projector Name, Grid Resolution,
- When a projector for which the upgrade kit (ET-UK20) has not been applied is connected, an asterisk (\*) appears to the left of that projector name. An error message will appear if you connect to this projector and attempt to use the extended functions. If (page 12)
- When a projector on the list is selected and then double-clicked, the WEB control screen opens. For details on the WEB control screen, refer to the operating instructions of the projector.
- When the mouse pointer is placed over a projector on the list, a tooltip appears and shows the model number and resolution of that projector.
- If you change the projector authentication information (user name, password, etc.) by WEB control after connecting the projector to this software, you will lose ability to connect to or control the projector using this software.

In that situation, right-click on the projector in the list, select [Property], open the [Property] screen, and correct the authentication information.

@" "[Property] Screen" (page 45)

#### 🛧 I 🐥

These change the order of the projectors in the list.

Select a projector in the list and then click the up arrow button to move it up one place in the list or click the down arrow button to move it down one place in the list.

# Note

- Multiple projectors cannot be moved at the same time.
- When the up arrow button is clicked while the very top projector is selected or when the down arrow button is clicked while the very bottom projector is selected, the projector does not move.
- The results of moving the projectors are reflected in Layout Window.
  "Layout Window" (page 43)

#### Del

Click to remove the selected projector from the operating targets. When all the projectors are removed, the software is exited.



@ "Adjustment and Settings - Main screen - LAN connection destination selection screen" (page 46)



# [Property] Screen

45

#### LAN connection destination selection screen When Add is clicked, the LAN connection destination selection screen is displayed. A projector that is going to be connected now be set. **IP Address** Select this to search by specifying the IP address of the projector to be connected. Start IP Address: Input here the IP address of the projector to be connected. To search for a connected projector, enter an IP address to start searching. End IP Address: To search for a connected projector, select the check box and enter an IP address to end searching. 🥮 Geometry Manager Pro × Note Specify the same network address for the Start IP Address and End IP IP Address Address. 192 168 0 7 Start IP Address: • If the search range is too wide, an error will occur when you start the 192 168 0 10 search. End IP Address: O Network Network 192.168.0.201 / 255.255.255.0 Select this to search for a projector within the same network as your computer. 1024 Port: Note User Name: Multiple IP addresses and subnet masks are displayed in the list if your Password: 0 computer has multiple network interfaces. Select the address that is connected to the same network as the projector to be connected from the list. Connect Exit Port Set here the number of the port that is to be connected to the projector. **User Name** Input here the user name of the projector to be connected. Password Input here the password of the projector to be connected. You can switch between displaying the input password as is or displaying it replaced with "•" by clicking the icon on the right of the input area. O: Displays the password replaced with "•". 💘: Displays the password as is. Note • Enter the user name and password of the account with administrator privileges for the projector to be connected. Exit Click to cancel the connection with the projector and close the LAN connection destination selection screen. Connect / Search

When not searching for a connected projector, connection to the projector will be established according to the entered settings.

When searching for a connected projector, the projector search will start according to the entered settings.

A status screen is displayed while the search is in progress. P "Starting and Exiting the Application - Projetor Search Screen" (page 35) When the projector is connected successfully, the LAN connection destination selection screen is closed.



# Power ON/Standby

Click the left button to set the power of the selected projector to the "On" state or click the right button to set it to the standby state.

The setting is reflected in the projector even when a check mark has not been entered in Auto Transfer.

# Note

When the projector is in the standby state, no guarantees are made for any operations except [Power ON].

#### Shutter Close/Shutter Open

Click the left button to set the shutter of the selected projector to the "On" state or click the right button to set it to the "Off" state.

The setting is reflected in the projector even when a check mark has not been entered in Auto Transfer.

# OSD ON/OSD OFF

Click these to select to display (ON) or not display (OFF) the OSD menu on the images of the selected projector.

This operation is reflected in the projector even if a check mark has not been entered for Auto Transfer.

#### Status ON/Status OFF

Click these to select to display (ON) or not display (OFF) the status (information) on the images of the selected projector.

The setting is reflected in the projector even when a check mark has not been entered in Auto Transfer.

# Status Page

Click these to select the previous or next page of the status screen when the status is displayed on the projector's image.

The setting is reflected in the projector even when a check mark has not been entered in Auto Transfer

#### Command Control

Click to display the Command Control screen.

Projector Control" (page 111)

#### Test Pattern

Click to switch the image projected from the projector to the test pattern.

A test pattern supported by the selected projector can be selected.

If multiple projectors are selected, a test pattern commonly supported by the selected projectors can be selected.

#### Default value: OFF

The setting is reflected in the projector even when a check mark has not been entered in Auto Transfer.

# Note

- A user test pattern can be selected for a model that supports user test patterns. The user test patterns are displayed in the selection options as User1 to User3.
- A user image can be selected as a test pattern for a model that supports the user image functions of the projector. The user images are displayed in the selection options as User1 to User4.
- This software does not support registering, deleting, and renaming user test patterns and user images. Perform such operations using, for example, the OSD menu or Web control functions of the projector.

÷ 4 PROJECTOR1 (0.0.0.1) 02 PROJECTOR2 (0.0.0.2) PROJECTOR3 (0.0.0.3) 03 PROJECTOR4 (0.0.0.4) 04 05 PROJECTOR5 (0.0.0.5) 06 PROJECTOR6 (0.0.0.6) 07 PROJECTOR7 (0.0.0.7) PROJECTOR8 (0.0.0.8) 08 Add Del Rename Display Projector Name Power ON Standby Shutter Close Shutter Open OSD OFF OSD ON Status OFF Status ON Status Page Prev Next Command Control Test Pattern OFF  $\sim$ Image Direction  $\sim$ Landscape Grid Resolution x 11 11  $\sim$  $\sim$ Use Square Grid Display Grid Lines DFF  $\sim$ ursor Information Display Cursor coordinate Information None Absolute Relative Transfer Manual Transfer Auto Transfer

# -Image Direction

Click to select an option to match the direction of images projected by the projector and the display in this software.

Landscape: Display projected images as they are. Landscape (Flipped): Rotate by 180 degrees (flip top/bottom and left/right). Portrait (Clockwise): Display is rotated clockwise (90 degrees right). Portrait (Counterclockwise): Display is rotated counterclockwise (90 degrees left).

Default value: Landscape

#### Note

This operation does not change the projector settings.

Set this individually for each connected projector.

#### Grid Resolution (horizontal)

The number of grids in the horizontal direction is selected here.

#### Grid Resolution (vertical)

The number of grids in the vertical direction is selected here.

The number of grids that can be selected differs depending on the model and resolution of the selected projector.

The upper limit for the number of grids differs depending on whether or not the upgrade kit (ET-UK20) has been applied to the selected projector.

"Activation" (page 12)

When a check mark is entered for Use Square Grid, the two grid resolutions (horizontal and vertical) become one, and the button for selecting the combination of the number of grids whose horizontal and vertical intervals are identical is selected. If there is no combination of the number of grids whose horizontal and vertical and vertical and vertical intervals are identical intervals are identical, this is disabled.

The number of grids that can be selected differs depending on the model and resolution of the selected projector.

The combinations that can be selected differ depending on whether or not the upgrade kit (ET-UK20) has been applied to the selected projector.

"Activation" (page 12)

🔶 🐥 PROJECTOR1 (0.0.0.1) 01 02 PROJECTOR2 (0.0.0.2) PROJECTOR3 (0.0.0.3) 03 04 PROJECTOR4 (0.0.0.4) 05 PROJECTOR5 (0.0.0.5) 06 PROJECTOR6 (0.0.0.6) 07 PROJECTOR7 (0.0.0.7) PROJECTOR8 (0.0.0.8) 08 Add Del Rename **Display Projector Name** Power ON Standby Shutter Close Shutter Open OSD OFF OSD ON Status OFF Status ON Status Page Prev Next Command Control Test Pattern  $\sim$ OFF Image Direction Landscape  $\sim$ Grid Resolution 11 ✓ X 11  $\sim$ Use Square Grid **Display Grid Lines** OFF  $\sim$ Cursor Information Display Cursor Coordinate Information None Absolute Relative Transfer Manual Transfer Auto Transfer

#### **Display Grid Lines**

The color of the grids to be projected is selected here.

OFF, White, Black, Red, Green, Blue, Cyan, Magenta, Yellow

#### Default value: OFF

The setting is reflected in the projector even when a check mark has not been entered in Auto Transfer.

#### **Cursor Information**

When a check mark is entered for *Isplay Cursor*, the cursor indicating the position of the control point can be displayed on the projected image.

#### Note

The cursor appears only at the top left when the control point has been selected using a line or area.

If a multiple number of control points have been selected, the cursor will be displayed only at the control point selected last.



#### - Coordinate Information

The mode in which to display the control point coordinates is selected here when grids have been set in one of the editing modes.

| None:     | The coordinates are not displayed.   |
|-----------|--|
| Absolute: | The coordinates with the top left control point used as the origin point are   |
|           | displayed alongside the control points.  |
| Relative: | The coordinates with the initial position of the control point in the selected |
|           | grid used as the origin point are displayed alongside the control points.      |

# Note

If the grid intervals are narrow, the coordinates may not be displayed even when Absolute or Relative has been selected.

# Manual Transfer

When this button is clicked, the edited settings are reflected in the projector.

When a check mark is entered in Auto Transfer, as soon as a setting is changed, that setting is reflected in the projector.

The state when this software is exited will continue when the software starts next time.

# [AUTO ADJUST] (Auto Screen Adjustment) button

This allows automatic adjustment of geometry correction, edge blending, color, and brightness according to the shape of the screen through use of an externally connected camera.

Click the [AUTO ADJUST] button to display the Auto Screen Adjustment screen.

P "Auto Screen Adjustment" (page 115)

# Note

# **Status bar**

This is where the progress made in the data transfer, error messages and expansion ratio of the editing area are displayed.

# **Lens Settings**

The lens settings are selected on this screen. This may be disabled depending on the model.

# Lens setting screen



# 1 Upward

Use this to move the projected image upward.

When you click and hold the button, the movement speeds up as with operations on the remote control.

There may be three buttons depending on the projector model.

In such cases, the amount of movement increases progressively for each button in the following order; 🔺 , 🛣 , 🛣 .

# 2 Leftward

Use this to move the projected image toward the left.

When you click and hold the button, the movement speeds up as with operations on the remote control.

There may be three buttons depending on the projector model.

In such cases, the amount of movement increases progressively for each button in the following order; 🗨 , 🕊 , 🖤.

# 3 Rightward

Use this to move the projected image toward the right.

When you click and hold the button, the movement speeds up as with operations on the remote control.

There may be three buttons depending on the projector model.

In such cases, the amount of movement increases progressively for each button in the following order; 🕨 , 🕨 , 🗯

# (4) Downward

Use this to move the projected image downward. When you click and hold the button, the movement speeds up as with operations on the remote control. There may be three buttons depending on the projector model. In such cases, the amount of movement increases progressively for each button in the following order; 💌, 🟹, ¥.

#### **(5)** Vertical Position

Specify the vertical position of the image as a numerical value. Move to the specified position by clicking the [Apply] button. This function can be used only for projectors that have this function.

#### 6 Horizontal Position

Specify the horizontal position of the image as a numerical value. Move to the specified position by clicking the [Apply] button. This function can be used only for projectors that have this function.

# **7** Home Position

Click to move the lens position to the home position.

#### 8 Lens Calibration

Click to automatically set the limit to which the lens is to be moved and the home position of the lens.

#### (9) Lens Focus (Far)

Click these buttons to adjust the focus to "far".

When you click and hold the button, the movement speeds up as with operations on the remote control. There may be three buttons depending on the projector model.

In such cases, the further toward the left the button is located, the further the focus will move.

#### (10) Lens Focus (Near)

Click these buttons to adjust the focus to "near". When you click and hold the button, the movement speeds up as with operations on the remote control. There may be three buttons depending on the projector model. In such cases, the further toward the right the button is located, the closer the focus will move.

#### (1) Lens Focus

Specify the focus position as a numerical value. Move to the specified position by clicking the [Apply] button. This function can be used only for projectors that have this function.

# (12) Lens Zoom (Tele)

Click these buttons to reduce the size of the projected image (zoom out). When you click and hold the button, the movement speeds up as with operations on the remote control. There may be three buttons depending on the projector model. In such cases, the image is reduced in progressively larger steps by clicking the buttons progressively further toward the left.

# (13) Lens Zoom (Wide)

Click these buttons to enlarge the size of the projected image (zoom in). When you click and hold the button, the movement speeds up as with operations on the remote control. There may be three buttons depending on the projector model.

In such cases, the image is enlarged in progressively larger steps by clicking the buttons progressively further toward the right.

# (14) Lens Zoom

Specify the zoom position as a numerical value. Move to the specified position by clicking the [Apply] button. This function can be used only for projectors that have this function.

#### (15) Lens Memory Save

Click these buttons to save the focus position, shift position and zoom position of the adjusted lens in the projector's lens memory.

The number of lens memories available for saving lens settings varies according to model.

Even if a check mark has not been entered for Auto Transfer, the settings are saved in the lens memory when the [Save] button is clicked.

This function can be used only for projectors that have this function.

#### (16) Lens Memory Load

Click these buttons to select and load the lens memory whose settings are saved in the projector.

The lens will move automatically to the saved focus position, zoom position and shift position.

Even if a check mark has not been entered for Auto Transfer, the settings are loaded from the lens memory when the [Load] button is clicked.

This function can be used only for projectors that have this function.

#### (17) Lens Memory Rename

Click these buttons to rename the lens memory settings.

When one of the buttons is clicked, the [Rename] screen is displayed.

| Rename      | ×      |
|-------------|--------|
| New Name    |        |
| LENSMEMORY2 |        |
| ОК          | Cancel |

When a new name is input and the [OK] button is clicked, the [Rename] screen is closed, and the name of the projector's lens memory settings is changed.

A name can consist of a maximum of 16 characters including letters, numbers, hyphens and periods.

If the [Cancel] button is pressed instead, the [Rename] screen is closed without renaming the lens memory settings. This function can be used only for projectors that have this function.

#### (18) Lens Memory Delete

Click these buttons to delete the settings saved in the lens memory of the projector.

Even if Auto Transfer Transfer is not checked, the settings are deleted from the lens memory when the [Delete] button is clicked.

This function can be used only for projectors that have this function.

#### (19) Lens Memory Position

These display the value of each position of the lens memory saved to the projector. The values are Lens Shift Vertical, Lens Shift Horizontal, Lens Focus, and Lens Zoom in order from the left. If the corresponding value is not saved, that value will not be displayed. This function can be used only for projectors that have this function.

# (20) Lens Type

Specify the lens part number. This function can be used only for projectors that have this function.

# (21) Lens ID

Specify ALL or a value within the range of 1 to 255 for the ID used for lens identification. This function can be used only for projectors that have this function.

# Adjustment and Settings

# 22 Lens Name

#### Specify the lens name.

A name can consist of a maximum of 12 characters including letters, numbers, hyphens, and periods. This function can be used only for projectors that have this function.

# **23** Active Focus

Enable or disable the active focus optimizer function. This function can be used only for projectors that have this function.

# 24 Focus Offset

Set the focus correction amount for when the maximum specified brightness has entered the lens or when little light enters the lens in Bright and Dark, respectively.

This function can be used only for projectors that have this function.

# 25 Test Pattern

Select the test pattern for adjustment with the active focus optimizer function. This function can be used only for projectors that have this function.

# 26 Initialize

Initialize the Focus Offset value. This function can be used only for projectors that have this function.

The screen will be as follows for some projectors.

# **Lens Position**



# 1 Slider Bar

Use this to move the projected image up, down, left, and right.

You can operate the slider bar by dragging the slider button at the center along a rail. Operation is performed at three speeds (low, medium, and high), depending on the distance of the drag position from the center. This function can be used only for projectors that have this function.

# **Adjustment and Settings**

# Lens Focus



# 1 Periphery Focus (Far)

Adjust the periphery focus of projected images to "far".

When you click and hold the button, the movement speeds up as with operations on the remote control. This function can be used only for projectors that have this function.

# **2** Periphery Focus (Near)

Adjust the periphery focus of projected images to "near".

When you click and hold the button, the movement speeds up as with operations on the remote control. This function can be used only for projectors that have this function.

# **3** Active Focus

Enable or disable the temperature feedback function of the lens focus.



# (4) Slider Bar (Lens Focus)

Adjust the focus of the projected image.

You can operate the slider bar by dragging the slider button at the center along a rail. Operation is performed at two speeds (low and high), depending on the distance of the drag position from the center. This function can be used only for projectors that have this function.

# **(5)** Slider Bar (Periphery Focus)

Adjust the periphery focus of the projected image.

You can operate the slider bar by dragging the slider button at the center along a rail. Operation is performed at two speeds (low and high), depending on the distance of the drag position from the center.

This function can be used only for projectors that have this function.

# Lens Zoom



# 1 Slider Bar

Enlarge or reduce the size of the projected image.

You can operate the slider bar by dragging the slider button at the center along a rail. Operation is performed at two speeds (low and high), depending on the distance of the drag position from the center. This function can be used only for projectors that have this function.

# **Geometry Correction**

Test patterns or grids are projected onto the screen and those parts of the image that look unnatural are corrected. By adjusting the number of grids or number of control points, the images can be made to look more natural.

Use the mouse to make coarse corrections, and use the cursor keys on the keyboard or input numerical values to make fine corrections.

- Drag the control point with the mouse while holding down the Shift key to move it in either the horizontal or vertical direction.
- Select the control point and then press the cursor key to move it in increments of 1 pixel. Press the cursor key while holding down the Ctrl key to move it in increments of 0.2 pixel. Press the cursor key while holding down the Alt key to move it in increments of 4 pixels.

You can also select and move the control points with a gamepad.

@" "Gamepad Operation Preparation" (page 152)

# Note

When the number of grids displayed during ongoing adjustments is reduced, the corrected grid information may be lost. It is recommended that a small number of grids be displayed first to make coarse adjustments and then a larger number of grids be displayed to make fine adjustments.

# Geometry screen



#### (1) Sub Window

Each time this is clicked, the Sub Window screen is switched between displayed and cleared.

An image of the entire projection area is displayed on Sub Window.

- The red frame around the Sub Window indicates the display range in the editing area.
- Sub Window display can also be switched between displayed and cleared for the sub window in the View sub window.

# Adjustment and Settings

# 2 Zoom In

Zooms in to the editing area.

# 3 Zoom Out

Zooms out the editing area.

# (4) White

This corrects the RGB color components together.

# Note

This may be disabled depending on the model.

# 5 Red, Green, Blue

These correct only the component of the selected color.

# Note

This may be disabled depending on the model.

# 6 Editing Area

The image can be corrected by selecting the grid using the mouse.

The settings established in the operation area are also reflected in this area.

The outermost red frame indicates the maximum area which can be projected.

The red frame has an L-shaped mark to indicate the image orientation. This mark is shown at the upper left when the Image Direction setting is Landscape, and the location where it is shown also moves depending on the Image Direction setting.

# **⑦** Operation Area

This is where the buttons, slide bars, etc. used by geometry correction are displayed. The operations that they perform differ depending on which correction pattern has been selected. The operation area" (page 60)

# 8 Edit, View

The following menu items can be used on the Geometry screen.

# Edit submenu

# Lock

Locks the control points of the grids selected.

# Note

A locked control point will not move even if the correction pattern has been changed. The lock will not be released even if the number of grids has been changed.

# Unlock

Unlocks the control points that have been selected.

# Free

Click to release the control point selection.

# Reset

Click to return the selected control points to the initial status.

# **Flip Vertical**

Click to flip vertically the correction status of the entire image.

#### **Flip Horizontal**

Click to flip horizontally the correction status of the entire image.

#### View submenu

#### **Image Direction**

Match the direction of the editing area to the images projected by the projector. This performs the same operation as Image Direction in the common operation area.

#### **Grid Resolution**

#### Use Square Grid

This makes it possible to select the combination of the number of grids which can be selected when a check mark has been entered for Use Square Grid in the common operation area.

Χ

The number of grids in the horizontal direction is selected here.

This performs the same operation as Grid Resolution (horizontal) in the common operation area.

Υ

The number of grids in the vertical direction is selected here.

This performs the same operation as Grid Resolution (vertical) in the common operation area.

# Operation area



# (1) Mode Switching

OFF: Disables geometry correction. PC-1 / PC-2 / PC-3: Enables geometry correction.

# Note

When geometry correction is enabled, only one piece of data (PC) can be saved for some models.

# **(2)** Date and Time Stored

This displays the date and time that the geometry correction data was saved inside the projector. The indication is "---/--/-- --:---" for a model that does not support this function.

#### 3 Moving Area

Set here the range of the effects exerted on the grids around the control points that have been dragged and moved.

# (4) Smoothing

Correction using curves can be performed when a check mark is entered in V Smoothing.



# **(5)** Alert Distortion

If a setting exceeding the geometric distortion limit is sent to the projector when **Alert Distortion** has been checked, an error message will be displayed on the dialog screen. The error message will be displayed on the status bar if a check

mark has been entered in 🔲 Auto Transfer.

Alert Distortion is checked as the default setting.

When a check mark is not entered for Alert Distortion, even settings exceeding the geometry correction limits can be sent to the projector. Bear in mind, however, that in such cases the projected images may lose their shape.

#### 6 Store

Click this button to save the current settings inside the projector after they have been reflected in the projector. The current Grid Resolution setting is also saved inside the projector at the same time.

# Note

- A screen for selecting the save folder inside the projector may appear for some models.
- With some models, the Grid Resolution setting is not saved inside the projector. A screen for selecting whether to save the Grid Resolution setting will appear when you exit this software, and you can save it to this software by selecting [Yes]. The setting can be saved for up to 99 projectors, and is overwritten from the oldest save date and time when the upper limit is reached.

| Geometry | Manager Pro            |  | × |
|----------|------------------------|--|---|
| 0        | Save the grid number f | for each projector?<br>minder, check this box<br>No(N) |   |

When the Grid Resolution setting is saved, the saved Grid Resolution setting will be loaded when the software is started next time. However, the Grid Resolution setting inside the projector will be given priority for models that can save it inside the projector.

#### 7 Free Grid (PJ)

Enable or disable arbitrary geometry correction for the PC-1 to PC-3 currently selected for the projector.

# Note

This may be disabled depending on the model.

# 8 Import FREE GRID

Reflect the correction results of [FREE GRID] in the OSD menu of the projector. This is applicable to the correction results of [FREE GRID] for the PC-1 to PC-3 currently selected.

Note

This may be disabled depending on the model.

# **9** Gird Aspect

When the aspect ratios of the grid and projected image differ, switch the aspect ratio of the grid to match that of the projected image.

For example, if the aspect ratio of the projected image is 4:3, the grid can be placed aligned with outer circumference by switching Grid Aspect to 4:3.

# Note

- The quality of the projected image may momentarily change while Grid Aspect is switched to other than Default because [SCREEN SETTING] and [ASPECT] in the OSD menu of the projector are switched and then processing is performed by geometry correction.
- Even if Grid Aspect is switched to other than Default, clicking the Store button will return it to Default.

# **10** Display Switching

Click **T** to minimize the operation area; conversely, click **b** to maximize it.

# Selecting the control points

Select the Geometry screen and switch the mode to other than OFF. The control points can now be selected.

Pree Grid (Free-form correction)" (page 63)

Drag the control points to move them. The control points cannot be moved by selecting the lines.



By clicking (or dragging) while holding down the Ctrl key, another control point can be selected while the currently selected control point keeps selected.

To move the selection to the adjacent control point, press the Tab key or Shift + Tab keys while one control point is selected, or press the cursor key while holding down the Shift key.

To cancel the selection of the control point, click anywhere other than the grid with the mouse or select [Free] in the Edit submenu displayed by right-clicking.

# **Right-clicking**

The menu with the items described below is displayed when a grid control point is selected and the right button of the mouse is clicked.

The menu functions are the same as with the Edit submenu.

🖙 "Edit submenu" (page 58).

Lock, Unlock, Free, Reset, Flip Vertical, Flip Horizontal

# Free Grid (Free-form correction)

The Free Grid operation area is where the operations for all the correction patterns are selected.

The corrections made with Free Grid are also reflected in the editing area of the other correction patterns. You can superimpose corrections by selecting another correction pattern after making corrections with Free Grid, and then configuring the settings of each correction pattern.

|   | PC-1 V Date Modified 2022/12/07 12:34:56 | Smoothing Z Alert Distortion | Store              |                  | <b>V</b> |
|---|--|------------------------------|--------------------|------------------|----------|
|   | Grid Aspect                              | Free Grid (PJ)               | $OFF$ $\checkmark$ | Import FREE GRID |          |
|   | Default V X                              |                              |                    |                  |          |
|   | Free Grid                                |                              |                    |                  |          |
| 1 |  |                              |                    |                  |          |
|   |  |                              |                    |                  |          |

#### **(1)** Correction Patterns

Any of the following correction patterns can be selected.

- Free Grid (free-form correction)
- 4 Corner (4-corner correction)
- Keystone (keystone shape correction)
- Cylindrical screen (cylindrical shape correction)
- Elliptical screen (elliptical shape correction)
- Spherical screen (spherical shape correction)
- Rotation (rotational correction) To use this function, the upgrade kit (ET-UK20) must be applied on the selected projector, with the exception of some projectors.
  - "Activation" (page 12)

# 4 Corner (4-corner correction)

The positions of the four corners of the image are set with this type of correction.



# 1 Upper Left

Set the horizontal and vertical positions of the upper left. The setting ranges vary depending on the projector model and resolution.

#### 2 Lower Left

Set the horizontal and vertical positions of the lower left. The setting ranges vary depending on the projector model and resolution.

#### **3** Upper Right

Set the horizontal and vertical positions of the upper right. The setting ranges vary depending on the projector model and resolution.

#### **(4)** Lower Right

Set the horizontal and vertical positions of the lower right. The setting ranges vary depending on the projector model and resolution.

# 5 Reset

Click these to reset the respective settings which have been changed.

# 6 Rotation [degree]\*

Set the rotational angle of the image here.

# 7 Fit Size\*

Projected images sometimes protrude beyond the projection area when they are rotated.

When a check mark is entered for Fit Size, the image is reduced to a size in which it can be projected when it exceeds the projection area.

The image will not be reduced if a check mark is not entered.

# 8 Linearity

Set the linearity in the horizontal and vertical directions.

When a check mark is entered for Auto, the linearity values are determined automatically from the positions of the upper, lower, left, right, and four-corner points. In this case, values cannot be set. This function can be used only for projectors that have this function.

\* This item can only be configured if the upgrade kit (ET-UK20) has been applied to the selected projector, with the exception of some projectors.

<sup>(</sup>page 12)

# 9 Pincushion

Set the pincushion independently for upper, lower, left, and right. The setting ranges vary depending on the projector model and resolution. The setting ranges are expanded when the upgrade kit (ET-UK20) has been applied to the selected projector.

# **Import from CORNER CORRECTION**

Reflect the [CORNER CORRECTION] and [CORNER/PINCUSHION] adjustment items in the OSD menu of the projector. This is available only for models that have the CORNER/PINCUSHION and CORNER/PINCUSHION adjustment functions in the projector.

# Keystone (keystone shape correction)

Images are corrected using the keystone shape as the reference with this type of correction.



# (1) Correction pattern adjustment area

Select the settings for vertical, horizontal, vertical balance, and horizontal balance here.

The setting ranges vary depending on the projector model.

The setting ranges for vertical and horizontal are expanded when the upgrade kit (ET-UK20) has been applied to the selected projector.

# 2 Reset

Use these to reset the settings that have been changed.

# 3 Setting

Select the settings for Lens Throw Ratio, V Keystone, H Keystone, V Balance, H Balance, and Rotation\* here. The setting ranges vary depending on the projector model.

The setting ranges for V Keystone and H Keystone are expanded when the upgrade kit (ET-UK20) has been applied to the selected projector.

# 4 Fit Size\*

Projected images sometimes protrude beyond the projection area when they are rotated.

When a check mark is entered for Fit Size, the image is reduced to a size in which it can be projected when it exceeds the projection area.

The image will not be reduced if a check mark is not entered.

# **(5)** Import from KEYSTONE

Reflect the correction results of [KEYSTONE] in the OSD menu of the projector.

\* This item can only be configured if the upgrade kit (ET-UK20) has been applied to the selected projector, with the exception of some projectors.

(page 12) \*\*\*

# Cylindrical screen (cylindrical shape correction)

Images are corrected using the cylindrical shape as the reference with this type of correction.



#### (1) Correction pattern adjustment area

Select the settings for vertical arc and horizontal arc here.

The setting ranges vary depending on the projector model.

The setting ranges are expanded when the upgrade kit (ET-UK20) has been applied to the selected projector.

#### 2 Reset

Use these to reset the settings that have been changed.

#### **3** Setting

Select the settings for Lens Throw Ratio, V Keystone, H Keystone, V Arc, H Arc, V Balance, H Balance, and Rotation\* here.

The setting ranges vary depending on the projector model.

The setting ranges for V Keystone, H Keystone, V Arc, and H Arc are expanded when the upgrade kit (ET-UK20) has been applied to the selected projector.

#### (4) Fit Size\*

Projected images sometimes protrude beyond the projection area when they are rotated.

When a check mark is entered for Fit Size , the image is reduced to a size in which it can be projected when it exceeds the projection area.

The image will not be reduced if a check mark is not entered.

# **(5)** Import from CURVED CORRECTION

Reflect the correction results of [CURVED] or [CURVED CORRECTION] in the OSD menu of the projector.

#### 6 Maintain Aspect Ratio

When a check mark is entered for Maintain Aspect Ratio , correction is made so that the aspect ratio of the projected image is maintained.

If a check mark is not entered, the aspect ratio is not maintained and correction is made using the entire surface of the display device.

This function can be used only for projectors that have this function.

\* This item can only be configured if the upgrade kit (ET-UK20) has been applied to the selected projector, with the exception of some projectors.

(Page 12) \*\*\*

#### Elliptical screen (elliptical shape correction) Images are corrected to fit a screen whose shape is elliptical when viewed from above. Moving Area PC-1 Date Modified 2022/12/07 12:34:56 □ Smoothing ☑ Alert Distortion Store V I 0 + Free Grid (PJ) OFF Import FREE GRID Grid Aspect Default х Setting Elliptical screen Lens Throw Ratio 2.0 + Reset 0.0 \* V Keystone [degree] Reset 0.0 ٢ H Keystone [degree] Reset + 0.01 Reset Width/Radius Ratio 0.01 + Reset Ĩ 1.00 + Reset Flattening 1.00 \$ Reset III E 0.0 \* 0.0 Reset Azimuth + Reset V Balance 0 ٢ Reset 翢 Ē Maintain Aspect Ratio 0 ÷ Reset Rotation [degree] 0.00 + Reset Fit Size (İ) **(**2) **(**2) 3 **(4) (**5) (1) Correction pattern adjustment area Select the settings for width/radius ratio, flattening, azimuth, and vertical balance here. (2) Reset Use these to reset the settings that have been changed. **3** Setting Select the settings for Lens Throw Ratio, V Keystone, H Keystone, Width/Radius Ratio, Flattening, Azimuth, V Balance, and Rotation\* here. The setting ranges for V Keystone and H Keystone are expanded when the upgrade kit (ET-UK20) has been applied to the selected projector. (4) Fit Size\* Projected images sometimes protrude beyond the projection area when they are rotated. When a check mark is entered for E Fit Size , the image is reduced to a size in which it can be projected when it exceeds the projection area. The image will not be reduced if a check mark is not entered. (5) Maintain Aspect Ratio When a check mark is entered for Maintain Aspect Ratio Aspect Ratio, correction is made so that the aspect ratio of the projected image is maintained. If a check mark is not entered, the aspect ratio is not maintained and correction is made using the entire surface of the display device.

This function can be used only for projectors that have this function.

\* This item can only be configured if the upgrade kit (ET-UK20) has been applied to the selected projector, with the exception of some projectors.

(page 12) \*\*\*

# ■ Description of elliptical screen (elliptical shape correction) parameters

# View of projector as seen from above



# Example of settings

| Setting item        | Calculation method  | Setting |
|---------------------|---|---------|
| Lens Throw Ratio    | Projection distance ÷ width of image on flat screen                                   | 0.9     |
|                     | = 3 870 mm ÷ 4 300 mm   |         |
| H Keystone [degree] | Angle formed with tangent of projection center  | 14.0    |
| Width/Radius Ratio  | Width of image on flat screen ÷ radius in horizontal direction of ellipsis            | 0.69    |
|                     | = 4 300 mm ÷ 6 200 mm   |         |
| Flattening          | Radius in vertical direction of ellipsis ÷ radius in horizontal direction of ellipsis | 0.66    |
|                     | = 4 110 mm ÷ 6 200 mm   |         |
| Azimuth             | Position of projected image center on ellipsis  | 40.0    |



# Spherical screen (spherical correction)

Images are corrected using the spherical shape as the reference with this type of correction.

| PC-1 V Date Modified 2022/12/07 12:34:56 | 0 🗘 Smoot           | hing 🗹 Alert<br>Free | Distortion [<br>e Grid (PJ) | Store<br>OFF V Impor  | t FREE GRID |
|--|---------------------|----------------------|-----------------------------|-----------------------|-------------|
| Spherical screen                         | Setting             |                      |                             |                       |             |
|  | Lens Throw Ratio    | 2.0                  | Reset                       |                       |             |
|  | V Keystone [degree] | 0.0                  | Reset                       |                       |             |
|  | H Keystone [degree] | 0.0                  | Reset                       |                       |             |
|  | V Arc               | 0.0                  | Reset                       |                       |             |
| ₩  | H Arc               | 0.0                  | Reset                       |                       |             |
|  | V Balance           | 0                    | Reset                       |                       |             |
|  | H Balance           | 0                    | Reset                       | Maintain Aspect Ratio |             |
|  | Rotation [degree]   | 0.00                 | Reset                       | ☐ Fit Size            |             |
|  |                     |                      |                             |                       |             |
| 1 2                                      | 3                   |                      | 2                           | <b>4 5</b>            |             |

#### (1) Correction pattern adjustment area

Select the settings for vertical arc and horizontal arc here.

The setting ranges vary depending on the projector model.

The setting ranges are expanded when the upgrade kit (ET-UK20) has been applied to the selected projector.

# 2 Reset

Use these to reset the settings that have been changed.

# **3** Setting

Select the settings for Lens Throw Ratio, V Keystone, H Keystone, V Arc, V Balance, H Balance, and Rotation\* here. The setting ranges vary depending on the projector model.

The setting ranges for V Keystone, H Keystone, and V Arc are expanded when the upgrade kit (ET-UK20) has been applied to the selected projector.

#### 4 Fit Size\*

Projected images sometimes protrude beyond the projection area when they are rotated.

When a check mark is entered for Fit Size, the image is reduced to a size in which it can be projected when it exceeds the projection area.

The image will not be reduced if a check mark is not entered.

# **(5)** Maintain Aspect Ratio

When a check mark is entered for Maintain Aspect Ratio, correction is made so that the aspect ratio of the projected image is maintained.

If a check mark is not entered, the aspect ratio is not maintained and correction is made using the entire surface of the display device.

This function can be used only for projectors that have this function.

<sup>\*</sup> This item can only be configured if the upgrade kit (ET-UK20) has been applied to the selected projector, with the exception of some projectors.

<sup>(</sup>Page 12) \*\*\*

# **Rotation (rotation correction)**

Images are rotated with this type of correction.

To use this function, the upgrade kit (ET-UK20) must be applied on the selected projector, with the exception of some projectors.

(Page 12) (Page 12)



#### (1) Correction pattern adjustment area

Select the setting for the gradient here.

#### 2 Reset

Use these to reset the settings that have been changed.

**3** Setting

Select the setting for the gradient here.

#### (4) Fit Size

Projected images sometimes protrude beyond the projection area when they are rotated.

When a check mark is entered for Fit Size , the image is reduced to a size in which it can be projected when it exceeds the projection area.

The image will not be reduced if a check mark is not entered.

# **Edge Blending**

The joins between images can be corrected when constructing a multi-display screen by combining the projected images from multiple projectors.

The correction method for edge blending differs depending on the projector model.

- When the projector can perform black level adjustment only in the video display area Set the start position, width, and black level border width for edge blending. Make the joins between the images less visible by applying a brightness gradient to the parts where projected images overlap.
- When the projector can perform black level adjustment for the entire display panel area

Set the width and black level border shape for edge blending to free-form. Make the joins between the images less visible by applying a brightness gradient using a border shape that matches the screen shape. The black level border shape cannot be set to free-form for some models.

# Edge Blending screen

# When the projector can perform black level adjustment only in the video display area



#### (1) Mode Switching

#### OFF:

The edge blending settings are canceled.

#### ON:

Makes the edge blending settings effective.

#### User:

Adjusts settings for edge blending using the user-defined curve.

# Adjustment and Settings

Note

- Selecting User may not be possible depending on the model.
- When the input signal of the projector has been changed, it may be necessary to re-set the edge blending mode and the Upper, Lower, Left and Right Enable boxes.

# 2 Marker

When a check mark is entered in Marker , markers are displayed in the editing area and on the images projected from projector.

The start position for edge blending is indicated by display of a green line, and the edge blending width is indicated by display of a red line.

(Page 73) Editing Area"

# **3** Setting

Click this button to display the user-defined curve setting screen. "User-defined curve setting screen" (page 77)

# (4) Upper

The upper side settings of the projected image are set here.

# 5 Left

The left side settings of the projected image are set here.

# 6 Right

The right side settings of the projected image are set here.

#### 7 Lower

The lower side settings of the projected image are set here.

#### 8 Enable

Enter a check mark in **Enable** to allow edge blending correction to be performed. Only the settings for items with a check mark entered in **Enable** take effect.

# Note

When the input signal of the projector has been changed, it may be necessary to re-set the edge blending mode and the Upper, Lower, Left and Right Enable boxes.

# 9 Start

The starting position of edge blending is set here.

# 10 Width

The width of the edge blending is set here.

#### (1) Black Border (Outside Area)

Set the border width of the black level. [Outside Area] may be displayed in place of [Black Border] for some models.

# (12) Keystone Area

Set the slope of the black level border when using the edge blending at the same time as the keystone correction. This function can be used only for projectors that have this function.

# (13) Overlapped Black Level (Bright Blending)

The Red, Green and Blue values are adjusted here to set the brightness of the areas subject to edge blending. These settings are applied to the edge blending width. The higher the numerical value, the brighter the colors. [Bright Blending] may be displayed in place of [Overlapped Black Level] for some models.

# (14) Interlocked

When a check mark is entered for **Interlocked**, Overlapped Black Level can be set with the Red, Green and Blue values all linked together.
## (15) Non-Overlapped Black Level (Bright Inside)

The black level inside the area where the images are to be superimposed is set here.

When a check mark is removed from **Interlocked**, the Red, Green and Blue values can be set separately. [Non-Overlapped Black Level] may be displayed in place of [Bright Inside] for some models.

### (b) Black Border Level (Bright Outside)

Set the black level of the parts where images are superimposed.

When a check mark is removed from Interlocked, the Red, Green and Blue values can be set separately. [Black Border Level] may be displayed in place of [Bright Outside] for some models.

## 1 Editing Area

The edge blending setting status is displayed here.

By dragging these markers, the start position of the edge blending (green), edge blending width (red), and black level border width (yellow) can be set.

The settings established with Upper, Left, Right and Lower are also reflected in this area.

### Note

The line for the black level border width (yellow) is displayed only when the mouse cursor is positioned on the marker (yellow).



## (18) Edit

In addition to the menu items described in "Main menu" (page 38), the following menu items can be used on the Edge Blending screen.

#### Edit submenu

Flip Vertical:

Click to flip vertically the correction status of the entire image.

#### Flip Horizontal:

Click to flip horizontally the correction status of the entire image.

■ When the projector can perform black level adjustment for the entire display panel area



### 1 Editing area

The edge blending width and black level border shape can be set by operating the adjustment points with the mouse. The settings configured in the operation area are also reflected in this area.

The outmost red frame has an L-shaped mark to indicate the image orientation. This mark is shown at the upper left when the Image Direction setting is Landscape, and the location where it is shown also moves depending on the Image Direction setting.

## Note

The line for the black level border width (yellow) is displayed only when the mouse cursor is positioned on the marker (yellow).

## (2) Operation area

This is where the buttons and other controls used for edge blending are displayed.

Switching between edge blending and black level adjustment changes the operations that they perform.

"Edge Blending" (page 75)

P "Black Level Adjustment" (page 76)

## 3 Zoom In

Zooms in to the editing area.

### (4) Zoom Out

Zooms out from the editing area.

## **Edge Blending**



### 1 Edge Blend Mode

#### OFF:

The edge blending settings are canceled.

### ON:

Makes the edge blending settings effective.

#### User:

Adjusts settings for edge blending using the user-defined curve.

## Note

When the input signal of the projector has been changed, it may be necessary to re-set the edge blending mode and the Upper, Lower, Left and Right Enable boxes.

### 2 Edge Blend Marker

When this is set to ON, markers (lines) are displayed in the editing area and on the images projected from the projector. The start position for edge blending is indicated by display of a green line, and the edge blending width is indicated by display of a red line.

#### **(3)** User Blending Curve

When the [Setting] button is clicked, the user-defined curve setting screen is displayed. The "User-defined curve setting screen" (page 77)

## Note

Some models have a setting to configure the gamma value as the user-defined curve coefficient instead of the [Setting] button.

|                 |      |        |                     |     | 1.4.1 |
|-----------------|------|--------|---------------------|-----|-------|
| Edge Blend Mode | User | $\sim$ | User Blending Curve | 1.0 | -     |

This value is common for user-defined curve at all of the upper, lower, left, and right edges.

## (4) Upper

The upper side settings of the projected image are set here.

## 5 Lower

The lower side settings of the projected image are set here.

6 Left

The left side settings of the projected image are set here.

#### (7) Right

The right side settings of the projected image are set here.

## **Adjustment and Settings**

## 8 Enable

Enter a check mark in **Enable** to allow edge blending correction to be performed. Only the settings for items with a check mark entered in **Enable** take effect.

### Note

When the input signal of the projector has been changed, it may be necessary to re-set the edge blending mode and the Upper, Lower, Left and Right Enable boxes.

### 9 Start

The starting position of edge blending is set here.

#### (10) Width

The width of the edge blending is set here.

### (11) Black Level Area

The area of black level adjustment is set here.

#### Geometry Linked:

Black level adjustment is performed only in the video display area.

#### Geometry Unlinked:

Black level adjustment is performed for the entire display panel area.

### Note

This may be disabled depending on the model.

### (12) Overlapped Black Level

The Red, Green and Blue values are adjusted here to set the brightness of the areas subject to edge blending. These settings are applied to the edge blending width. The higher the numerical value, the brighter the colors.

## **Black Level Adjustment**



## 1 Black Level Mode

### Soft Edge / Black Level:

Edge blending and black level adjustment are performed at the same time.

### Black Level Only:

Only black level adjustment is performed.

#### (2) Auto Test Pattern

When this setting is ON, the Black pattern is shown on the projected image when you go to this screen.

### (3) Non-Overlapped Black Level

The black level inside the area where the images are to be superimposed is set here.

When a check mark is removed from **Interlocked**, the Red, Green and Blue values can be set separately.

## (4) Black Border Level

Set the black level of the parts where images are superimposed.

When a check mark is removed from Interlocked , the Red, Green and Blue values can be set separately.

#### **(5)** Black Border Area

Set the black level border.

#### Width:

Set the width of the black level border.

#### Free Shape:

Select the **Enable** check box to set the black level border shape to free-form.

#### **Adjustment Points:**

Specify the number of adjustment points. You can select from 2, 3, 5, 9, and 17.

#### Initialize Shape:

Initialize the black level border settings.

## Note

Only the width of the black level border and its slope can be set for some models.

|       | Wie | dth    | Keyston | e Area   |
|-------|-----|--------|---------|----------|
| Upper | 400 | *<br>* | -256    | <b>•</b> |
| Lower | 0   | *      | 0       | *        |
| Left  | 0   | *      | 0       | *        |
| Right | 0   | *      | 0       | *        |

#### Width:

Set the width of the black level border.

#### Keystone Area:

Set the slope of the black level border.

### **User-defined curve setting screen**

When [Setting] is clicked, the user-defined curve setting screen is displayed.

The gradient (brightness gradient) at which edge blending is performed is set using a gamma curve.

When a user-defined curve setting is changed from the initial curve, the display above [Setting] changes from [User Blending Curve: Default] to [User Blending Curve: Changed].



## Adjustment and Settings

# 1 Blending

The position where the user-defined curve is to be set is selected here.

## 2 Copy

Click this to copy the current user-defined curve setting. The setting is copied from top to bottom (or vice versa) or from left to right (or vice versa).

## 3 Gamma

The user-defined curve is set here. For numerical value input: Enter a setting from 0.25 to 4.00 (in 0.01 steps).

## (4) Initial Curve

The initial setting of the user-defined curve is displayed here.

### **(5)** Correction Curve

The operation point in the center can be dragged to change the user-defined curve setting (shape of the gamma curve).

### 6 Store

Click this to reflect the currently displayed user-defined curve setting in the projector and save the setting in the projector. The setting remains saved even when the main power of the projector has been set to "off".

### 7 Reset

Click this to reset the currently displayed user-defined curve setting and return it to the initial value.

### (8) ок

Click this to reflect the user-defined curve setting in the projector and close the user-defined curve screen.

This operation is reflected in the projector even when a check mark has not been entered in Auto Transfer.

## 9 Apply

Click this to reflect the user-defined curve setting in the editing area.

This operation is reflected in the projector even if a check mark has not been entered for I Auto Transfer.

### (10) Cancel

Click this to cancel the setting and close the user-defined curve screen.

# Uniformity

Correct the unevenness in color and brightness within the screen. This may be disabled depending on the model. There are the following two correction methods for uniformity depending on the projector model.

## When DLP Projector

## **Gradient Correction**

When unevenness in color occurs in one direction across the image, greater uniformity can be obtained by applying correction in the vertical or horizontal direction.

Correction is performed by toning down (thinning) the selected color in a gradient-like manner from one side of the image to the other.

## **Flexible Correction**

If other than OFF was selected in Flexible Correction, correction can be performed by specifying ranges for the localized unevenness of colors in the image.

When the image contains localized unevenness in color, correction is applied after specifying the range.

As with Gradient Correction, correction is performed by toning down (thinning) the selected color in a gradient-like manner. © "Flexible Correction / PC Correction Procedure" (page 85)

To use the Flexible Correction function, the upgrade kit (ET-UK20) must be applied on the selected projector, with the exception of some projectors.

(Page 12) \*\*\*

## When LCD Projector

## **User Correction**

Greater uniformity can be obtained by applying correction in the directions of the four corners of the screen or in vertical or horizontal direction.

Correction is performed by toning down (thinning) or toning up (deepening) the selected color in a gradient-like manner from one side of the image to the other.

### **PC Correction**

Correction can be performed by specifying ranges for the localized unevenness in the screen in the same way as Flexible Correction.

Correction is performed by toning down (thinning) or toning up (deepening) the selected color in a gradient-like manner from one side of the image to the other in the same way as User Correction.

To use the PC Correction function, the upgrade kit (ET-UK20) must be applied on the selected projector.

## Uniformity screen

## ■ When DLP Projector



## 1 Sub Window

Each time this is clicked, the Sub Window screen is switched between displayed and cleared. The Sub Window displays a representation of the Gradient Correction and Flexible Correction settings for the entire projection area.

• Sub Window display can also be switched between displayed and cleared for the sub window in the View sub window.

#### 2 Zoom In

Zooms in to the editing area. The center of the target area is zoomed in when the target area has been selected in the editing area.

#### 3 Zoom Out

Zooms out the editing area.

#### (4) Editing Area

A representation of the Gradient Correction and Flexible Correction settings is displayed.

When applying Flexible Correction, this is where you select target points and set the target area.

The outmost red frame has an L-shaped mark to indicate the image orientation. This mark is shown at the upper left when the Image Direction setting is Landscape, and the location where it is shown also moves depending on the Image Direction setting.

Mesh granularity in the editing area differs depending on the model.

## **(5)** Gradient Correction

When applying gradation to the entire image, set the degree of color variation.

You can set this individually for each of the colors White, Red, Green and Blue, both for the vertical direction (V) and the horizontal direction (H).

For numerical value input: Enter a value from -127 to 127.

How the vertical (V) and horizontal (H) gradation slopes varies depending on the model. For details, refer to "Settings"
 - "[DISPLAY OPTION] menu" - "[UNIFORMITY]" in the operating instructions of the projector.

## 6 Display on PC

When you put a check in **Display on PC**, the Gradient Correction settings are applied in the editing area. Put a check here when you want to see the combined effect of Gradient Correction settings and Flexible Correction settings in the editing area.

When the check is removed from Display on PC, the Gradient Correction settings are not applied to display in the editing area. The settings will still be reflected in the projector, however.

### **7** Lamp Status

When a projector that uses a lamp as light source is selected, this indicates the lamps that are currently lit. [None] is displayed if none of the lamps is lighted.

### Note

This may be disabled depending on the model.

| Gradient Correction | (Lamp 1/ | Lamp 2 / | /Lamp 3 | /Lamp4) |  |
|---------------------|----------|----------|---------|---------|--|
| White V             |          | 0        | *       | Reset   |  |
| White H             |          | 0        | -       | Reset   |  |

### 8 Reset

Return the Gradient Correction and Flexible Correction settings to their default values.

#### (9) Switch mode

OFF:

Disable the Flexible Correction settings.

Geometry Linked: Enable the Flexible Correction settings and process before geometry correction. Geometry Unlinked: Enable the Flexible Correction settings and process after geometry correction.

### Note

• The selection options may be [OFF] and [ON] depending on the model.

#### **Right-clicking**

If other than OFF was selected in Flexible Correction, clicking the right button of the mouse in the editing area displays a menu with following items. The functions of these items are the same as with the Edit submenu items. <sup>(\*\*)</sup> "Edit submenu" (page 82)

#### Reset, Flip Vertical, Flip Horizontal, Area Select, Point Select

### **1** Flexible Correction

When correcting partial unevenness in image color, you can set the degree of the change in the gradation color to be applied to the area surrounding the selected target point.

This setting can be made individually for each of the three colors Red, Green, and Blue.

Setting range: 0 to 1023

### (11) Interlocked

By putting a check in Interlocked , you can set Flexible Correction to link the value set to all three of colors Red, Green, and Blue.

## Adjustment and Settings

## (12) Mode

Chroma Only: Correct only the unevenness of colors. Select this when giving priority to the brightness of the overall projected image.

Luminance / Chroma: Correct the unevenness of luminance and colors.

## Note

This may be disabled depending on the model.

### (13) Store

Reflects the gradation settings in the projector and saves them in the projector. The settings are maintained even when the main power of the projector has been turned off.

#### (14) Factory Default

Discard the current Flexible Correction settings and initialize to the factory default state.

# Note

This may be disabled depending on the model.

## (15) Generate from Geometry

Generate the data of Flexible Correction based on the adjustment data of geometry correction.

If you select the adjustment data of geometry correction to reference, a selection screen appears for selecting whether or not to display in combination with the Flexible Correction data currently being adjusted or to discard that data and create new data.

## Note

This may be disabled depending on the model.

### (16) Gamma

Perform inverse gamma correction to remove gamma value influence. Setting range: 1.0 to 2.8 (in 0.1 steps)

## Note

This may be disabled depending on the model.

### 1 Edit

In addition to the menu items described in "Main menu" (page 38), the following menu items can be used on the Uniformity screen. However, these menu items are valid only when the Flexible Correction method is used for correction.

#### Edit submenu

#### Reset

Return the Gradient Correction and Flexible Correction settings to their default values. This item cannot be selected when [Area Select] has been selected. Neither can it be selected when the target area has not been set.

#### **Flip Vertical**

Click to flip vertically the correction status of the entire image. This item cannot be selected when [Area Select] has been selected.

#### Flip Horizontal

Click to flip horizontally the correction status of the entire image. This item cannot be selected when [Area Select] has been selected.

#### Area Select

While an area is selected, its control points are displayed.

- The target area can be enlarged or reduced or moved using the control points.
- [Area Select] cannot be selected concurrently with [Point Select].

#### Point Select

Confirms settings for the target area currently being set.

[Point Select] cannot be selected concurrently with [Area Select].

## When LCD Projector



## 1 Mode Switching

OFF: Disable the uniformity adjustment settings.

- Use: Enable the User Correction settings.
- PC: Enable the PC Correction settings.

## Note

Only one of User Correction and PC Correction can be enabled.

## **(2)** User Correction

Correct the brightness and color unevenness of the overall screen in Upper Left, Lower Left, Upper Right, Lower Right, Upper, Lower, Left, Right and All.

The setting range differs depending on the model.

## Note

- The setting range is limited depending on [Adjustment Level].
- The correction of All may not be supported depending on the model.
- The area to adjust differs depending on the model.

## 3 Adjustment Level

Specify the adjustment level of images. The higher the value, the darker the images. The setting range differs depending on the model.

### 4 Test Pattern

OFF: A test pattern is not displayed during adjustment. ON: A test pattern is displayed during adjustment.

## 5 Reset

Return the corresponding User Correction and PC Correction settings to their default values.

## 6 Initialize

Initialize the User Correction and PC Correction settings for the currently selected adjustment level.

## **7** PC Correction

When correcting partial unevenness in image color, you can set the degree of the change in the gradation color to be applied to the area surrounding the selected target point.

This setting can be made individually for each of the three colors Red, Green, and Blue.

The setting range differs depending on the model.

## Note

The setting range is limited depending on [Adjustment Level].

## 8 Interlocked

By selecting the Interlocked check box, you can set PC Correction by linking the three colors Red, Green, and Blue with the same value.

## 9 Store

Reflect the PC Correction settings for the currently selected adjustment level in the projector and save the setting values in the projector.

The settings are maintained even when the main power of the projector has been turned off.

## (10) Copy to Other Level

Copy the PC Correction settings for the currently selected adjustment level to another adjustment level.

## Note

The data saved in the projector can be copied. If you wish to copy the data you are working on, save it to the projector first and then execute this.

## (1) Edit

In addition to the menu items described in "Main menu" (page 38), the following menu items can be used on the Uniformity screen. However, these menu items are valid only when the PC Correction method is used for correction.

### Edit submenu

#### Reset

Return the User Correction and PC Correction settings to their default values. This item cannot be selected when [Area Select] has been selected. Neither can it be selected when the target area has not been set.

#### **Flip Vertical**

Click to flip vertically the correction status of the entire image. This item cannot be selected when [Area Select] has been selected.

#### **Flip Horizontal**

Click to flip horizontally the correction status of the entire image. This item cannot be selected when [Area Select] has been selected.

#### Area Select

While an area is selected, its control points are displayed.

The target area can be enlarged or reduced or moved using the control points.

[Area Select] cannot be selected concurrently with [Point Select].

#### **Point Select**

Confirms settings for the target area currently being set.

• [Point Select] cannot be selected concurrently with [Area Select].

## **Flexible Correction / PC Correction Procedure**

Select the target point from which gradation is to be applied, and then specify the target area (the range to be corrected) and apply correction. When doing this, specify the points at which grid lines cross as target points.



**1** Select other than OFF in Flexible Correction for a DLP projector and select PC in Flexible Correction for an LCD projector, and enable the Flexible Correction / PC Correction settings.

## **2** Click or drag the mouse to select a target point.

You can also select multiple target points at the same time.

A red frame is displayed around the perimeter of the area defined by the selected target points, and this becomes the target area (the correction area).

\* The target area and target point can be selected using the same method as for the control points of the geometry correction grid.

Selecting the control points" (page 62)

## **3** Adjust the parameters.

Gradation is applied to the selected color toward the periphery of the target area, treating the target point as the starting point.

## **4** Right-click and select [Area Select], and display the operation points (green) in the target area.

Using the mouse, drag the operation points to enlarge or reduce the size of the target area. Drag an operation point with the mouse while holding down the Shift key to enlarge or reduce the size symmetrically with the center of the target area treated as the target point.

If the mouse cursor is placed in the target area and then dragged, the target area can be moved.

• [Area Select] can also be selected on the Edit submenu.

## Note

Enlarging or reducing the size of the target area does not change the number of selected target points.

### 5 Right-click to select [Point Select], and release the operation point display.

• [Point Select] can also be selected on the Edit submenu.

#### Note

[Point Select] and [Area Select] can be toggled by pressing the space key.

#### **6** Repeat the above steps when you want to apply correction to multiple target areas.

Where the target areas overlap, correction will be applied by multiplying the respective settings.

## **Brightness Control**

When a single image is configured using a multiple number of projectors, the brightness levels of the images projected from the projectors may not be consistent. If this is the case, adjust the projectors so that the brightness levels are made consistent. Brightness correction can also be made automatically at periodic intervals with some projectors. This may be disabled depending on the model.

## **Brightness Control / Brightness Setting screen**

|            | 🥮 Geometry Manag  | ger Pro   | – 🗆 X  |   |
|------------|---|---|--|---|
|            | File Edit View T  | ools Version  |  |   |
|            | 🛎 🖶 රී ්  | c 🔳 🗅 🛛   | 🖇 🗖 🔲 🕅 🖬 AUTO ADJUST  |   |
| 1          | 01         PROJECTOR1           02         PROJECTOR3           03         PROJECTOR3           04         PROJECTOR4           05         PROJECTOR5           06         PROJECTOR6           07         PROJECTOR7           08         PROJECTOR7 | (0.0.0.1)         (0.0.0.2)           (0.0.0.3)         (0.0.0.3)           (0.0.0.6)         (0.0.0.6)           (0.0.0.7)         (0.0.0.8) | Lens Setting Geometry Edge Blending Uniformity Brightness Control Color Matching Masking Input Signal Other<br>Brightness Control Gain |   |
| $\bigcirc$ | Add De  | Rename  | Brightness Control   |   |
|            | Display Proj  | ector Name  |  |   |
|            | Power ON  | Standby   |  |   |
| 4          |   |   |  |   |
| 0          | Shutter Close   | Shutter Open  |  |   |
|            | OSD ON  | OSD OFF   | Calibration Time   | - |
| 0          | Status ON<br>Status Page  | Prev Next   | 00 V : 00 Apply  | 7 |
|            | Comman  | d Control   | Status Nacasa  |   |
| 8          | Test Pattern  |   | Brightness control is set to OFF.  |   |
|            |   | ~   |  |   |
|            | Image Direction   |   | update   | 9 |
|            | Landscape   | ~   |  |   |
|            | Grid Resolution   | ( 11 )  |  |   |
|            | Use Square Grid   |   |  |   |
|            | Display Grid Lines  |   |  |   |
|            | OFF   | ~   |  |   |
|            | Cursor Information -  |   |  |   |
|            | Display Cursor  |   |  |   |

 $\bigcirc$  The items displayed will vary depending on the projector you are using.

#### **Brightness Control Gain**

| Lens Setting  | Geometry     | Edge Blending | Uniformity | Brightness Control | Color Ma |
|---------------|--------------|---------------|------------|--------------------|----------|
| Brightness Co | ntrol Gain — |               |            |                    |          |
|               |              | 100           | •          |                    |          |

This is where the projector brightness is set.

The brightness of the image projected from the projectors is set according to the numerical value that is set here.

#### **Operating Mode**

| Lens Setting Geometry Edge<br>Operation Setting | Blending Uniformity B | rightness Control | Color Matching | Maskin |
|---|-----------------------|-------------------|----------------|--------|
| Operating Mode                                  | Normal                | ~                 |                |        |
| Max Light Output Level                          |                       | 100.0             |                |        |
| Light Output                                    |                       | 100.0             |                |        |

This is where the operating mode of the projector is set.

#### High:

This reduces the life of the light source more than Normal, but select this when a higher level of brightness than Normal is required.

#### Normal:

Select this when a high level of brightness is required.

#### Eco:

This mode produces a lower brightness than in [Normal] mode, but extends the life of the light source.

#### Quiet/Quiet1/Quiet2:

These modes produce a lower brightness than in [Normal] mode, but set them when prioritizing operation with low noise.

#### Long Life1/Long Life2/Long Life3:

These modes produce a lower brightness than in [Eco] mode, but extend the life of the light source.

#### User1/User2/User3:

These modes allow you to configure separate [Max Light Output Level] and [Light Output] settings.

For details, refer to the operating instructions of the projector.

#### Max Light Output Level

This allows you to adjust the upper limit for brightness correction of the screen based on the change in brightness of the light source.

Some models do not support this function.

#### Light Output

This allows you to adjust the brightness of the light source.

#### 2) Mode

This is where the brightness correction mode is selected.

Some models do not support this function.

#### OFF:

The brightness is not corrected.

#### Auto:

The brightness levels of the images projected from the projectors are corrected by the brightness sensors of the projectors.

For details, refer to the operating instructions of the projectors concerned.

#### PC:

The brightness levels of the images projected from the projectors are corrected using the "Multi Monitoring & Control Software".

For details, refer to the Operating Instructions of "Multi Monitoring & Control Software".

#### 3 Link

This is where the link mode is set.

The mode is enabled when [Auto] has been selected as the Mode setting.

Some models do not support this function.

OFF:

The brightness level of the selected projector is corrected.

#### Group A/Group B/Group C/Group D:

The brightness levels of the projectors in the respective group are corrected.

The groups are set using the network function of the projectors.

For details, refer to the operating instructions of the projectors.

### (4) Calibration Message

When a check mark is entered for  $\mathbb{Z}$  Calibration Message , a message is displayed while measuring the brightness levels for correcting the brightness.

This may be disabled depending on the model.

### **(5)** Chroma Correction

When a check mark is entered for  $\boxed{Chroma Correction}$ , color is adjusted together with brightness. This may be disabled depending on the model.

## 6 Calibration Time

The time at which to start measuring the brightness levels for correcting the brightness is selected here.

The time can be set when a check mark is entered for  $\boxed{Calibration Time}$ . This may be disabled depending on the model.

## 7 Apply

Click this to reflect the brightness correction setting on the projector. If Mode is set to OFF, brightness correction ends. In other cases, brightness correction is executed. With some models, you can select whether to re-execute brightness correction with the settings used last time or newly execute brightness correction with the current settings. Some models do not support this function.

### 8 Status

This displays the brightness correction-related status. Some models do not support this function.

| Status | Message                              | Description  |  |  |
|--------|--------------------------------------|--|--|--|
|        | Brightness sensor error              | Something is wrong with the brightness sensor (projector).     |  |  |
| Red    | Cannot apply Brightness Control.     | The brightness cannot be corrected due to a factor that is not |  |  |
|        | Please check projector status.       | related to the brightness sensor.                              |  |  |
| Vallow | The brightness can no longer be      | The brightness that can be corrected by the projector is       |  |  |
| reliow | corrected by a significant margin.   | reaching its limit.  |  |  |
| Green  | No Error                             | Normal condition.  |  |  |
| Crow   | Brightness Control is set to OFF.    | The brightness control is set to off.                          |  |  |
| Glay   | The projector is standby or cooling. | The power of the projector is in standby state or cooling.     |  |  |

## 9 Update

Click this button to check the projectors and update the Status displays. Some models do not support this function.

# **Color Matching / Color Adjustment**

When configuring a single image using a multiple number of projectors, the coloring of the image projected from the various projectors may not be consistent. If this is the case, adjust the projectors to match the coloring. This may be disabled depending on the model.

## Color Matching / Color Adjustment screen



## Note

The items that can be adjusted, setting details, and setting range vary depending on the model.

### 1 Mode

The color matching mode is selected here.

#### OFF

Color matching is not performed.

#### 3 Colors

The inconsistencies in the colors are corrected by adjusting three colors (Red, Green and Blue).

#### 7 Colors

The inconsistencies in the colors are corrected by adjusting seven colors (Red, Green, Blue, Cyan, Magenta, Yellow and White).

#### 709 Mode

The brightness (Y) and chrominance coordinate (x, y) values are adjusted here based on the values obtained using a coloring chromoscope capable of measuring chrominance coordinates and brightness levels.

The Target Data values are fixed.

709 Mode cannot be selected for some models. For details, refer to the Operating Instructions of the projector.

### Measured

The brightness (Y) and chrominance coordinate (x, y) values are adjusted here based on the values obtained using a coloring chromoscope capable of measuring chrominance coordinates and brightness levels. The Target Data values can be adjusted.

Selecting [Measured] may not be possible depending on the model. For details, refer to the Operating Instructions of the projector.

## 2 3 Colors

The Red, Green and Blue values are set here.

The settings take effect when [3 Colors] has been selected as the Mode setting. The White value can be set in addition to the Red, Green and Blue values for some models.

### 3 7 Colors

The Red, Green, Blue, Cyan, Magenta, Yellow and White values are set here. The settings take effect when [7 Colors] has been selected as the Mode setting.

## (4) Measurement Data

The Black, Red, Green, Blue and White values are set here. The settings take effect when [709 Mode] or [Measured] has been selected as the Mode setting.

### 5 Target Data

The Red, Green, Blue, Cyan, Magenta, Yellow and White values are set here. The settings take effect when [Measured] has been selected as the Mode setting.

### 6 Reset

Each adjustment item of the color matching mode is reset here. Picture Mode: Set each adjustment item to the factory default color value of the currently selected picture mode. Native: Set each adjustment item to the uncorrected value. Rec.709: Set each adjustment item to the Rec.709 equivalent value.

#### Note

This function can be used only for projectors that have this function.

### 7 Execute

Click this to reflect the reset settings in the projector and update the values of the color matching mode.

## Note

This function can be used only for projectors that have this function.

## Masking

Two kinds of masking are available.

To use this function, the upgrade kit (ET-UK20) must be applied on the selected projector.

@" "Activation" (page 12)

Some models do not support this function.

## Line Masking

The shape to be masked is set by moving the operation points on the four sides-top, bottom, left and right-of the projected image.

The area to be masked can also be inverted between positive and negative.

## Bitmap Masking

The bitmap in the 1-bit monochrome format is loaded and set as the masking data.

The position and size of the masking can be changed.

Bitmaps from 8 x 8 pixels to  $1920 \times 1200$  pixels (when the resolution of the projector is  $1920 \times 1200$  dots or  $1400 \times 1050$  dots) or  $4096 \times 2400$  pixels (when the resolution is other than the aforementioned) are supported.

The \*.bmp and \*.dib file extensions are supported.

The shape to be masked is set by adding/moving the operation points on the four sides-top, bottom, left, and right-of the projected image.

The area to be masked can also be inverted between positive and negative.

### Note

- The Line Masking and Bitmap Masking settings can be used simultaneously. In that case, masking applies to the each area set in the settings.
- When the input signal of the projector is changed, retransmission to the projector may be required.

## **Masking screen**



### 1 Sub Window

Each time this is clicked, the Sub Window screen is switched between displayed and cleared.

- An image of the entire projection area is displayed on Sub Window.
- Sub Window display can also be switched between displayed and cleared for the sub window in the View sub window.

#### 2 Zoom In

Zooms in to the editing area.

#### (3) Zoom Out

Zooms out the editing area.

## (4) Red

Selects whether the operation points on the left side of the projected image are to be displayed or not displayed.
This performs the same operation as [Mask Marker] – [Red] on the View submenu.

### 5 Blue

Selects whether the operation points at the top of the projected image are to be displayed or not displayed.

• This performs the same operation as [Mask Marker] – [Blue] on the View submenu.

### 6 Green

Selects whether the operation points on the right side of the projected image are to be displayed or not displayed.

• This performs the same operation as [Mask Marker] – [Green] on the View submenu.

## 7 Orange

Selects whether the operation points at the bottom of the projected image are to be displayed or not displayed.

• This performs the same operation as [Mask Marker] – [Orange] on the View submenu.

## 8 Editing Area

Click the operation points to select them, and then drag them to form the shape that is to be masked. The outmost red frame has an L-shaped mark to indicate the image orientation. This mark is shown at the upper left when the Image Direction setting is OFF, and the location where it is shown also moves depending on the Image Direction setting.

### **Right-clicking**

Clicking the right-mouse button in the editing area displays a menu with following items. **Reset, Flip Vertical, Flip Horizontal, Bitmap Masking Custom** 

### Reset, Flip Vertical, Flip Horizontal

The menu functions are the same as with the Edit submenu. "Edit submenu" (page 93)

## **Bitmap Masking Custom**

Add/delete operation points on the sides with masking enabled in Custom of Bitmap Masking.

## **9** Mode Switching

OFF: Masking is not performed.

PC-1 / PC-2 / PC-3: Masking is enabled.

## Note

When masking is enabled, only one piece of data (PC) can be saved for some models.

## (10) Edit, View

In addition to the menu items described in "Main menu" (page 38), the following menu items can be used on the Masking screen.

## Edit submenu

#### Reset

When Line Masking has been performed, the positions of the operation points are returned to their initial statuses.

Returns to the status established when the bitmap has been loaded when Bitmap Masking is executed.

#### **Flip Vertical**

Click to flip vertically the correction status of the entire image.

#### Flip Horizontal

Click to flip horizontally the correction status of the entire image.

### View submenu

#### Mask Marker (Red, Green, Blue, Orange)

Selects whether the operation points are to be displayed or not displayed. The non-displayed operation points are fixed at the positions when the selection was made not to display them.

## Line Masking



## 1 Left

When a check mark is entered for **Left**, masking based on the operation point on the left side of the projected image is enabled.

### 2 Upper

When a check mark is entered for **Upper**, masking based on the operation point at the top of the projected image is enabled.

### 3 Right

When a check mark is entered for Right, masking based on the operation point on the right side of the projected image is enabled.

#### (4) Lower

When a check mark is entered for **lower**, masking based on the operation point at the bottom of the projected image is enabled.

#### 5 Invert

When a check mark is entered for Invert, the Line Masking area can be inverted between positive and negative.



Upper operation point (Blue)

Lower operation point (Orange)

The operation points positioned at both ends of each side can be moved only around the outer circumference (along the four sides-top, bottom, left, and right) of the projected image.

When an operation point at the center of a side is moved, it can be moved without changing the angle of the straight line that connects the operation points at both ends of the side.

When the operation points have been selected, they can also be moved by operating the cursor keys on the keyboard.

## **Bitmap Masking**

| PC-1 ✓<br>Line Masking<br>☑ Enable<br>□ Left □ Upper<br>□ Invert | Right Lower | Bitmap Masking<br>Enable<br>File<br>Invert | -Custom<br>☑ Left ☑ Upper<br>☐ Invert | Right Lower          |  |
|--|-------------|--|---------------------------------------|----------------------|--|
|  |             |  |                                       |                      |  |
|  |             | 2 (1)                                      | (:                                    | <mark> </mark><br>3) |  |

## 1) File

Click this button to open the screen on which to select the bitmap data used for masking.

Using the bitmap data which has been loaded, mouse operations can be used to move, enlarge or reduce the masking area.

The bitmap data can be moved, enlarged, or reduced in a display area with a resolution of 2880 x 1800 pixels (when the resolution of the projector is 1920 x 1200 dots or 1400 x 1050 dots) or 6144 x 3600 pixels (when the resolution is other than the aforementioned).

If [File] is clicked when the bitmap data for masking has already been loaded, the previously loaded bitmap data is discarded and the new loaded bitmap data is set for masking.

## 2 Invert

When a check mark is entered for movent, the Bitmap Masking area can be inverted between positive and negative.





## 3 Custom

The shape to be masked is set by adding/moving the operation points on the four sides-top, bottom, left, and right-of the projected image.

#### Left:

When a check mark is entered for **Left**, masking based on the operation point on the left side of the projected image is enabled.

## Upper:

When a check mark is entered for **Upper**, masking based on the operation point at the top of the projected image is enabled.

### **Right:**

When a check mark is entered for **Right**, masking based on the operation point on the right side of the projected image is enabled.

#### Lower:

When a check mark is entered for **I** Lower , masking based on the operation point at the bottom of the projected image is enabled.

#### Invert:

When a check mark is entered for Invert , the Bitmap Masking Custom area can be inverted between positive and negative.



The operation points positioned at both ends of each side can be moved only around the outer circumference (along the four sides-top, bottom, left, and right) of the projected image.

If you right-click on a side and then select [Add Point], you can add an operation point (a maximum of 15 operation points can be added per side).

To delete an added operation point, right-click it and select [Delete Point].

# **Input Signal Adjustments**

Projectors normally identify the input signals automatically, but if unstable signals are to be input, this software application allows the format matching the input signals to be selected, position adjustments to be made, and so on by manual means. This may be disabled depending on the model.

## **Input Signal screen**

| Geometry Manager Pro                               |                   |                               |                    |                             | - 🗆 X        |
|--|-------------------|-------------------------------|--------------------|-----------------------------|--------------|
| File Edit View Tools Version                       |                   |                               |                    |                             |              |
| 😂 🖬 🕹 🤊 d 🔳 🗎                                      | 😂 🗖               |                               |                    |                             | AUTO ADJUST  |
|  |                   | 1 1 1                         | 1                  | 1                           |              |
| 01 PROJECTOR1 (0.0.0.1)                            | Lens Setting Geon | etry Edge Blending Uniformity | Srightness Control | olor Matching Masking Input | Signal Other |
| 02 PROJECTOR2 (0.0.0.2)                            | RGB1_V/C_Video    | RGB2                          | DVLD               | Zoom Mode In                | ternal 🗸     |
| 03 PROJECTOR3 (0.0.0.3)<br>04 PROJECTOR4 (0.0.0.4) |                   | HODE                          | 5115               | Interlocked                 |              |
| 05 PROJECTOR5 (0.0.0.5)                            | HDMI              | SDI1 SDI2                     | Digital Link       | Vertical                    | 50 🔹         |
| 06 PROJECTOR6 (0.0.0.6)<br>07 PROJECTOR7 (0.0.0.7) |                   |                               |                    | Horizontal                  | 50           |
| 08 PROJECTOR8 (0.0.0.8)                            |                   |                               |                    |                             |              |
|  |                   |                               |                    | Shift                       |              |
| Add Del Rename                                     | System Selector   | RGB / 640x480/60 ~            |                    | Vertical                    | 0            |
| Display Projector Name                             | Aspect            | Default / Auto / VID Auto 🗸   |                    | Horizontal                  | 0            |
| Power ON Standby                                   |                   |                               |                    |                             |              |
|  | Clock Phase       | 0                             |                    |                             |              |
| Shutter Close Shutter Open                         |                   |                               |                    |                             |              |
| OSD ON OSD OFF                                     |                   |                               |                    |                             |              |
| Status ON Status OFF                               |                   |                               |                    |                             |              |
| Status Page Prev Next                              |                   |                               |                    |                             |              |
| Command Control                                    |                   |                               |                    |                             |              |
| Test Pattern                                       |                   |                               |                    |                             |              |
|  |                   |                               |                    |                             |              |
| Image Direction                                    | 1                 |                               |                    |                             |              |
|  |                   |                               |                    |                             |              |
| Grid Resolution                                    |                   |                               |                    |                             |              |
| □ IIse Square Grid                                 |                   |                               |                    |                             |              |
| Display Grid Lines                                 |                   |                               |                    |                             |              |
| OFF V  |                   |                               |                    |                             |              |
| Cursor Information                                 | 1                 |                               |                    |                             |              |
| Display Cursor                                     |                   |                               |                    |                             |              |
| Coordinate Information                             |                   |                               |                    |                             |              |
| Absolute   |                   |                               |                    |                             |              |
| Relative   |                   |                               |                    |                             |              |
| Transfer   | 1                 |                               |                    |                             |              |
| Manual Transfer                                    |                   |                               |                    |                             |              |
| Auto Transfer                                      |                   |                               |                    |                             |              |

## 1 Input Select

These are used to select the input.

Click the input (selector) button of the signals to be projected.

The inputs that can be selected vary depending on the model. For a model equipped with slots, the buttons are enabled only for the slots with boards inserted, and the inputs that can be selected are displayed on the buttons.

| SDI1          | SDI2          | SDI3         | SDI4         |
|---------------|---------------|--------------|--------------|
| HDMI1 [Slot1] | HDMI2 [Slot1] | [Slot1]      | [Slot1]      |
| [Slot2]       | [Slot2]       | SDI3 [Slot2] | SDI4 [Slot2] |

This operation is reflected in the projector even if a check mark has not been entered for CAuto Transfer.

## Note

For a model equipped with slots, if a change such as adding or deleting a board is made while connected to the corresponding projector from this software, the board state cannot be reflected correctly.

In this case, the state will be reflected correctly if you perform one of the following operations.

- Execute [Reload] from the menu.
- Change to another tab and then select this tab again.
- Select another projector and then select this projector again.
- Restart this software and then connect with the corresponding projector.
- Delete the corresponding projector from this software and then add it again.

## 2 System Selector

The system format which matches the input signals is selected here. The formats which can be selected differ depending on the projector model, input signals and input connectors.

| Input Select              | System   | Selector  |
|---------------------------|--|---|
| RGB1, Y/C or              | When [RGB/YPbPr] is selected*1   | When [Y/C] or [Video] is selected*1                                 |
| RGB1, Y/C, Video          | RGB / VGA60<br>YCbCr / YPbPr / 480p YCbCr<br>480p RGB<br>RGB / 640x480/60p<br>YCbCr / YPbPr / 480/60p YCbCr<br>480/60p RGB | Auto<br>NTSC<br>NTSC4.43<br>PAL<br>PAL-M<br>PAL-N<br>SECAM<br>PAL60 |
| RGB1, RGB2 or<br>Computer | RGB / VGA60<br>YCbCr / YPbPr / 480p YCbCr<br>480p RGB<br>RGB / 640x480/60p<br>YCbCr / YPbPr / 480/60p YCbCr<br>480/60p RGB |   |
| Video                     | Auto<br>NTSC<br>NTSC4.43<br>PAL<br>PAL-M<br>PAL-N<br>SECAM<br>PAL60  |   |
| DVI-D                     | RGB<br>YCbCr / YPbPr   |   |
| HDMI                      | Auto<br>RGB<br>YCbCr / YPbPr   |   |
| Digital Link              | Auto<br>RGB<br>YCbCr / YPbPr   |   |

## **Adjustment and Settings**

| Input Select | System Selector                  |                                |                                       |  |  |  |
|--------------|----------------------------------|--------------------------------|---------------------------------------|--|--|--|
| SDI1 or SDI  | When [Single Link] is selected*2 | When [Dual Link] is selected*2 | When [Auto] is selected*2             |  |  |  |
|              | Auto                             | Auto                           | Auto                                  |  |  |  |
|              | 480i YCbCr                       | 1080/24p RGB                   |                                       |  |  |  |
|              | 480/60i YCbCr                    | 2K/24p RGB                     |                                       |  |  |  |
|              | 576i YCbCr                       | 2K/24p XYZ                     |                                       |  |  |  |
|              | 576/50i YCbCr                    | 1080/24sF RGB                  |                                       |  |  |  |
|              | 720/50p YPbPr                    | 2K/24sF RGB                    |                                       |  |  |  |
|              | 720/60p YPbPr                    | 2K/24sF XYZ                    |                                       |  |  |  |
|              | 1035/60i YPbPr                   | 1080/25p RGB                   |                                       |  |  |  |
|              | 1080/24p YPbPr                   | 1080/30p RGB                   |                                       |  |  |  |
|              | 1080/24sF YPbPr                  | 1080/50i RGB                   |                                       |  |  |  |
|              | 1080/25p YPbPr                   | 1080/60i RGB                   |                                       |  |  |  |
|              | 1080/30p YPbPr                   | 1080/50p RGB                   |                                       |  |  |  |
|              | 1080/50i YPbPr                   | 1080/60p RGB                   |                                       |  |  |  |
|              | 1080/60i YPbPr                   | 1080/50p YPbPr                 |                                       |  |  |  |
|              | 1080/50p YPbPr                   | 1080/60p YPbPr                 |                                       |  |  |  |
|              | 1080/60p YPbPr                   | 2K/48p RGB                     |                                       |  |  |  |
|              | 1080/24p RGB                     | 2K/50p RGB                     |                                       |  |  |  |
|              | 1080/24sF RGB                    | 2K/60p RGB                     |                                       |  |  |  |
|              | 1080/25p RGB                     | 2K/48p YPbPr                   |                                       |  |  |  |
|              | 1080/30p RGB                     | 2K/50p YPbPr                   |                                       |  |  |  |
|              | 1080/50i RGB                     | 2K/60p YPbPr                   |                                       |  |  |  |
|              | 1080/601 RGB                     |                                |                                       |  |  |  |
|              | 2K/24p RGB                       |                                |                                       |  |  |  |
|              |                                  |                                |                                       |  |  |  |
|              |                                  |                                |                                       |  |  |  |
|              |                                  |                                |                                       |  |  |  |
|              |                                  |                                |                                       |  |  |  |
| 2102         | When [Single Link] is selected*2 | When [Dual Link] is selected*2 | When [Aute] is selected* <sup>2</sup> |  |  |  |
| 3012         | Auto                             |                                | Auto                                  |  |  |  |
|              |                                  | 1080/24p BCB                   | Auto                                  |  |  |  |
|              | 576i YChCr                       | 2K/24p PCP                     |                                       |  |  |  |
|              | 720/50n YPbPr                    | 2K/24p XV7                     |                                       |  |  |  |
|              | 720/60p YPbPr                    | 1080/24sF RGB                  |                                       |  |  |  |
|              | 1035/60i YPbPr                   | 2K/24sE RGB                    |                                       |  |  |  |
|              | 1080/24p YPbPr                   | 2K/24sF XYZ                    |                                       |  |  |  |
|              | 1080/24sF YPbPr                  | 1080/25p RGB                   |                                       |  |  |  |
|              | 1080/25p YPbPr                   | 1080/30p RGB                   |                                       |  |  |  |
|              | 1080/30p YPbPr                   | 1080/50i RGB                   |                                       |  |  |  |
|              | 1080/50i YPbPr                   | 1080/60i RGB                   |                                       |  |  |  |
|              | 1080/60i YPbPr                   | 1080/50p RGB                   |                                       |  |  |  |
|              | 1080/50p YPbPr                   | 1080/60p RGB                   |                                       |  |  |  |
|              | 1080/60p YPbPr                   | 1080/50p YPbPr                 |                                       |  |  |  |
|              | 1080/24p RGB                     | 1080/60p YPbPr                 |                                       |  |  |  |
|              | 1080/24sF RGB                    | 2K/48p RGB                     |                                       |  |  |  |
|              | 1080/25p RGB                     | 2K/50p RGB                     |                                       |  |  |  |
|              | 1080/30p RGB                     | 2K/60p RGB                     |                                       |  |  |  |
|              | 1080/50i RGB                     | 2K/48p YPbPr                   |                                       |  |  |  |
|              | 1080/60i RGB                     | 2K/50p YPbPr                   |                                       |  |  |  |
|              |                                  | 2K/60p YPbPr                   |                                       |  |  |  |

\*<sup>1</sup> In the Other screen, select with [Display Option] - [RGB In] - [RGB1 Input Setting].

\*2 In the Other screen, select with [Display Option] - [SDI In] - [SDI Link].

🖙 "Display Option" (page 106)

Note

- For models that do not support dual link HD-SDI signals, the system format that can be selected when [SDI1], [SDI], or [SDI2] is selected with [Input Select] is the same as for [Single Link].
- Even if an [Input Select] button shown in the table above is selected, the function may be disabled depending on the projector you are using.

### Adjustment and Settings

## 3 Aspect

The aspect ratio of the images is selected here. The aspect ratios that can be selected are listed below:

| • | Default / Auto / VID Auto |
|---|---------------------------|
| • | Through                   |
| • | 16:9                      |
| • | 4:3                       |
| • | H FIT                     |

- V FIT
- HV FIT

For details, refer to the operating instructions of the projectors.

### (4) Clock Phase

Image flickering and contour blurring are adjusted here.

Input value range: 0 to 31

However, they cannot be adjusted when Y/C signals have been selected as the input signals. For details, refer to the operating instructions of the projectors.

### 5 Zoom Mode

The zoom mode is selected here.

The setting is enabled when [Default / Auto / VID Auto] has been selected as the Aspect setting. The modes that can be selected are listed below:

| • | Internal |
|---|----------|
|   | Full     |

For details, refer to the operating instructions of the projectors.

### 6 Vertical (Zoom)

The zoom magnification in the vertical direction is set here. Input value range: 50 to 999

### **7** Horizontal (Zoom)

The zoom magnification in the horizontal direction is set here. Input value range: 50 to 999

### 8 Interlocked

When a check mark is entered for **Interlocked**, the same zoom magnification can be set in both the horizontal and vertical directions.

#### (9) Vertical (Shift)

The vertical position of the projected image is set here. The input value range varies depending on the projector model.

### (1) Horizontal (Shift)

The horizontal position of the projected image is set here. The input value range varies depending on the projector model.

#### Note

The Input Signal screen items cannot be reset with the [Reset Data (Current Tab)] command on the File submenu and icon menu.

# **Projector Menu Settings**

Some of the operations using the projector's menus can be performed using this software application. This may be disabled depending on the model.

## Other screen



### 1 Picture

Click to display the Picture screen. The video mode, black level and other settings related to the image adjustments can be selected.

### 2 Position

Click to display the Position screen. The convergence settings can be selected.

## Note

This function can be used only for projectors that have this function.

### 3 Advanced Menu

Click to display the Advanced Menu screen. The blanking width, input resolution and other settings can be selected.

### (4) Display Option

Click to display the Display Option screen.

The color correction, aspect ratio and other settings related to the image display used for large screens can be selected.

## **5** Projector Setup

Click to display the Projector Setup screen. The projector's projection system, lamp selection and other hardware settings can be established.

## **(6)** Displayed when the projector you are using has the corresponding function.

## P in P

Click to display the P in P screen.

The positions and sequence of priority for the main screen and sub screens as well as other P in P functions can be set.

## Multi Display

The inputs for 4-split display, frame lock, and other settings for the multi screen function can be set.

## Picture

| Picture Advanced Menu | Display Option Projector Setup | P in P                   |        |                         |            |
|-----------------------|--------------------------------|--------------------------|--------|-------------------------|------------|
| Picture Mode          |                                | Color Temperature        |        | Gamma                   |            |
| Standard ~            | Rename                         | Default ~                | Rename | Default ~               | Rename     |
| Contrast              | 0                              | White Balance Red High   | 255    | System Daylight View    | OFF v      |
| Brightness            | 0                              | White Balance Green High | 255 🐥  | Dynamic Contrast        |            |
| Color                 | 0                              | White Balance Blue High  | 255    | OFF ~                   |            |
| Tint                  |                                | White Balance Red Low    | 0 •    | Auto Contrast           | OFF ~      |
| Sharpness             |                                | White Balance Green Low  | 0      | Bright Signal Level     | 6          |
| Noise Deduction       | OFF                            | White Balance Blue Low   | 0      | Lights Out Timer        | Disable ~  |
| Waveform Meniter      | 011                            |                          |        | Lights Out Signal Level | 0          |
| OFF ~                 |                                |                          |        | Manual Intensity        | 0 ~        |
| Line Position         | 0 •                            |                          |        | Dynamic Gamma           | OFF $\lor$ |
|                       |                                |                          |        | Color Space             | Native ~   |

The following items can be set:

| Picture Mode **          | Dynamic Contrast        |
|--------------------------|-------------------------|
| Contrast                 | Contrast Mode           |
| Brightness               | Auto Contrast           |
| Color                    | Brilliant Correction    |
| Tint                     | Bright Signal Level     |
| Sharpness                | Lights Out Timer        |
| Noise Reduction          | Lights Out Signal Level |
| Waveform Monitor         | Lights Out Fade-In      |
| Line Position            | Lights Out Fade-Out     |
| Default Picture Mode     | Manual Intensity        |
| Color Temperature        | Dynamic Gamma           |
| White Balance Red High   | Dynamic Contrast NX     |
| White Balance Green High | Auto Contrast           |
| White Balance Blue High  | Bright Signal Level     |
| White Balance Red Low    | Lights Out Timer        |
| White Balance Green Low  | Lights Out Signal Level |
| White Balance Blue Low   | Lights Out Fade-In      |
| Gamma                    | Lights Out Fade-Out     |
| System Daylight View     | Manual Intensity        |
| Dynamic Iris             | Dynamic Gamma           |
| Auto Iris                | AI                      |
| Manual Iris              | White Gain              |
| Dynamic Gamma            | Color Space             |

The items that can be adjusted, setting details, and setting ranges vary depending on the projector model. Refer to the operating instructions of the projector.

## Note

- Items marked \*\* are reflected in the projector even when a check mark has not been entered in I Auto Transfer.
- The Picture screen items cannot be reset using the [Reset Data (Current Tab)] command on the File submenu and icon menu.

## Position

| Picture Position | Advanced Menu | Display ( | Option | Projector | Setup Multi Displa | У |        |       |
|------------------|---------------|-----------|--------|-----------|--------------------|---|--------|-------|
| Convergence      |               |           |        |           |                    |   |        |       |
| ON               | $\sim$        |           |        |           |                    |   |        |       |
| Red              |               |           |        |           |                    |   |        |       |
| Upper Left       |               |           |        |           | Upper Right        | _ |        |       |
| Vertical         |               | 0.00      | A V    | Reset     | Vertical           |   | 0.00   | Reset |
| Horizontal       |               | 0.00      |        | Reset     | Horizontal         |   | 0.00   | Reset |
| Lower Left       |               |           |        |           | Lower Right        |   |        |       |
| Vertical         |               | 0.00      | 4      | Reset     | Vertical           |   | 0.00   | Reset |
| Horizontal       |               | 0.00      | A<br>T | Reset     | Horizontal         |   | 0.00 × | Reset |
| Green            |               |           |        |           |                    |   |        |       |
| Upper Left       |               |           |        |           | Upper Right        | _ |        |       |
| Vertical         |               | 0.00      | ×      | Reset     | Vertical           |   | 0.00   | Reset |
| Horizontal       |               | 0.00      | A<br>V | Reset     | Horizontal         |   | 0.00   | Reset |
| Lower Left       |               |           |        |           | Lower Right        |   |        |       |
| Vertical         |               | 0.00      | A V    | Reset     | Vertical           |   | 0.00   | Reset |
| Horizontal       |               | 0.00      | A<br>V | Reset     | Horizontal         |   | 0.00   | Reset |
| Blue             |               |           |        |           |                    |   |        |       |
| Upper Left       |               |           |        |           | Upper Right        |   |        |       |
| Vertical         |               | 0.00      |        | Reset     | Vertical           |   | 0.00   | Reset |
| Horizontal       |               | 0.00      | *<br>* | Reset     | Horizontal         |   | 0.00   | Reset |
| Lower Left       |               |           |        |           | Lower Right        |   |        |       |
| Vertical         |               | 0.00      | *<br>* | Reset     | Vertical           | - | 0.00   | Reset |
| Horizontal       |               | 0.00      | ×      | Reset     | Horizontal         |   | 0.00   | Reset |

The following items can be set:

| Convergence | Green       | Blue        |
|-------------|-------------|-------------|
| Red         | Upper Left  | Upper Left  |
| Upper Left  | Vertical    | Vertical    |
| Vertical    | Horizontal  | Horizontal  |
| Horizontal  | Upper Right | Upper Right |
| Upper Right | Vertical    | Vertical    |
| Vertical    | Horizontal  | Horizontal  |
| Horizontal  | Lower Left  | Lower Left  |
| Lower Left  | Vertical    | Vertical    |
| Vertical    | Horizontal  | Horizontal  |
| Horizontal  | Lower Right | Lower Right |
| Lower Right | Vertical    | Vertical    |
| Vertical    | Horizontal  | Horizontal  |
| Horizontal  |             |             |

The items that can be adjusted, setting details, and setting ranges vary depending on the projector model. Refer to the operating instructions of the projector.

Note

• The Position screen items cannot be reset using the [Reset Data (Current Tab)] command on the File submenu and icon menu.

## Advanced Menu

| Picture Advanced Menu Display Option | Projector S | etup P in P         |                  |
|--------------------------------------|-------------|---------------------|------------------|
| Digital Cinema Reality Auto          | $\sim$      | Clamp Position      | 24               |
| Blanking                             |             | Frame Response      | Normal $\sim$    |
| Upper                                |             | Frame Creation      |                  |
|                                      |             | Frame Creation Mode | OFF $\checkmark$ |
| Left Right 0                         |             | Film Detection      | OFF v            |
| Lower                                |             | Raster Position     |                  |
| 0                                    |             | Vertical            | 0                |
|                                      |             | Horizontal          | 0 •              |
| Input Resolution                     |             |                     |                  |
| Total Dots 1024 🔹                    |             |                     |                  |
| Display Dots 1024                    |             |                     |                  |
| Total Lines 1024                     |             |                     |                  |
| Display Lines 1024                   |             |                     |                  |

The following items can be set:

| Digital Cinema Reality | Clamp Position      |
|------------------------|---------------------|
| Gradation Smoother     | Frame Response      |
| Blanking               | Frame Delay         |
| Upper                  | Frame Creation      |
| Left                   | Frame Creation Mode |
| Right                  | Film Detection      |
| Lower                  | Frame Lock          |
| Input Resolution       | Raster Position     |
| Total Dots             | Vertical            |
| Display Dots           | Horizontal          |
| Total Lines            | Quad Pixel Drive    |
| Display Lines          | Smooth Pixel Drive  |

The items that can be adjusted, setting details, and setting ranges vary depending on the projector model. Refer to the operating instructions of the projector.

## Note

The Advanced Menu screen items cannot be reset using the [Reset Data (Current Tab)] command on the File submenu and icon menu.

# Display Option

|                     | OFF          | Machanical Shutter   |                   |                  |  |  |     |
|---------------------|--------------|--|-------------------|------------------|--|--|-----|
| Screen Setting      |              | Eade In  | 055               |                  | SDI Link   | Single   | ~   |
| Screen Format       | 16:10        |  | orr               | ~                | Target Input   | Single:SDI1  | ~   |
| /ertical Position   | 0            | rade-Out   | OFF               | ~                | Resolution   | Auto   |     |
| Horizontal Position | 0            | Startup  | Open              | ~                |  |  |     |
|                     |              | Shut-Off   | Open              | $\sim$           |  |  |     |
| Auto Signal         |              | On-Screen Display  |                   |                  | 3G-SDI Mapping   | Auto   | ~   |
| Auto Setup          |              | OSD Position   | 2                 | ~                | System Selector  | Auto   | ~   |
| lode                | Default      | ~  |                   |                  |  |  |     |
| )isplay Dots        | 1024 🔹       | OSD Retetion   | OFF               |                  | Bit Depth  | Auto   | `   |
| Position Adjust     | Execute      | USD Rotation   | UFF               | ~                | Signal Level   | 64-940   | `   |
| Signal Level Adjust | LAGONIC      | OSD Design   | 1                 | ~                |  |  |     |
| ackground Color     | Blue         | OSD Memory   |                   |                  |  |  |     |
| Startup Logo        | Default Loop | Warning Message  |                   |                  | Digital Link In  |  |     |
| Cut Off             | bondun Logo  |  |                   |                  | Signal Level   | Auto   | ~   |
| Red Gr              | een Blue     |  |                   |                  |  |  |     |
|                     |              |  |                   |                  | EDID Mode  | Default  | ~   |
| mage Rotation       | OFF          | $\sim$   |                   |                  | EDID Resolution/V Scan Freq.   | 1920x1200p/60  |     |
|                     |              |  |                   |                  |  |  |     |
|                     |              |  |                   |                  | RGB In   |  |     |
|                     |              |  |                   |                  | RGB1 Input Setting   | DCB/VDbDr  |     |
|                     |              | Backup Input Setting   |                   |                  | DCB1 Syna Sliga Laval  | 1055 TEST  |     |
|                     |              | Duckup input Setting   | 055               |                  | RODT Sylic Slice Level   | nign   | ~   |
|                     |              | Backup Input Mode  | Urr               | $\sim$           |  |  |     |
|                     |              | Backup Input Mode  | UT                | ~                | RGB2 Sync Slice Level  | High   | ~   |
|                     |              | Automatic Switching  | orr               | ~                | RGB2 Sync Slice Level  | High   | ``` |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RGB1/RGB2                                    | OFF               | ~                | RGB2 Sync Slice Level<br>RGB2 EDID Mode  | High<br>Default  | ~   |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RGB1/RGB2 HDM/DVLD                           | OFF               | ~                | RGB2 Sync Slice Level<br>RGB2 EDID Mode<br>RGB2 EDID Resolution  | High<br>Default<br>1920x1200p  | ~   |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RGB1/RGB2 HDM/DVI-D                          | OFF<br>OFF        | ~                | RGB2 Sync Slice Level<br>RGB2 EDD Mode<br>RGB2 EDD Resolution<br>RGB2 EDD V Scan Freq.   | High<br>Default<br>1920x1200p<br>60Hz  | ~   |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RGB I/RGB2 HDM/DVI-D SDI1/SDI2               | OFF<br>OFF<br>OFF | ~<br>~<br>~      | RGB2 Sync Slice Level<br>RGB2 EDD Mode<br>RGB2 EDD Resolution<br>RGB2 EDD V Scan Freq.   | High<br>Default<br>1920x1200p<br>60Hz  |     |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RGB I/RGB2 HDM/DVI-D SDI1/SDI2               | OFF<br>OFF<br>OFF | ~<br>~<br>~      | RGB2 Sync Slice Level RGB2 EDID Mode RGB2 EDID Resolution RGB2 EDID V Scan Freq. DVI-D In DVI-D In   | High<br>Default<br>1920x1200p<br>60Hz  |     |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RGB I/RGB2 HDM/DVI-D SDI1/SDI2               | OFF<br>OFF<br>OFF | ×<br>×<br>×      | RGB2 Sync Silce Level<br>RGB2 EDD Mode<br>RGB2 EDD V Scan Freq.<br>DVI-D In<br>DVI Signal Level  | High<br>Defauit<br>1920x1200p<br>60Hz<br>0-255-PC  |     |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RGB I/RGB2 HDM/DVI-D SDI1/SDI2               | OFF<br>OFF<br>OFF | ><br>><br>>      | RGB2 Sync Silce Level<br>RGB2 EDID Mode<br>RGB2 EDID Resolution<br>RGB2 EDID V Scan Freq.<br>DVI-D In<br>DVI Signal Level<br>DVI EDID Select   | High<br>Default<br>1920x1200p<br>60Hz<br>0-255:PC<br>EDD3  |     |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RG81/RG82 H0M/IDVI-D SD11/SD12               | OFF<br>OFF<br>OFF | ><br>><br>>      | RGB2 Sync Silce Level<br>RGB2 EDID Mode<br>RGB2 EDID V Scan Freq.<br>DVI-D In<br>DVI Signal Level<br>DVI EDID Select<br>DVI EDID Mode  | High Defauit 1920x1200p 60Hz 0-255:PC EDD3 Defauit   |     |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RG81/RG82 HMMDV-D SDI1/SDI2                  | OFF<br>OFF<br>OFF | ><br>><br>>      | RGB2 Sync Slice Level<br>RGB2 EDID Mode<br>RGB2 EDID Resolution<br>RGB2 EDID V Scan Freq.<br>DVI-D In<br>DVI Signal Level<br>DVI EDID Select<br>DVI EDID Mode<br>DVI EDID Resolution   | High Defauit 1920x1200p 60Hz 6.255.PC EDD03 Defauit 1920x1200p   |     |
|                     |              | Backup Input Mode<br>Automatic Switching<br>Simul Input Setting<br>RG91/RG92<br>HDM/0V-D<br>SDI1/SDI2  | OFF<br>OFF<br>OFF | ><br>><br>>      | RGB2 Sync Slice Level<br>RGB2 EDD Mode<br>RGB2 EDD Resolution<br>RGB2 EDD V Scan Freq.<br>DVI-D In<br>DVI Signal Level<br>DVI EDD Select<br>DVI EDD Mode<br>DVI EDD Mode<br>DVI EDD Nesolution<br>DVI EDD V Scan Freq.                         | High           Default           1920x1200p           60Hz           0-255:PC           EDD3           Default           1920x1200p           60Hz   |     |
|                     |              | Backup Input Mode<br>Automatic Switching<br>Simul Input Setting<br>RGB1/RGB2<br>HDM/DV+D<br>SDI1/SDI2  | OFF<br>OFF<br>OFF | > > > > >        | RGB2 Sync Silce Level<br>RGB2 EDD Mode<br>RGB2 EDD Resolution<br>RGB2 EDD V Scan Freq.<br>DVI-D In<br>DVI Signal Level<br>DVI EDD Select<br>DVI EDD Deleot<br>DVI EDD Resolution<br>DVI EDD V Scan Freq.<br>HDMI In                            | High           Default           1920x1200p           60Hz           0-255-PC           EDD3           Default           1920x1200p           60Hz   |     |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RGB1/RGB2 HDM/DV+D SDI1/SDI2                 | OFF<br>OFF<br>OFF | v<br>v           | RGB2 Sync Silce Level<br>RGB2 EDD Mode<br>RGB2 EDD Resolution<br>RGB2 EDD V Scan Freq.<br>DVI-D In<br>DVI Signal Level<br>DVI EDD Select<br>DVI EDD Resolution<br>DVI EDD Resolution<br>DVI EDD V Scan Freq.<br>HDMI In                        | High Default 1920x1200p 60Hz 0-255.PC EDD3 Default 1920x1200p 60Hz 0-1023  |     |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RGB1/RGB2 HDM/DV+D SDI1/SDI2                 | OFF<br>OFF<br>OFF | *<br>*<br>*      | RGB2 Sync Silce Level<br>RGB2 EDD Mode<br>RGB2 EDD Resolution<br>RGB2 EDD V Scan Freq.<br>DVI-D In<br>DVI Signal Level<br>DVI EDD Select<br>DVI EDD Mode<br>DVI EDD Mode<br>DVI EDD V Scan Freq.<br>HDMI In<br>HDMI Signal Level               | High Default 1920x1200p 60Hz 0-255:PC EDD3 Default 1920x1200p 60Hz 0-1023  |     |
|                     |              | Backup Input Mode Automatic Switching Simul Input Setting RG81KR6B2 HDMIDVI-D SDI1/SDI2                | OFF<br>OFF<br>OFF | *<br>*<br>*      | RGB2 Sync Silce Level RGB2 EDID Mode RGB2 EDID Resolution RGB2 EDID V Scan Freq. DVI-D In DVI Signal Level DVI EDID Select DVI EDID Mode DVI EDID Mode DVI EDID V Scan Freq. HDMI In HDMI IN HDMI Signal Level UNIV Scan Level                 | High           Default           1920x1200p           60Hz           0-255:PC           EDD3           Default           1920x1200p           60Hz           0-1023  |     |
|                     |              | Backup Input Mode<br>Automatic Switching<br>Simul Input Setting<br>RGB1/RGB2<br>HMMIDVI-D<br>SDI1/SDI2 | OFF<br>OFF<br>OFF | *<br>*<br>*<br>* | RGB2 Sync Slice Level<br>RGB2 EDD Mode<br>RGB2 EDD Resolution<br>RGB2 EDD V Scan Freq.<br>DVI-D In<br>DVI Signal Level<br>DVI EDD Select<br>DVI EDD Mode<br>DVI EDD Mode<br>DVI EDD V Scan Freq.<br>HDMI In<br>HDMI Signal Level               | High           Default           1920x1200p           60Hz           0-255.PC           EDD3           Default           1920x1200p           60Hz           0-1023           Default  |     |
|                     |              | Backup Input Mode<br>Automatic Switching<br>Simul Input Setting<br>RGB1/RGB2<br>HDM/IOV-D<br>SDI1/SDI2 | OFF<br>OFF<br>OFF | v<br>v<br>v      | RGB2 Sync Slice Level<br>RGB2 EDD Mode<br>RGB2 EDD Resolution<br>RGB2 EDD V Scan Freq.<br>DVI-D In<br>DVI EDD Select<br>DVI EDD Mode<br>DVI EDD Mode<br>DVI EDD V Scan Freq.<br>HDMI In<br>HDMI Signal Level<br>HDMI EDD Mode<br>HDMI EDD Mode | High           Default           1920x1200p           60Hz           0-255:PC           EDD3           Default           1920x1200p           60Hz           0-1023           Default           1920x1200p           60Hz           0-1023 |     |

The settings of the items listed below can be established and operated.

| Large Screen Correction | Backup Input Setting           | RGB In                     |
|-------------------------|--------------------------------|----------------------------|
| Screen Setting          | Backup Input Mode              | RGB Sync Slice Level       |
| Screen Format           | Automatic Switching            | RGB EDID Resolution        |
| Vertical Position *     | Simul Input Setting            | RGB EDID V Scan Freq.      |
| Horizontal Position *   | RGB1/RGB2                      | RGB1 Input Setting         |
| Screen Marker           | HDMI/DVI-D                     | RGB1 Sync Slice Level      |
| Upper                   | SDI1/SDI2                      | RGB2 Sync Slice Level      |
| Lower                   | SDI In                         | RGB2 EDID Select           |
| Left                    | Slot In                        | RGB2 EDID Mode             |
| Right                   | SDI In                         | RGB2 EDID Resolution       |
| Horizontal              | SDI Link                       | RGB2 EDID V Scan Freg.     |
| Vertical                | SDI1 Signal Level              | Computer In                |
| Auto Signal             | SDI1 Bit Depth                 | Computer Sync Slice Level  |
| Auto Setup              | SDI1 3G-SDI Mapping            | Computer EDID Mode         |
| Mode                    | SDI2 Signal Level              | Computer EDID Resolution   |
| Display Dots *          | SDI2 Bit Depth                 | Computer EDID V Scan Freq. |
| Position Adjust         | SDI2 3G-SDI Mapping            | DVI-D In                   |
| Signal Level Adjust     | Dual Link Signal Level         | DVIEDID                    |
| Execute                 | Dual Link Bit Depth            | DVI Signal Level           |
| Background Color        | Dual Link 3G-SDI Mapping       | DVI EDID Select            |
| Startun Logo            | Target Input                   | DVI EDID Mode              |
| Cut Off                 | (The selection options of the  | DVI EDID Resolution        |
| Bed                     | following adjustment items     | DVI EDID V Scan Freq.      |
| Green                   | vary depending on the selected | HDMI In                    |
| Blue                    | setting.)                      | HDMI Signal Level          |
|                         | Resolution                     | HDMI EDID Select           |
| Closed Caption Setting  | 4K Division                    | HDMI EDID Mode             |
| Shutter Setting         | 3G-SDI Mapping                 | HDMI EDID Resolution       |
| Mechanical Shutter      | System Selector                | HDMI EDID V Scan Freq.     |
| Fade-In                 | Color Space                    | Slot In                    |
| Fade-Out                | Sampling                       | Mode Select **             |
| Startup                 | Bit Depth                      | Link Select **             |
| Shut-Off                | Signal Level                   | Link Setting ***           |
| On-Screen Display       | Digital Link In                | EDID Setting ***           |
| OSD Position            | Digital Link Signal Level      | Option Setting ***         |
| OSD Size                | Digital Link EDID Select       |                            |
| OSD Rotation            | Digital Link EDID Mode         |                            |
| OSD Design              | Digital Link EDID Resolution   |                            |
| OSD Memory              | Digital Link EDID V Scan Freg. |                            |
| Input Guide             | Signal Level                   |                            |
| Warning Message         | Auto Gamma Select              |                            |
| Color Correction        | Auto Color Space Select        |                            |
| Red                     | EDID Select                    |                            |
| Green                   | EDID Mode                      |                            |
| Blue                    | EDID Resolution/V Scan Free    |                            |
| Cvan                    |                                |                            |
| Magenta                 |                                |                            |
| Yellow                  |                                |                            |
|                         |                                |                            |

The items that can be adjusted, setting details, and setting ranges vary depending on the projector model. Refer to the operating instructions of the projector.

## **Adjustment and Settings**

### Note

- Items marked with an asterisk (\*) cannot be reset using the [Reset Data (Current Tab)] command on the File submenu and icon menu.
- Items marked \*\* are switched automatically depending on whether a board is inserted in the slot and the type of board if a board is inserted.
- Items marked \*\*\* are switched automatically depending on setting of Link Select.

## Projector Setup

| Picture Advanced Menu E | Display Option Projector Setup | P in P               |                |        |
|-------------------------|--------------------------------|----------------------|----------------|--------|
| Projection Method       | Front / Floor $\sim$           | Standby Mode         | Normal         | $\sim$ |
| Cooling Condition       | Floor Setting $\checkmark$     |                      |                |        |
| Lamp Select             |                                |                      |                |        |
| Dual ~                  | Apply                          | No Signal Shut-Off   | Disable        | $\sim$ |
| Lamp failed.            |                                |                      |                |        |
| Lana Balau              |                                | Initial Startup      | Last Memory    | $\sim$ |
| OFF ~                   |                                | Startup Input Select | Last Used      | $\sim$ |
| Time                    | 00 $\sim$ : 00 $\sim$          |                      |                |        |
|                         |                                | Date and Time        |                |        |
| Lamp Power              | Eco 🗸                          | Time Zone            | +09:00         | $\sim$ |
|                         |                                |                      | Synchronize to | o PC   |

The settings of the items listed below can be established and operated.

| Projection Method                                       | Multi Projector Sync |
|---|----------------------|
| Cooling Condition                                       | Mode                 |
| High Altitude Mode                                      | Contrast Sync        |
| Lamp Select *   | Shutter Sync         |
| Lamp Relay  | Terminal Select      |
| Time  | No Signal Setting    |
| Standby Mode  | Secondary Input      |
| Quick Startup   | Back Color           |
| Valid Period  | No Signal Shut-Off   |
| No Signal Shut-Off                                      | No Signal Lights-Off |
| No Signal Lights-Off                                    | Power Management     |
| Initial Startup   | No Signal Shut-Off   |
| Startup Input Select                                    | No Signal Lights-Off |
| AC Voltage Monitor                                      |                      |
| Date and Time   |                      |
| Time Zone *   |                      |
| Synchronize to PC **                                    |                      |
| (The projector's clock setting is synchronized with the |                      |
| computer.)  |                      |

The items that can be adjusted, setting details, and setting ranges vary depending on the projector model. Refer to the operating instructions of the projector.

### Note

- Items marked with an asterisk (\*) cannot be reset using the [New All Data] and [New Data (For Current Window)] commands on the File submenu and icon menu.
- Items marked \*\* are reflected in the projector even when a check mark has not been entered in Auto Transfer.
# P in P

| Picture Advanced Menu | Display Option Projector Setup | P in P       |      |
|-----------------------|--------------------------------|--------------|------|
| P in P Mode           | User1 v                        |              |      |
| Frame Lock            | Main Window $\sim$             |              |      |
| Туре                  | Sub Window $\checkmark$        |              |      |
|                       |                                |              |      |
| Main Window           |                                | Sub Window   |      |
| Input Signal          | RGB1 ~                         | Input Signal | HDMI |
| Size                  |                                | Size         |      |
| Interlocked           |                                | Interlocked  |      |
| Vertical              | 100                            | Vertical     | 33 • |
| Horizontal            | 100                            | Horizontal   | 33 * |
| Position              |                                | Position     |      |
| Vertical              | 0                              | Vertical     | 0    |
| Horizontal            | 0                              | Horizontal   | 0    |
|                       |                                | Clock Phase  | 0    |
|                       |                                |              |      |

#### The following items can be set:

| P in P Mode ** | Sub Window   |
|----------------|--------------|
| Frame Lock     | Input Signal |
| Туре           | Size         |
| Main Window    | Interlocked  |
| Input Signal   | Vertical     |
| Size           | Horizontal   |
| Interlocked    | Position     |
| Vertical       | Vertical     |
| Horizontal     | Horizontal   |
| Position       | Clock Phase  |
| Vertical       |              |
| Horizontal     |              |

The items that can be adjusted, setting details, and setting ranges vary depending on the projector model. Refer to the operating instructions of the projector.

# Note

- Items marked \*\* are reflected in the projector even when a check mark has not been entered in I Auto Transfer.
- The P in P screen items cannot be reset using the [Reset Data (Current Tab)] command on the File submenu and icon menu.

## **Adjustment and Settings**

# Multi Display

| Picture Advanced Menu | Display Option Projector Setup | Multi Display      |      |        |
|-----------------------|--------------------------------|--------------------|------|--------|
| Multi Display Mode    | User1 ~                        |                    |      |        |
| Frame Lock            | Upper Left Window $\sim$       |                    |      |        |
|                       |                                |                    |      |        |
|                       |                                |                    |      |        |
| Upper Left Window     | SDI1 V                         | Upper Right Window | SDI2 | $\sim$ |
|                       |                                |                    |      |        |
| Lower Left Window     | SDI3 V                         | Lower Right Window | SDI4 | $\sim$ |
|                       |                                |                    |      |        |

The following items can be set:

| Multi Display Mode ** |  |
|-----------------------|--|
| Frame Lock            |  |
| Upper Left Window     |  |
| Lower Left Window     |  |
| Upper Right Window    |  |
| Lower Right Window    |  |

The items that can be adjusted, setting details, and setting ranges vary depending on the projector model. Refer to the operating instructions of the projector.

# Note

- Items marked \*\* are reflected in the projector even when a check mark has not been entered in I Auto Transfer.
- The Multi Display screen items cannot be reset with the [Reset Data (Current Tab)] command on the File submenu and icon menu.

# **Projector Control**

C

Control commands can be sent to the projector.

|  |  |   | 2                                    |                             |  | 3             |
|--|--|---|--------------------------------------|-----------------------------|--|---------------|
| 🥮 Command Control  |  |   |                                      |                             |  | ×             |
| 01 NAME6534 (192, 168, 0, 8) PT-RZ                                 | 660/ Send Command  |   |                                      |                             |  |               |
| 02 NAME4311 (192.168.0.10) PT-R                                    | Z660 QIN   |   |                                      |                             |  | Send          |
| 03 PROJECTOR3 (192.168.0.11) PT<br>04 PROJECTOR4 (192.168.0.12) PT | T-RQ<br>T-RQ   |   |                                      |                             |  | <b>F</b> -114 |
|  | Shutter CLOSE  |   | Function 6                           |                             | Function 11  | Ear           |
|  | Shutter OPEN   |   | Frame Creation MAX                   |                             | Function 12  |               |
|  | Function 3   |   | Frame Creation OFF                   |                             | Function 13  |               |
|  | Dynamic Contrast USER  |   | Function 9                           |                             | Function 14  |               |
| -1   | Dynamic Contrast OFF   |   | Function 10                          |                             | Function 15  |               |
|  | Script   |   | Script 3                             |                             | Script 5   | Edit          |
|  | HDR to SDR   |   | Script 4                             |                             | Script 6   |               |
|  | Command Log  |   |                                      |                             |  | Clear         |
|  | Time (Local)<br>2022-11-18 13:33:33.493<br>2022-11-18 13:33:34.514<br>2022-11-18 13:33:36.494<br>2022-11-18 13:51:25.083 | Destination<br>NAME4311<br>NAME4311<br>NAME4311<br>PROJECTOR3 | Send<br>OSH:<br>OSH:<br>OAI:<br>VXX: | 1<br>0<br>4<br>FRCI1=+00003 | Receive<br>OSH:1<br>OSH:0<br>OAI:4<br>VXX:FRCI1=+00003 |               |
|  | 2022-11-18 13:51:25.083<br>2022-11-18 14:00:04.744   | PROJECTOR4<br>NAME6534  | VXX:<br>VXX:                         | RCI1=+00003<br>GMMI0=+00000 | VXX:FRCI1=+00003<br>VXX:GMMI0=+00000                   |               |
|  |  |   |                                      |                             | Europet  | Class         |

# 1 Projector list

Displays a list of the numbers, projector names, IP addresses, and model numbers of the connected projectors. The selected projector is the target for sending the command. The control command send target can be switched by selecting a projector in the list.

## Note

• Multiple projectors can be selected by holding down the Ctrl key while clicking.

#### (2) Command input

Enter the control command to send.

# **③** Send command

Send the entered control command to the selected projector.

# (4) Edit registered commands

Up to 15 frequently used commands can be registered. Clicking opens the Edit screen.

Only a button with a command registered can be clicked.

The text to display on the button can also be edited in the Edit screen. If the text to display on the button is not edited, the default text ("Function\*" where \* is the number of the button) is displayed.

## (5) Send registered commands

Sends the registered commands to the selected projector.

## Adjustment and Settings

# 6 Edit registered scripts

Up to 6 scripts of multiple consecutive commands (script) can be registered. Clicking opens the Edit screen for registered scripts.

Only a button with a script registered can be clicked.

The text to display on the button can be edited in the Edit screen for registered scripts. If the text to display on the button is not edited, the default text ("Script\*":\* where \* is the number of the button) is displayed.

# ⑦ Send registered scripts

Sends the registered scripts to the selected projector.

# 8 Command Log

Displays the communication log for sent commands. This displays four information items: send time, send destination projector name, sent command, and response to sent command. Each information item can be sorted in ascending and descending order. The maximum number of logs that can be displayed is 2,048.

# (9) Clear command log

Clear the information displayed in the command log.

# 1 Import

Reads control command data from a file.

## (1) Export

Saves control command data to a file.

## (12) Close

Close this screen. The command log is also cleared when the screen is closed.

## **Edit screen**

| 🥶 Edit      |                            |                          |              |
|-------------|----------------------------|--------------------------|--------------|
| Function 1  | Tite<br>Frame Creation OFF | Command VXX:FRCI1=+00000 | Clear        |
| Function 2  | Frame Creation MAX         | VXX:FRCI1=+00003         | Clear        |
| Function 3  |                            |                          | Clear        |
| Function 4  | Dynamic Contrast OFF       | OAI:0                    | Clear        |
| Function 5  | Dynamic Contrast USER      | OAI:4                    | Clear        |
| Function 6  |                            |                          | Clear        |
| Function 7  |                            |                          | Clear        |
| Function 8  |                            |                          | Clear        |
| Function 9  |                            |                          | Clear        |
| Function 10 |                            |                          | Clear        |
| Function 11 |                            |                          | Clear        |
| Function 12 |                            |                          | Clear        |
| Function 13 |                            |                          | Clear        |
| Function 14 |                            |                          | Clear        |
| Function 15 |                            |                          | Clear        |
|             |                            |                          | Confirm Cano |

# 1 Title

Enter the text to display on the registered command send buttons in the Command Control screen. The text can consist of a maximum of 32 characters including letters, numbers, and symbols.

# 2 Command

Enter the control commands to register.

# 3 Clear

Clear both the registered command name and registered command.

# (4) Confirm

Confirm the current editing information.

# 5 Cancel

Discard the current editing information. A screen appears to confirm whether or not discarding the information is a problem.

## **Projector Control**

# Edit screen for registered scripts

|   |               |   | 1 | 3     |           |              |        |
|---|---------------|---|---|-------|-----------|--------------|--------|
|   | 🥶 Edit        |   |   |       |           |              | ×      |
|   | Script 1      |   |   | Clear | Script 4  |              | Clear  |
|   | Title         | SDR to HDR                                      |   | J     | Title     |              |        |
| 0 | Commands      | VXX:LOPI2=+01000<br>VGA:US1<br>VXX:CSPI1=+00003 |   |       | Commands  |              |        |
|   |               |   |   |       |           |              |        |
|   | Script 2      |   |   | Clear | Script 5  | ,            | Clear  |
|   | Title         | HDR to SDR                                      |   | Cicui | Title     |              | cicai  |
|   | Commanda      | VXX+LOPI2=+00500                                |   |       | Commando  |              |        |
|   | Communication | VGA:2.2<br>VXX:CSPI1=+00001                     |   |       | Common no |              |        |
|   |               |   |   |       |           |              |        |
|   | Script 3      |   |   | Clear | Script 6  |              | Clear  |
|   | Title         |   |   |       | Title     |              |        |
|   | Commands      |   |   |       | Commands  |              |        |
|   |               |   |   |       |           | Confirm      | Cancel |
|   |               |   |   |       |           | ( <b>4</b> ) | (5)    |

# 1 Title

Enter the text to display on the registered script send buttons in the Command Control screen. The text can consist of a maximum of 32 characters including letters, numbers, and symbols.

# 2 Commands

Enter the script to register.

Up to 10 lines (10 commands) can be entered. A blank line is also counted as a line.

The next command is sent as soon as the response for the previous command is received, but if you need to specify an interval to wait until sending the command, enter it as "wait(\*\*\*\*)" (where \*\*\*\* is an integer from 0001 to 9999, and the unit is milliseconds). This is also counted as a line.

# Note

There is an offset of 10 to 15 seconds for an interval specified with "wait".

# 3 Clear

Clear both the registered script name and registered script.

# (4) Confirm

Confirm the current editing information.

## **5** Cancel

Discard the current editing information. A screen appears to confirm whether or not discarding the information is a problem.

# Auto Screen Adjustment

Applying the ET-CUK10 Auto Screen Adjustment upgrade kit to the projector or applying the ET-CUK10P Auto Screen Adjustment upgrade kit (PC) to the computer expands the functions of Geometry Manager Pro, and allows automatic adjustment of geometry correction, edge blending, color and brightness correction, adjustment of white balance, and adjustment of black level according to the shape of the screen through use of an externally connected camera. After performing Auto Screen Adjustment, you can perform further detailed adjustment and correction manually.

## Note

• The Auto Screen Adjustment upgrade kit is required to enable the Auto Screen Adjustment function.

The Auto Screen Adjustment function will be enabled for some projectors without applying the ET-CUK10 Auto Screen Adjustment upgrade kit to the projector.

| Product Number | Product Name                               | Description  |
|----------------|--|--|
| ET-CUK10       | Auto Screen Adjustment<br>Upgrade Kit      | Activating on each projector enables the "Auto Screen Adjustment plug-in software" functions.                                |
| ET-CUK10P      | Auto Screen Adjustment<br>Upgrade Kit (PC) | Activating on a computer on which the software is installed enables the "Auto Screen Adjustment plug-in software" functions. |

(Page 12) \*\*\*

- You can check whether the "Auto Screen Adjustment plug-in software" is installed and the activation status of the Auto Screen Adjustment upgrade kit (PC) in [About Geometry...] of the Version submenu.
- To use the Auto Screen Adjustment function, prepare a camera separately.
- This may be disabled depending on the model.

# **Preparing Auto Screen Adjustment**

# Projector connection

Use a LAN cable to connect the projector to the computer.

# Camera connection

Use a USB cable to connect the camera to the computer.

For details on compatible cameras, check the information found on the software download page after logging in to PASS on the following website.

https://docs.connect.panasonic.com/projector/pass

# ■ Connection example



## Note

- Positioning the camera so that it faces the screen directly and performing adjustments will obtain more optimal adjustment results. Adjustment is possible when the camera is facing the screen at an angle, but adjustment may fail or distortion may remain in images after adjustment if the angle is too large.
- In cases such as the following, adjustment is possible using multiple cameras (up to 6).
- Projector layout configuration has 5 or more projectors in the vertical or horizontal direction.
- When the entire screen does not fit in the capture range of 1 camera.

# **Compatible screens for Auto Screen Adjustment**

Auto Screen Adjustment may not be performed properly depending on the shape of the screen. If adjustment is not performed properly, perform adjustments manually.



# **Operation flow for Auto Screen Adjustment**

Settings for Auto Screen Adjustment are configured in a wizard format.



# Auto Screen Adjustment procedure

# Starting Auto Screen Adjustment and selecting the adjustment item

# Click the [AUTO ADJUST] button in the main screen.

|                                     |           | - |        | Х     |
|-------------------------------------|-----------|---|--------|-------|
|                                     |           | 0 | AUTO A | DJUST |
| ol Color Matching Masking Input Sig | nal Other |   |        |       |

• If you click the [AUTO ADJUST] button while the combination of the versions of "Geometric & Setup Management Software" and "Auto Screen Adjustment plug-in software" is inappropriate, an error message will appear. Obtain "Auto Screen Adjustment plug-in software" displayed in the error message from the PASS website, install it, and then try again.

# **2** Click the items you want to adjust.

| Auto Screen Adjustment               |                       |
|--------------------------------------|-----------------------|
|                                      |                       |
|                                      |                       |
| Click the button you want to adjust. |                       |
|                                      |                       |
| Geometry Ede Blendine Colyr Matchine | <b>Q</b><br>Re-adjust |
|                                      |                       |
| Geometry                             | Re-adjust             |
|                                      |                       |
| Color Matchine                       | Re-adjust             |
|                                      |                       |
| White Balance                        | Re-adjust             |
|                                      |                       |
|                                      | Prending              |
| Black Level                          | neraujust             |

Adjustment items selection screen

- You can select from following five options
  - [Geometry, Edge Blending, Color Matching]
  - [Geometry, Edge Blending]
  - [Color Matching]
  - [White Balance]
  - [Black Level]

By clicking the [Re-adjust] button to the right of each option, adjustment can be made by using the setting that it had previously.

- @ "Readjust by recalling previous settings" (page 119)
- The subsequent steps and screens that appear in the procedure will vary depending on the selected items.

## Auto Screen Adjustment

## Note

- Make sure the projector is turned on before starting Auto Screen Adjustment. Proper correction will not be possible if the projector is in the standby state.
- When performing automatic screen color, brightness, white balance, and black level correction, do so in an environment where the impact from external lighting will be low.
- While setting Auto Screen Adjustment, a progress indicator will appear at the top right of each screen, allowing you to check which step you are currently performing.

|                       | Progress indicator |                  |                |                    |                |   |
|-----------------------|--------------------|------------------|----------------|--------------------|----------------|---|
| Auto Screen Adjustmer | nt                 |                  |                |                    |                | × |
|                       | Camera Select      | Projector Layout | Camera Setting | Projection Setting | Screen Setting |   |

# Readjust by recalling previous settings

Click the [Re-adjust] button to automatically perform Auto Screen Adjustment using the settings that it had previously.

| Auto Screen Adjustment                 | ×         |
|--|-----------|
| (the first before you used to selling) |           |
| Cick the backet you want to bajast.    |           |
| Geometry Edge Blending Color Matching  | Re-adjust |
| Geometry Edee Blending                 | Re-adjust |
| Color Matching                         | Re-adjust |
| White Balance                          | Re-adjust |
| Black Level                            | Re-adjust |

## Note

- If an option does not have a previous setting, the [Re-adjust] button for that option is disabled.
- If readjustment fails, Auto Screen Adjustment is canceled. In this case, you can continue making adjustments using the usual manual procedure from the point at which adjustment was interrupted.
- To cancel Auto Screen Adjustment in progress, click [Abort]. In this case, you can continue making adjustments manually from the point at which adjustment was interrupted.

# **Camera Select (Camera selection)**

| Auto Screen Adjustment                  |                            |                         |                    |                |
|---|----------------------------|-------------------------|--------------------|----------------|
| Camera Sele                             | Projector Layou            | t Camera Setting        | Projection Setting | Screen Setting |
| Click Search Camera and select the came | era to use.                |                         |                    |                |
| Camera Search                           | ID<br>Camera 1<br>Camera 2 | Model<br>D5300<br>D5300 |                    |                |
| If failed to search camera, r           | lease check the following. | Select All              | Clear All          |                |
| - Is the camera connected               | correctly?                 |                         |                    |                |
| Click Next to continue.                 |                            |                         |                    |                |
|   |                            |                         |                    |                |
|   |                            |                         |                    | Back Next      |

# **1** Verify camera connection in the camera connection screen.

1) Click [Camera Search] button.

- The Camera Search screen opens.
- When the search results are displayed, select the camera to use for adjustment from those results.
- If a camera is not displayed in the list, check the following.
  - The camera is properly connected.
  - The camera is turned on.
- Verify that the check boxes of the cameras to be used are selected.
- You can select all the cameras by clicking the [Select All] button, or clear selection of all the cameras by clicking the [Clear All] button.

2) Click [Next].

• To return to the previous screen, click [Back].

# **Projector Layout**



**1** Specify the projector configuration in the projector layout setting screen.

#### Projector layout setting screen

- 1) When you click the [Restore] button and layout information from previously configured projectors exists, the layout information is loaded and applied to the layout information display area.
- 2) Enter the height, width, and stack layout for the projectors in the [Height / Width / Stack] fields.
  - Up to 99 projectors can be configured.
    - In the case of 1 camera, adjustment can be performed for up to 4 vertically, up to 4 horizontally, and up to 6 stacked.
    - 5 or more projectors can be configured either vertically or horizontally by using multiple cameras.

| The relationship betwee | n the number of projectors | and the number of | cameras is as follows. |
|-------------------------|----------------------------|-------------------|------------------------|
|-------------------------|----------------------------|-------------------|------------------------|

| Number of projectors | 1 to 4 | 3 to 7 | 4 to 10 | 5 to 13 | 6 to 16 | 7 to 19 |
|----------------------|--------|--------|---------|---------|---------|---------|
| Number of cameras    | 1      | 2      | 3       | 4       | 5       | 6       |

- 360-degree curved screens require 5 or more projectors in the vertical or horizontal direction and 3 or more cameras.

| Number of projectors | 5 to 9 | 5 to 12 | 5 to 15 | 6 to 18 |
|----------------------|--------|---------|---------|---------|
| Number of cameras    | 3      | 4       | 5       | 6       |

Note

- You cannot configure a layout that includes more projectors than the total number of connected projectors.
- If [Geometry, Edge Blending, Color Matching], [Color Matching], [White Balance], or [Black Level] was selected in the adjustment items selection screen, configure the layout so that either height (vertical) or width (horizontal) is more than one projector.
- 3) Click [Next].
  - To return to the previous screen, click [Back].

### 2 Select the projectors for which to perform correction in the projector selection screen.



**Projector selection screen** 

- 1) Select the check boxes of the projectors for which you want to perform correction in the connected projectors list.
  - You can select all the projectors by clicking the [Select All] button, or clear selection of all the projectors by clicking the [Clear All] button.
  - If you clicked the [Restore] button in step 1 to load previous layout information, the check boxes for the configured projectors will be selected.

#### Note

• If \* is displayed on the left of a projector name, you cannot select that projector for auto screen adjustment. Apply the Auto Screen Adjustment upgrade kit (ET-CUK10) to the projectors or apply the Auto Screen Adjustment upgrade kit (PC) (ET-CUK10P) to the computer.

@ "Activation" (page 12)

- 2) Click [Next].
  - To return to the previous screen, click [Back].
  - When [Color Matching] and [White Balance] are selected, a warning message will appear if projectors of different models coexist. Click [Next] to continue the process, or click [Cancel] to reselect projectors.
  - An error message will appear in the following cases.
    - In such cases, click [OK] and select the projectors again.
    - Projectors with different resolutions coexist when [Geometry, Edge Blending, Color Matching], [Geometry, Edge Blending] or [Black Level] is selected.
    - When a projector that can perform black level adjustment only for the entire display panel area is selected while [Black Level] is selected.
    - The number of selected projectors does not match the number of projectors configured in the projector layout setting screen in step 1.
    - When the Auto Screen Adjustment upgrade kit (ET-CUK10/ET-CUK10P) is not applied to either the selected projectors or computer.
    - When a DLP projector and LCD projector coexist.

## Note

When you click [Next], the geometry correction, edge blending, color/brightness correction, and white balance adjustment of the projectors will be initialized.



# **3** Confirm projector positioning in the projector positioning screen.

Projector positioning screen

- 1) Click the layout window to position the projectors.
  - Configure the projectors in order, starting with the first projector in the list of selected projectors. Each number will be projected on the screen. Position the projectors in the layout window so that their numbers match the projected numbers.
  - Click the [Identify] button to verify the actual projector positions on the projection screen. Each projector will project their numbers on the screen when you click the [Identify] button.
  - You can cancel the positioning of the projector currently being configured by clicking the [Undo] button, or cancel
    positioning for all projectors by clicking the [Reset] button.
- 2) Click [Next].
  - To save the projector positioning information, click [Next].
  - To return to the previous screen, click [Back].
  - An error message will appear if positioning of all the projectors is not complete. Configure settings again.
  - If other than [Black Level] is selected, go to the camera connection screen.
  - ☞ "Camera Setting" (page 125)

# **4** Select the storage location of the current geometry correction data in the geometry correction data storage location confirmation screen.

|                                    | Came               | ra Select         | Projector Layout            | Camera Setting           | Projection Setting       | Screen Setting            |
|------------------------------------|--------------------|-------------------|-----------------------------|--------------------------|--------------------------|---------------------------|
| Because Geometr<br>all projectors. | y setting is need  | l to set to OFF t | emporarily, please select t | he storage location of G | eometry adjustment data. | The location is common to |
| If you do not nee                  | d to store it, ple | ase select "No n  | eed to store".              |                          |                          |                           |
| October y aujus                    |                    |                   | ON black Level adjustment   | can not be guaranteeu.   |                          |                           |
| ● PC-1                             | OPC-2              | OPC-3             | O No need to store          |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
| Click Next 1                       | o continue.        |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |
|                                    |                    |                   |                             |                          |                          |                           |

- The current geometry correction data needs to be stored inside the projector so select that storage location from [PC-1] to [PC-3]. If the data is already stored, select [No need to store].
  - The storage location is common for all projectors that are target for Auto Screen Adjustment.
  - If the current geometry correction data is not stored, that data will be discarded during the process. The result of black level adjustment will not be able to be guaranteed.
- 2) Click [Next].
  - To return to the previous screen, click [Back].
  - When [Next] is clicked, the current geometry correction data is saved to the storage location.
  - If [Geometry, Edge Blending, Color Matching] or [Geometry, Edge Blending] is selected and the layout is configured so that either height (vertical) or width (horizontal) is more than one projector in the projector layout screen, the black level adjustment selection screen opens.

| Auto Screen Adjustment   |  |                  |                |                    |                | × |
|--|--|------------------|----------------|--------------------|----------------|---|
|  | Camera Select                                  | Projector Layout | Camera Setting | Projection Setting | Screen Setting |   |
|  |  |                  |                |                    |                |   |
| Black Level Setting  |  |                  |                |                    |                |   |
| <ul> <li>Set temporary values.</li> <li>Use current settings.</li> </ul> |  |                  |                |                    |                |   |
| <ul> <li>Adjust using the camer</li> </ul>                               | <ul> <li>a. (Dark environment is ne</li> </ul> | cessary.)        |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                |                    |                |   |
|  |  |                  |                | Ba                 | dk Next        |   |

Select the process for the black level of the area to be overlapped.

- [Set temporary value]: Overwrite the black level value with the temporary value of the corresponding models.
- [Use current settings]: Retain the current (pre-adjustment) black level value.
- [Adjust using the camera]: Adjust the black level using the camera.

# Note

When a projector that can perform black level adjustment only for the entire display panel area is selected, [Adjust using the camera] cannot be selected.

- When there are 2 or more cameras, goes to "1 Camera layout screen."
- When there is one camera, goes to "2 Camera setting screen."

## **Camera Setting**

**1** Decide the layout (arrangement) of the cameras while checking the captured images in the camera layout screen. Perform this work when using 2 or more cameras.



#### Camera layout screen

- 1) Set the camera layout.
  - [Horizontal / Vertical]: Camera placement direction (horizontal/vertical)
  - [360 degree screen]: Select this check box when 360-degree screen
- 2) Select the cameras and set the target ranges.
  - The target range of the selected camera is indicated by an orange frame in the camera layout window.
- 3) Capture a test shot with the camera.
  - When you click the [Test Shot] button, a test shot is captured with the selected camera and the captured image appears in the captured image display window.
  - Verify that the target range fits within the captured image.
     If it does not fit, check the actual position of the camera, the selection status of the camera, and the target range setting.
  - When you click the [View larger image] button, the content of the captured image display window is displayed enlarged in another window. If you resize that window, the image is also resized while maintaining the aspect ratio.
- 4) Click [Next].

#### Note

- The layout settings of the camera may not be able to be changed depending on the conditions.
- One projector's worth of overlap is required for images captured with cameras that are side by side.
- The layout settings of the camera can also be configured while checking the live view images. Click [Live View] and configure the settings in live view.

P "Live View" (page 147)

## **2** Configure the camera you will use in the camera setting screen.



#### Camera setting screen

- 1) Click the [Auto Setup] button.
  - A test pattern appears on the screen, and camera configuration starts automatically.
  - When using 2 or more cameras, configure the settings of all the cameras.
  - The setting values configured in step 1) appear in the [White Balance / Shutter Speed / ISO / F-number] fields. You can select the [Manual Setup] check box to configure the setting values manually.
  - If [Black Level] is selected, next also set the camera for black level adjustment.

## 2) Capture a test shot.

- A test shot is captured when you click the [Test Shot] button, and the captured image appears in the image display window. Verify that the entire screen fits within the image display window.
- When you click the [View larger image] button, the content of the captured image display window is displayed enlarged in another window. If you resize that window, the captured image is also resized while maintaining the aspect ratio.

## Note

- To obtain the optimal adjustment results, make adjustments so that the target area of the screen fills as much of the captured image display window as possible.
- Adjustment may fail if the target area of the screen does not fit properly within the captured image display window.
- An error message appears if camera configuration fails. In such cases, check the content of the message, click [OK], and configure settings again.
- If the screen is too bright or there is a strong light present, overexposure may occur and adjustment may fail.
- 3) Click [Next].
  - To return to the previous screen, click [Back].

# **Projection Setting**

Adjust the option selected in "Starting Auto Screen Adjustment and selecting the adjustment item" (page 118). Perform the operations by referring to their explanations on the following pages.

- When [Geometry, Edge Blending, Color Matching] or [Geometry, Edge Blending] is selected
   "Geometry and Edge Blending Adjustments" (page 127)
- When "Color Matching" is selected
   "Color Matching Adjustments" (page 129)
- When "White Balance" is selected
   "White Balance Adjustments" (page 133)
- When "Black Leve" is selected
   "Black Level Adjustments" (page 136)

# Geometry and Edge Blending Adjustments

**1** Confirm the changes to the projector settings and select a coordinate detection pattern in the setting initialization confirmation screen.

| Q Auto Screen Adjustment X  | O Auto Screen Adjustment X   |
|---|--|
| Camera Select Projector Layout Camera Setting Projecton Setting Screen Setting  | Camera Setect Projector Layout Camera Setting Projector Setting Soreen Setting   |
| NOTICE: Geometry + Edge Blending adjustment will begin soon.  | NOTICE: Geometry + Edge Blending adjustment will begin soon.   |
| - Do not operate the projectors other than this application while the auto adjustment is working.                     | - Do not operate the projectors other than this application while the auto adjustment is working.  |
| - The following projector settings will be set in advance.  | - The following projector settings will be set in advance.   |
| Peterse Gamma = 2.2<br>"Depending on the projector model, setting and input signal, this setting may not be possible. | Retare Gamma = 2.2     "Depending on the projector model, acting radiu digmal, this acting may not be possible.     Puture Dynamic Contrast = OFF     Multi Projector Sync. Model / Frame Sync. = OFF     - A dark environment is necessary while the auto adjustment is working. Please do not change the birghtness of the surroundings. |
| - Select the detection pattern.   | - Select the detection pattern.  |
| When using silver screens, it is recommended to select monochrome.  | When using silver screens, it is recommended to select monochrome.   |
| Cder v  | Calor v  |
| Click/Hext to continue.   | Click Next to continue.  |
| Sotting initialization confirmation coreon  | Sotting initialization confirmation correspond   |

Setting initialization confirmation screen (geometry correction and edge blending: when black level correction not performed) Setting initialization confirmation screen (geometry correction and edge blending: when black level correction performed)

- 1) Confirm the changes to the projector settings
  - The projector settings will change to those displayed on this screen. For the setting with a check box, adjustment can be made without changing that setting by clearing the check box.
- 2) Set a coordinate detection pattern.
  - Select the detection pattern that matches the screen characteristics or camera layout. [Color]: Pattern recommended for a diffusion type white matte screen.
    - [Monochrome]: Pattern recommended when using a screen with a narrow viewing angle such as a silver screen or when the camera cannot be placed in front of the screen.

Note

Some models do not support [Monochrome]. [Monochrome] can be selected only when it is supported by all of the selected projectors.

• Click [Back] to return to the previous screen.

# 2 Click [Next].

When you click [Next], a progress bar appears. The detection pattern is projected and captured, and the projector coordinates required for auto screen adjustment are detected.

|                         | Camera Select               | Projector Layout | Camera Setting | Projection Setting | Screen Setting |
|-------------------------|-----------------------------|------------------|----------------|--------------------|----------------|
|                         |                             |                  |                |                    |                |
| Please wait while the p | attern detection is in prop | press.           |                |                    |                |
| It may take several min | utes.                       |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
| 5 % processing.         |                             |                  |                | 21 sec elapsed.    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |
|                         |                             |                  |                |                    |                |

To cancel coordinate detection, click [Abort].
 Click [OK] when the following screen appears.

| Auto Screen Adjustment   | t              | $\times$ |
|--------------------------|----------------|----------|
| Do you want to interrupt | auto adjustmen | t?       |
|                          | ОК             | Cancel   |

**3** Check the detection result for the coordinates of each projector captured with each of the cameras in the coordinate detection result display screen.

| he detection | results and proceed to<br>is needed again, click "E | the next.<br>lack to Camera Setting". |                               |                    |   |
|--------------|---|---------------------------------------|-------------------------------|--------------------|---|
|              |   |                                       |                               |                    |   |
| Camera       | Projector   |                                       | Result                        | Detection Rate     | ^ |
| 1            | 1 PROJECTOR 1                                       | 192, 168, 0, 8                        | OK                            | 95%                |   |
| i.           | 2 PROJECTOR3  | 192, 168, 0, 10                       | OK                            | 99%                |   |
| i            | 5 PROJECTOR2  | 192, 168, 0, 9                        | OK                            | 100%               |   |
| 1            | 6 PROJECTOR4  | 192, 168.0, 11                        | OK                            | 100%               |   |
| 2            | 2 PROJECTOR3  | 192.168.0.10                          | OK                            | 100%               |   |
| 2            | 3 PROJECTOR5  | 192.168.0.12                          | OK                            | 92%                |   |
| 2            | 6 PROJECTOR4  | 192.168.0.11                          | OK                            | 91%                |   |
| 2            | 7 PROJECTOR6  | 192.168.0.13                          | OK                            | 87%                |   |
| 3            | 3 PROJECTOR5  | 192.168.0.12                          | OK                            | 98%                |   |
| 3            | 4 PROJECTOR7  | 192.168.0.14                          | OK                            | 92%                |   |
| 3            | 7 PROJECTOR6  | 192.168.0.13                          | OK                            | 90%                |   |
| 3            | 8 PROJECTOR8  | 192.168.0.15                          | OK                            | 85%                | ~ |
|              |   |                                       |                               |                    |   |
|              |   |                                       |                               |                    |   |
| If           | the detection result is N                           | G, click "Back to Camera Se           | etting" to check if the camer | a is capturing the |   |
| if           | camera placement and s                              | ettings are already optima            | I, try the other detection p  | attern.            |   |
|              |   |                                       |                               |                    |   |
|              |   |                                       |                               |                    |   |
|              |   |                                       |                               |                    |   |
|              |   |                                       |                               |                    |   |
|              |   |                                       |                               |                    |   |
|              |   |                                       |                               |                    |   |

Coordinate detection result display screen

Check that the coordinate detection results ("Result" column) of the projectors are all "OK", and then click [Next].

• If the coordinate detection rate is too low (below approximately 30%), the detection result will be "NG." If there is even one line with "NG", you cannot go to the next step. Click [Back to Camera Setting] to return to the camera setting screen, revise the camera settings and layout, and then run detection again.

Even if a result is "OK", auto screen adjustment is extremely likely to fail if the coordinate detection rate is 40% or lower. Click [Back to Camera Setting] to return to the camera setting screen, revise the camera settings and layout, and then run detection again.

# Color Matching Adjustments

# **1** When the following confirmation screen appears, check the content displayed and click [Next].

When you click [Next], the projector settings will change to those displayed on this screen. For the setting with a check box, adjustment can be made without changing that setting by clearing the check box.

• To return to the previous screen, click [Back].

| Auto Scr             | een Adjustment  |   |                  |                             |                    |                | ×    |
|----------------------|---|---|------------------|-----------------------------|--------------------|----------------|------|
|                      | Camera Se   | lect Projec                               | tor Layout       | Camera Setting              | Projection Setting | Screen Setting |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
| NOTICE:              | Color Matching adjustment wi                                      | l begin soon.                             |                  |                             |                    |                |      |
| - Do not             | operate the projectors other                                      | than this application                     | while the auto   | adjustment is working.      |                    |                |      |
| - The fol<br>You car | lowing projector settings will t<br>n change these settings after | e set in advance.<br>auto adjustment fini | shed.            |                             |                    |                |      |
|                      | Picture Dynamic Iris / Dyna                                       | mic Contrast                              | = OFF            |                             |                    |                |      |
|                      | AI  |   | = OFF            |                             |                    |                |      |
|                      | Brightness Control  |   | = OFF            |                             |                    |                |      |
|                      | Brightness Control Gair   | 1   | = 100%           |                             |                    |                |      |
|                      | Light Output  |   | = Max Light      | Output Level                |                    |                |      |
|                      | White Balance High [Red,  | Green, Blue]                              | = 255            |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
| - Before             | starting auto adjustment, ple                                     | ase confirm the follo                     | wing settings ar | e adjusted for all projecto | rs.                |                |      |
|                      | Picture Mode  | Tint                                      |                  |                             |                    |                |      |
|                      | Contrast  | Gamma                                     |                  |                             |                    |                |      |
|                      | Brightness  | White Gain                                |                  |                             |                    |                |      |
|                      | Color   | System Daylight                           | t View           |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
| Clic                 | k Next to continue.   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             |                    |                |      |
|                      |   |   |                  |                             | _                  |                |      |
|                      |   |   |                  |                             |                    | Back           | Vext |
|                      |   |   |                  |                             |                    |                |      |

Setting initialization confirmation screen (color and brightness adjustment)

1) When adjusting color, use the [Auto] option to optimize adjustment for the screen overall, or the [Target Setting] option when configuring a target (standard) projector.

| Auto Screen Adjustment      |                          |                          |                |                    |                | × |
|-----------------------------|--------------------------|--------------------------|----------------|--------------------|----------------|---|
|                             | Camera Select            | Projector Layout         | Camera Setting | Projection Setting | Screen Setting |   |
| Select the Color Matching a | etting mode.             |                          |                |                    |                |   |
| O Target setting            | ( * Target setting mod   | e cannot be selected whe | n stadving.)   |                    | Restore        |   |
|                             |                          |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                |   |
| Click Start to begin C      | olor Matching adjustment |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                |   |
|                             |                          |                          |                |                    |                | _ |
|                             |                          |                          |                |                    | Back Star      | t |

- 2) If you select the [Target Setting] option, also select the projector that is to be the target.
  - When you click the target projector number, the number and its frame change to red.
  - Click the [Restore] button to restore the last previously set configuration.
  - Click the [Identify] button to verify the actual projector positions on the projection screen. Each projector will project their numbers on the screen when you click the [Identify] button.



# 2 Click [Start].

The projector positioning information is saved.

A progress bar appears, and Auto Screen Adjustment for color and brightness adjustment starts.

| Auto Screen Adjustment                                   |   |                  |                |                    | ×              |
|--|---|------------------|----------------|--------------------|----------------|
|  | Camera Select   | Projector Layout | Camera Setting | Projection Setting | Screen Setting |
| Please wait while the auto<br>Do not interfere with shoo | adjustment is in progress<br>ting while camera is working | 19.              |                |                    |                |
| n may take several minute                                | a.  |                  |                |                    |                |
|  |   |                  |                |                    |                |
|  |   |                  |                |                    |                |
| 10 % [1/7] proc  | essing.   |                  |                | 87 sec elapsed.    |                |
|  |   |                  |                |                    |                |
|  |   |                  |                |                    |                |
|  |   |                  |                |                    |                |
|  |   |                  |                |                    |                |
|  |   |                  |                |                    |                |
|  |   |                  |                |                    |                |
|  |   |                  |                |                    |                |
|  |   |                  |                |                    | Abort          |
|  |   |                  |                |                    |                |

To cancel Auto Screen Adjustment, click [Abort].
 In such cases, click [OK] when the following screen appears.

| Auto Screen Adjustment                    | × |
|---|---|
| Do you want to interrupt auto adjustment? |   |
| OK Cancel                                 | ] |

# **3** A message indicating that Auto Screen Adjustment is complete appears.

## Click [OK].

If [Geometry, Edge Blending, Color Matching] was selected in "Starting Auto Screen Adjustment and selecting the adjustment item" (page 118) and [Adjust using the camera] was selected in the black level adjustment screen (page 124), go to the procedure of "
Black Level Adjustments" (page 136)".

In the case of other than the above, auto screen adjustment is finished.

• To restore the conditions from before adjustment, select [Before Adjustment]. If you select [After Adjustment] after selecting [Before Adjustment], the displays are returned to the conditions from after Auto Screen Adjustment completion.

• The following message appears if Auto Screen Adjustment could not be completed and must be performed again. To perform Auto Screen Adjustment for color and brightness correction again, click [Continue]. To exit Auto Screen Adjustment, click [Finish].

| Auto Screen Adjustment 🛛 🕹   | ]  |
|--|----|
| The following adjustment could not yet complete in this condition. |    |
| You can check each color on the screen.                            |    |
| Select Color White V   | _2 |
| Continue Finish  |    |

① Colors for which Auto Screen Adjustment was not completed are displayed here.

(2) Here you can confirm the adjustment results for the selected color on screen.

- A message appears if Auto Screen Adjustment fails due to overexposure.
   If the screen is too bright or there is a strong light present, overexposure may occur. In such cases, click [OK] and configure settings again.
- If Auto Screen Adjustment for color and brightness adjustment is performed again and fails to complete, a message will appear. Click [OK] to exit Auto Screen Adjustment.

In such cases, perform adjustment manually in the main screen of "Geometry Manager Pro".

@" "Adjustment and Settings - Color Matching / Color Adjustment" (page 89)

Note

• When you click the 🛛 button at the top right of the screen, a confirmation screen for canceling Auto Screen Adjustment appears.

To exit Auto Screen Adjustment, click [OK]. To return to the previous screen, click [Cancel].



- The projector layout and cursor layout information configured during Auto Screen Adjustment is stored until the next time you configure the settings.
- To perform detailed adjustment after using Auto Screen Adjustment, perform adjustments manually in the main screen of "Geometry Manager Pro".
  - (P "Adjustment and Settings Brightness Control" (page 86)
  - @ "Adjustment and Settings Color Matching / Color Adjustment" (page 89)

# White Balance Adjustments

# **1** When the following confirmation screen appears, check the content displayed and click [Next].

When you click [Next], the projector settings will change to those displayed on this screen. For the setting with a check box, adjustment can be made without changing that setting by clearing the check box.

• To return to the previous screen, click [Back].

| Auto Screen Auto                | djustment   |  |                                |                    | ×              |
|---------------------------------|---|--|--------------------------------|--------------------|----------------|
|                                 | Camera Select   | Projector Layout                           | Camera Setting                 | Projection Setting | Screen Setting |
| NOTICE: White                   | Balance adjustment will be                                  | jin soon.                                  |                                |                    |                |
| - Do not opera                  | te the projectors other tha                                 | n this application while the au            | ito adjustment is working.     |                    |                |
| - The following<br>You can chan | projector settings will be s<br>ge these settings after aut | et in advance.<br>o adjustment finished.   |                                |                    |                |
| <b>V</b>                        | Picture Gamma   | = 2.2                                      |                                |                    |                |
|                                 | Depending on the projecto                                   | r model, setting and input sig             | nal, this setting may not be p | possible.          |                |
| Dyr                             | amic Iris / Dynamic Contra                                  | st = OFF                                   |                                |                    |                |
| AI                              |   | = OFF                                      |                                |                    |                |
| Brig                            | htness Control  | = OFF                                      |                                |                    |                |
| 2                               | Brightness Control Gain                                     | = 100%                                     |                                |                    |                |
| <b>v</b>                        | Light Output  | = Max Lig                                  | ht Output Level                |                    |                |
| Pict<br>Cor<br>Brig             | ure Mode<br>Itrast<br>htness                                | Tint<br>White Gain<br>System Daylight View |                                |                    |                |
| - If the input si               | gnal changed after auto a                                   | tjustment, White Balance se                | ting will be cleared.          |                    |                |
| Click Next                      | to continue.  |  |                                |                    |                |
|                                 |   |  |                                |                    |                |
|                                 |   |  |                                |                    |                |
|                                 |   |  |                                |                    | Back Next      |
|                                 |   |  |                                |                    |                |

Setting initialization confirmation screen (White Balance Adjustments)

1) When adjusting color, use the [Auto] option to optimize adjustment for the screen overall, or the [Target Setting] option when configuring a target (standard) projector.

| Auto Screen Adjustment                           | t                        |                           |                |                    |                | ×   |
|--|--------------------------|---------------------------|----------------|--------------------|----------------|-----|
|  | Camera Select            | Projector Layout          | Camera Setting | Projection Setting | Screen Setting |     |
| Select the White Balance s                       | etting mode.             |                           |                |                    |                |     |
| <ul> <li>Auto</li> <li>Target setting</li> </ul> | ( * Target setting mod   | le cannot be selected whe | n stadking.)   |                    |                |     |
|  |                          |                           |                |                    | Restore        |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
| Click Start to begin \                           | White Balance adjustment |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    |                |     |
|  |                          |                           |                |                    | Darth O        |     |
|  |                          |                           |                |                    | Daux           | art |

- 2) If you select the [Target Setting] option, also select the projector that is to be the target.
  - When you click the target projector number, the number and its frame change to red.
  - Click the [Restore] button to restore the last previously set configuration.
  - Click the [Identify] button to verify the actual projector positions on the projection screen. Each projector will project their numbers on the screen when you click the [Identify] button.



## Note

- White balance is adjusted by configuring the [Picture]-[Color Temperature]-[USER1]-[White Balance High] values.
- In order to manually pre-configure white balance for the target projector, change the [White Balance High] settings as described earlier.
- The results of white balance adjustment are saved to the projector for each input signal. When the input signal is changed, do the adjustment again.
- With some projectors that use single-chip DLP, the color matching setting is forcibly set to OFF when white balance is adjusted. Refer to the operating instructions of the projector.

# 2 Click [Start].

The projector positioning information is saved.

A progress bar appears, and Auto Screen Adjustment for white balance starts.

| Auto Screen Adjustment   |  |                  |                |                    | ×              |
|--|--|------------------|----------------|--------------------|----------------|
| Cameri   | a Select                                   | Projector Layout | Camera Setting | Projection Setting | Screen Setting |
| Please wait while the auto adjustm<br>Do not interfere with shooting while<br>It may take several minutes. | ent is in progress.<br>e camera is working | a.               |                |                    |                |
|  |  |                  |                |                    |                |
|  |  |                  |                |                    |                |
| 50 % [1/1] processing.   |  |                  |                | 61 sec elapsed.    |                |
|  |  |                  |                |                    |                |
|  |  |                  |                |                    |                |
|  |  |                  |                |                    |                |
|  |  |                  |                |                    |                |
|  |  |                  |                |                    |                |
|  |  |                  |                |                    |                |
|  |  |                  |                |                    |                |
|  |  |                  |                |                    | Abort          |

• To cancel Auto Screen Adjustment, click [Abort]. Click [OK] when the following screen appears.



**3** A message indicating that Auto Screen Adjustment is complete appears.

To exit Auto Screen Adjustment, click [OK].

• To restore the conditions from before adjustment, select [Before Adjustment]. If you select [After Adjustment] after selecting [Before Adjustment], the displays are returned to the conditions from after Auto Screen Adjustment completion.

| Auto Screen Adjustment                  |                    |  |  |  |  |  |  |  |
|---|--------------------|--|--|--|--|--|--|--|
| Adjustment completed.                   |                    |  |  |  |  |  |  |  |
| ОК                                      |                    |  |  |  |  |  |  |  |
| You can check each color on the screen. |                    |  |  |  |  |  |  |  |
| Select Color OFF ~                      |                    |  |  |  |  |  |  |  |
| After Adjustment                        | O Before Adjustmen |  |  |  |  |  |  |  |
|   |                    |  |  |  |  |  |  |  |

• The following message appears if Auto Screen Adjustment could not be completed and must be performed again. To perform Auto Screen Adjustment for white balance again, click [Continue]. To exit Auto Screen Adjustment, click [Finish].

| Auto Scre | een Adjustment $	imes$  |     |
|-----------|---|-----|
| <u> </u>  | The following adjustment could not yet complete in this condition.<br>White |     |
|           | You can check each color on the screen.                                     |     |
|           | Select Color White V  | -(1 |
|           | Do you want to continue to get better results?                              |     |
|           | Continue Finish   |     |

1 Here you can confirm the adjustment results for the selected color on screen.

- A message appears if Auto Screen Adjustment fails due to overexposure.
   If the screen is too bright or there is a strong light present, overexposure may occur. In such cases, click [OK] and configure settings again.
- If Auto Screen Adjustment of white balance is not completed a second time, a message is displayed. Click [OK] to complete Auto Screen Adjustment.

In this case, perform adjustments manually in the main screen of "Geometry Manager Pro".

(Page 103) \*\*\* "Adjustment and Settings - Picture" (page 103)

Note

1

• When you click the 🛛 button at the top right of the screen, a confirmation screen for canceling Auto Screen Adjustment appears.

To exit Auto Screen Adjustment, click [OK]. To return to the previous screen, click [Cancel].



• To perform detailed adjustment after using Auto Screen Adjustment, perform adjustments manually in the main screen of "Geometry Manager Pro".

(age "Adjustment and Settings - Input Signal Adjustments" (page 97)

# Black Level Adjustments

#### When the following confirmation screen appears, check the content displayed and click [Start].

When you click [Start], the projector settings will change to those displayed on this screen.

• To return to the previous screen, click [Back].

| Auto Screen Adjustmen                       | t                           |                             |                           |                           |                | ×   |
|---|-----------------------------|-----------------------------|---------------------------|---------------------------|----------------|-----|
|   | Camera Select               | Projector Layout            | Camera Setting            | Projection Setting        | Screen Setting |     |
|   |                             |                             |                           |                           |                |     |
| NOTICE, Black Land arts                     |                             |                             |                           |                           |                |     |
| NOTICE: black cever abjur                   | senent wil begin soon.      |                             |                           |                           |                |     |
| - Do not operate the pro                    | jectors other than this ap  | plication while the auto as | ljustment is working.     |                           |                |     |
| - The following projector                   | settings will be set in adv | rance.                      |                           |                           |                |     |
| Picture Dyna                                | mic Iris / Dynamic Contras  | it = OFF                    |                           |                           |                |     |
| Multi Projecto                              | or Sync. Mode / Frame Sy    | nc. = OFF                   |                           |                           |                |     |
| <ul> <li>A dark environment is r</li> </ul> | necessary while the auto    | adjustment is working. Ple  | ase do not change the bri | ghtness of the surroundin | gs.            |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
| Click start to                              | begin black Level adjustr   | ient.                       |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           |                           |                |     |
|   |                             |                             |                           | В                         | ack St         | art |
|   |                             |                             |                           |                           |                |     |

Setting initialization confirmation screen (black level adjustment)

## Auto Screen Adjustment

• A progress bar appears, and Auto Screen Adjustment for black level adjustment starts.

| Auto Screen Adjustment     |               |                  |                |                    |                | × |
|----------------------------|---------------|------------------|----------------|--------------------|----------------|---|
|                            | Camera Select | Projector Layout | Camera Setting | Projection Setting | Screen Setting |   |
| Running Warped Detect Grid |               |                  |                | 55 sec elapsed.    |                |   |
|                            |               |                  |                |                    |                |   |
|                            |               |                  |                |                    |                |   |
|                            |               |                  |                |                    | Abort          |   |

• To cancel Auto Screen Adjustment, click [Abort]. Click [OK] when the following screen appears.

| Auto Screen Adjustment X                  |  |
|---|--|
| Do you want to interrupt auto adjustment? |  |
| OK Cancel                                 |  |

 ${\bf 2}\,$  A message indicating that Auto Screen Adjustment is complete appears.

## Click [OK].

If [Geometry, Edge Blending] or [Black Level] was selected in "Starting Auto Screen Adjustment and selecting the adjustment item" (page 118), Auto Screen Adjustment is complete.

• To restore the conditions from before adjustment, select [Before Adjustment]. If you select [After Adjustment] after selecting [Before Adjustment], the displays are returned to the conditions from after Auto Screen Adjustment completion.

| Auto Screen Adjustment   |
|--|
| Adjustment completed.  |
| You can check each color on the screen.  |
| Select Color 📕 Black 🗸   |
| After Adjustment     O Before Adjustment   |
| Select Black Level Area  |
| Geometry Linked<br>*The adjusted black level is set only in the video display area.<br>Recommended when projecting within the frame of the screen.   |
| <ul> <li>Geometry Unlinked</li> <li>*The adjusted black level setting is set not only inside the video display area<br/>but also outside the area.</li> <li>Recommended when projecting on a wall without a screen frame.</li> </ul> |
| ОК   |

## Auto Screen Adjustment

• For a model that allows you to specify the area of black level adjustment, the correction area of black level adjustment is switched to allow you to check the adjustment result when you select [After Adjustment].

**[Geometry Linked]:** Switches to the state with black level adjustment performed only inside the video display area after geometry correction.

[Geometry Unlinked]: Switches to the state with black level adjustment performed in area also including outside the video display area.

The elevated blacks of overlapping parts outside the video display area can be made less visible.

If the projector layout has two or more projectors placed vertically or horizontally, a message indicating that the adjustment result may be inappropriate appears if you select [Geometry Unlinked]. If you click [OK], the [Geometry Unlinked] setting is reflected.

If a model that does not allow you to specify the area of black level adjustment is included, it does not support this function.

• The following message appears if Auto Screen Adjustment could not be completed and must be performed again. To perform Auto Screen Adjustment for black level correction again, click [Continue]. To exit Auto Screen Adjustment for black level correction, click [Finish].

| Auto Scr | een Adjustment  | $\times$ |
|----------|---|----------|
| <u>^</u> | The following adjustment could not yet complete in this condition.<br>Black |          |
|          | You can check each color on the screen.                                     |          |
|          | Select Color White ~  |          |
|          | Do you want to continue to get better results?                              |          |
|          | Continue Finish   |          |

- A message appears if Auto Screen Adjustment fails due to the impact of external lighting, etc.
   An error occurs if the surroundings are too bright or the brightness is changed. In such cases, click [OK] and configure settings again.
- If Auto Screen Adjustment for black level correction is performed again and fails to complete, a message will appear. Click [OK] to exit Auto Screen Adjustment for black level correction.

In this case, perform adjustments manually in the main screen of "Geometry Manager Pro".

(page 71) \*\* Adjustment and Settings - Edge Blending" (page 71)

#### Note

• When you click the × button at the top right of the screen, a confirmation screen for canceling Auto Screen Adjustment appears.

To exit Auto Screen Adjustment, click [OK]. To return to the previous screen, click [Cancel].

| Auto Screen Adjustment               |  |  |  |  |  |  |
|--------------------------------------|--|--|--|--|--|--|
| Do you want to exit auto adjustment? |  |  |  |  |  |  |
| OK Cancel                            |  |  |  |  |  |  |

- The projector layout information configured during Auto Screen Adjustment is stored until the next time you configure the settings.
- To perform detailed adjustment after using Auto Screen Adjustment, perform adjustments manually in the main screen of "Geometry Manager Pro".
  - P "Adjustment and Settings Edge Blending" (page 71)

## **Screen Setting**

# **1** Configure the screen type, overlap areas, and cursor layout in the screen setting screen.



#### Screen setting screen

- 1) Specify the screen type and number of cursors.
  - Select the screen type that matches the shape of the screen. Set the number of cursors according to the shape or curvature of the screen.

[Flat]: Flat screen

[Horizontal Curve]: Screen that is curved in the horizontal direction

[Vertical Curve]: Screen that is curved in the vertical direction

[H-V Curve]: Screen that is curved in the horizontal or vertical direction

• The number of cursors that can be selected is a total of 300, with 2 to 100 per side when [Flat] is selected and 3 to 100 per side when other than that is selected.

## Note

When the software transitions to this screen, a number of cursors calculated from the number of projectors and layout information is set automatically. This value is merely supposed to serve as a guide. Change it to match the shape or curvature of the actual screen.

- 2) Position the cursors in the screen setting window according to the shape of the screen.
  - Select whether to check cursor positions in the actual screen or in a screen on an image captured by the camera. [Projector]: Actual screen

[Camera]: Screen on an image captured by the camera

• When using multiple cameras, there is the method to check each one in the image captured by each camera, and the method to check in a large image created by stitching each of the images into one.

If you want to check in each image, the image of the camera selected in the list is displayed in the screen setting window.

If you want to check in a stitched image, click the [Stitched Image View] button to display a stitched image in a separate screen. In this case, the cursor positions will be reset.



Click [OK] to close the separate screen and return to the previous screen.

• If you click the [Enlarged View] button, the image displayed in the screen setting window is displayed in a separate screen.

You can change the cursor layout, screen type, and number of cursors on the enlarged view screen. Click [OK] to close the separate screen and return to the previous screen.

- The magnification rate (fit the entire image in the screen setting window, 1/2x of the actual image, or 1x of the actual image) of an image captured with a camera can be selected using the slider.
- When an image captured with a camera is displayed in the screen setting window, the selection state cursor is displayed in red, and the other cursors in yellow.
- Position each cursor by dragging them or by using the arrow keys on the keyboard. When using the keyboard, pressing an arrow key while a cursor is selected moves the cursor 8 dots, pressing an arrow key while holding the Ctrl key moves the cursor 1 dot, and pressing an arrow key while holding the Alt key moves the cursor 64 dots.
- You can select the next cursor by pressing the Tab key, or the previous cursor by pressing the Tab key while holding the Shift key.
- When positioning the cursors while viewing the actual screen, you can also select cursors using the number keys on the keyboard.

• The cursors can be positioned automatically by determining the position of the screen from the captured image and projection position. Click the [Auto Cursor] button to open the auto cursor layout screen.



Auto cursor layout screen

The following are displayed in the [Result Image] window.

Red frame: Area to detect the position of the screen (Screen Detection Area).

Green frame: Automatically detected screen area

Yellow points: Cursor positions detected based on the screen area

Change the screen shape and number of cursors as necessary.

If the screen area is not detected properly, adjust [threshold] so that there is no blurring or missing parts in the screen area in the [Binarized Image] window.

If there is lighting, reflections, etc., the calculations of cursor positions may be incorrect. Adjust [Screen Detection Area] in the [Result Image] window to exclude other than the necessary area. Then, click the [ReCalc] button to recalculate the cursor positions and update the [Result Image] window.

Click [Next] to confirm the cursor positions and go to the cursor position manual adjustment screen.



#### Cursor position manual adjustment screen

In the cursor position manual adjustment screen, finely adjust the cursor positions that you confirmed in the previous screen. Click [Apply] to reflect the adjustment results and return to the previous screen.

- If the cursor layout was previously configured and adjusted, you can restore up to the three most recent cursor layout configurations using the [Restore] button. Select [the last], [the second last], or [the third last] from the pull-down menu to select the configuration you want to restore, and click the [Restore] button.
- To return all cursors to their original positions, click [Cursor Reset] button.

- When positioning the cursors while viewing the actual screen, the maximum number of cursors that are projected on the screen at one time is 100. Up to two digits can be be displayed for numbers on the screen, and the 100th, 200th, and 300th cursors will be displayed as "0." For example, when you want to select the 101st cursor, press the Tab key while the 100th cursor is selected, or enter "101" using the keyboards number keys. The cursors that are projected are switched in groups of 100 in different colors. Cursors 1 to 100 are displayed in yellow, 101 to 200 in cyan, and 201 to 300 in magenta.
- The cursor can be selected and moved while checking the live view images. Click [Live View] and configure the settings in live view.

(Page 147) The Wiew" (page 147)

- The cursor can be selected and moved using a gamepad. A function can be assigned to each button of the gamepad by clicking the [KeyConfig] button.
  - @" "Operation by Gamepad" (page 152)
- 3) To configure the horizontal and vertical overlap areas, enter the values in the [Edge Blending Width] fields.
  - The [Edge Blending Width] values are set the same for all projectors.
  - You can also use the sliders to specify values.
  - A percentage value that corresponds to the configured pixel count appears in the percent display.
  - To configure the overlap areas automatically, place check marks next to **Auto** of [Horizontal] and [Vertical]. The values resulting from automatic configuration appear in a message after adjustment is complete.

**2** If the content being projected has margins and you want to set the margin area, select the check box next to [Enable] by [Margin Setting] in the screen setting screen, and then click [Setting].

- Setting a screen margin makes it easier to set the position of cursors when making screen settings.
- Setting of straight margins is possible. Setting of curved margins is not possible.

| Auto Screen Adjustmen   | t  |  |                    |                |               |                        | ×               |
|---|--|--|--------------------|----------------|---------------|------------------------|-----------------|
|   | Camera Select  | Projector Layou                                      | <i>n</i>           | Camera Setting | Projection    | Setting Scr            | een Setting     |
| <ol> <li>Select the screen type</li> <li>Click Auto Cursor to pla</li> <li>Place the cross cursors</li> <li>Configure the edge ble</li> <li>Configure the margin s</li> </ol> | and the number of cross of<br>ice the cross cursors autor<br>on the screen along the p<br>noing width.<br>etting if necessary. | ursors.<br>natically if necess<br>rojection area ins | ary.<br>ide each c | amera view.    |               |                        | Live View       |
| Screen Type Flat  | ~  | Cross Cursors  | H: 7               | Auto           | Cursor        | Coordinate             |                 |
|   |  |  | V: 2               | Curs           | or Reset      | Camera                 |                 |
|   |  |  |                    |                | «1/2 ×1       | Camera 1 V<br>Stitched | Enlarged View   |
|   | +2 +3  |  | 5                  | 6              | 7             | Restore                | the last $\vee$ |
|   |  |  |                    |                |               | Enable                 | Setting         |
|   |  |  |                    |                |               |                        |                 |
|   | ₽ +10  | - <u>1</u> 11 - !                                    | 2                  | <u>13</u> !    | 4             |                        |                 |
| Edge Blending Width   |  |  |                    | Aut            | to            |                        |                 |
| Horizontal 192  | pixel [ 10 % ]   |  |                    | Vertical 0     | 🗘 pixel [ 0 % | 6]                     |                 |
| Click Start to begin  | Geometry + Edge Blending   | g adjustment   |                    |                |               |                        |                 |
|   |  |  |                    |                | KeyConfig     | Back                   | Apply           |

Screen setting screen

## • The margin setting screen opens.

Select the type for margin with [Margin Type] and then set the margin size as a numeric value.

| Marcin tuna      | Q Auto Screen Adjustment   | Camera Select | Projector Layout | Camera Setting    | Projection Setting | ×<br>Screen Setting     |               |
|------------------|----------------------------|---------------|------------------|-------------------|--------------------|-------------------------|---------------|
| wargin type      | Configure the margin setti | ng            |                  | C                 |                    |                         | —Auto Masking |
|                  | Margin Type                | Horizontal    | ~                | uto Masking OFF 🗸 |                    | Restore                 | [Restore]     |
|                  |                            | 5.00          |                  |                   |                    | Reset                   | [Reset]       |
| Margin setting — | Scale<br>© %<br>O pixel    | 5.00 🗘        |                  |                   |                    | Open image file<br>Open | —[Open]       |
|                  | Click OK to continue.      |               |                  |                   |                    |                         |               |
|                  |                            |               |                  |                   |                    |                         |               |
|                  |                            |               |                  |                   |                    | OK                      |               |

Margin setting screen

• Select the margin type.

[Horizontal]: Horizontal margins at the top and bottom of the image

[Vertical]: Vertical margins at the left and right sides of the image

- [Custom]: Margins other than the above
- To use Auto Masking together with margins, configure [Auto Masking].
  - [OFF]: Auto Masking is not performed.

[PC-1 / PC-2 / PC-3]: Auto Masking is enabled.

# Note

[Auto Masking] will only be applied if the upgrade kit (ET-UK20) has been applied to the selected projector. Some models do not support this function.

- (P "Activation" (page 12)
- Specify margins on each side individually. Select either [%] or [pixel] for [Scale] and enter the overall size of the projected content (including margins) in terms of the percentage or number of pixels. Note that the total margin that can be set on any given side cannot exceed 60%.

If [pixel] is selected for [Scale], change the numerical value for [Total resolution] according to the overall content size.



- Click the [Restore] button to restore the margins to the last previously set configuration.
- Click the [Reset] button to return the configured margin size to the initial value (about 5%).

• Click the [Open] button to reads reference image files (files with the extension .bmp or .jpeg).



• When done setting the margins, click [OK]. Display returns to the screen setting screen.

# **3** Click [Apply].

To save the projector positioning information, click [Apply].

- A progress bar appears, and Auto Screen Adjustment for geometry correction and edge blending starts.
- To return to the previous screen, click [Back].

| Auto Screen Adjustment       |                            |                  |                |                    |                | $\times$ |
|------------------------------|----------------------------|------------------|----------------|--------------------|----------------|----------|
|                              | Camera Select              | Projector Layout | Camera Setting | Projection Setting | Screen Setting |          |
|                              |                            |                  |                |                    |                |          |
| Please wait until the adjust | ment results are transferr | ed.              |                |                    |                |          |
| It may take several minute   | ş.                         |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
| 50 % processing.             |                            |                  |                | 5 sec elapsed.     |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    |                |          |
|                              |                            |                  |                |                    | Abort          |          |
|                              |                            |                  |                |                    |                |          |

• To cancel Auto Screen Adjustment, click [Abort]. In such cases, click [OK] when the following screen appears.

| Auto Screen Adjustment                    |    | $\times$ |  |  |  |  |  |
|---|----|----------|--|--|--|--|--|
| Do you want to interrupt auto adjustment? |    |          |  |  |  |  |  |
|   | ОК | Cancel   |  |  |  |  |  |

### Note

When you are making adjustments for 2 or more cameras, an error will be displayed if you click [Start] in the state in which the number of cursors in the direction that the cameras are arranged is the number of cameras or less. Set a number of cursors that is at least one more than the number of cameras.
### **4** When Auto Screen Adjustment is successfully completed, the following message appears.

If you selected the Auto check box in [Edge Blending Width], the values resulting from automatic configuration are displayed.

| Auto Screen Adjustment   |   |  |                  |        |
|--|---|--|------------------|--------|
|  |   |  |                  |        |
|  |   |  |                  |        |
|  |   |  |                  |        |
|  |   |  |                  |        |
|  |   |  |                  |        |
| Check the adjustment res   | ult.  | Pattern                                    | Black Level Area |        |
| Edge Blending Width  | a : 96 pixel  | OFF  | ✓ Geometry Links | ed 🗸 🗸 |
| Logic bicking Hidd   | ·   | Edge Blending                              |                  |        |
|  |   | ON   | ~                |        |
|  |   |  |                  |        |
| Select the location to store   | e adjustment data, and dick r   | next to continue.                          |                  |        |
| Adjustment data will be st   | ored in the projector.  |  |                  |        |
|  |   |  |                  |        |
| <ul> <li>None</li> </ul>   | ○ PC-1  | ○ PC-2                                     | ○ PC-3           |        |
|  |   |  |                  |        |
| If you want to correct t   | he distortion of the projected  | i mage,                                    |                  |        |
| If you want to correct t<br>dick 'Back to the camer<br>If you want to correct t<br>Back to   | ne astorion or the projected<br>a setting".<br>he projection area, dick "Bad                      | mage,<br>k to Screen Setting".<br>Bark to  | Screen Settion   |        |
| If you want to correct t<br>click 'Back to the camer<br>If you want to correct t<br>Back to  | ne distortion of the projected<br>a setting".<br>he projection area, dick "Bad                    | k to Screen Setting".<br>Back to           | Screen Setting   |        |
| If you want to correct t<br>click 'Back to the camer<br>If you want to correct t<br>Back to  | ne distortion of the projected<br>a setting".<br>he projection area, dick "Back<br>Camera Setting | k to Screen Setting".<br>Back to           | Screen Setting   |        |
| If you want to correct to<br>click Back to the camer<br>If you want to correct to<br>Back to | he distortion of the projected<br>a setting".<br>He projection area, dick "Back<br>Camera Setting | image,<br>k to Screen Setting".<br>Back to | Screen Setting   |        |
| If you want to correct t<br>click Back to the came<br>If you want to correct t<br>Back to    | ne dekordon or me projectede<br>a setting:<br>he projection area, dick "Bad                       | mage,<br>k to Screen Setting".<br>Back to  | Screen Setting   |        |
| If you want to correct t<br>click Back to the camer<br>If you want to correct t<br>Back to   | ne datorization of the projected a<br>setting:<br>he projection area, dick 'Bad<br>Camera Setting | image,<br>k to Screen Setting".<br>Back to | Screen Setting   |        |
| If you want to correct t<br>click Back the camer<br>If you want to correct t<br>Back to      | a etting?<br>The projection area, dick "Bad   | image,<br>k to Screen Setting".<br>Back to | Soven Setting    |        |
| If you want to correct<br>dxk Bak to the case.<br>If you want to correct t<br>Back to        | the distribution of the projected<br>activity of the projected marea, club, "Bad                  | Hange, kto Screen Setting".<br>Back to     | Soven Setting    |        |

Select [PC-1], [PC-2], or [PC-3] as the storage location to save the adjustments in the projector, or select [None] to not save the adjustments.

If you want to revise the adjustments, you can return to the camera setting screen by clicking [Back to Camera Setting] or return to the screen setting screen by clicking [Back to Screen Setting].

When the adjustments are complete, you can display a test pattern or set Edge Blending to ON/OFF.

#### Note

If [Geometry, Edge Blending, Color Matching] or [Geometry, Edge Blending] was selected in auto screen adjustment and all of the projectors for which adjustments were made support the area selection function of black level adjustment, you can switch the black level adjustment area.

If [Geometry, Edge Blending] was selected in "Starting Auto Screen Adjustment and selecting the adjustment item" (page 118) and [Set temporary value] or [Use current settings] was selected in the black level adjustment screen (page 124), click [Next] to save the adjustments in the projector. Auto screen adjustment is complete.

If [Geometry, Edge Blending, Color Matching] was selected in "Starting Auto Screen Adjustment and selecting the adjustment item" (page 118), click [Next] to save the adjustments in the projector and prepare for color and brightness correction. Go to the procedure of "
Color Matching Adjustments" (page 129).

In the case of other than the above, click [Next] to save the adjustments in the projector and prepare for black level adjustment. Go to the procedure of "
Black Level Adjustments" (page 136).

• A message appears if Auto Screen Adjustment fails. In such cases, check the content of the message, click [OK], and configure settings again.

To return to the screen from step 1 (@ page 139), click [OK].





- Verify that a large portion of the projected image to be adjusted fits within the screen.
- Check that the camera and screen are as close as possible to directly facing each other.



- Check the position of the image that is projected on the screen.
- Even if there is a setting that exceeds the geometric distortion correction limit of the projector, the adjustment results will be sent to the projector. Bear in mind, however, that in such cases the projected images may lose their shape.

#### Note

• When you click the 🔀 button at the top right of the screen, a confirmation screen for canceling Auto Screen Adjustment appears.

To exit Auto Screen Adjustment, click [OK]. To return to the previous screen, click [Cancel].

| Auto Screen Adjustment               | × |  |
|--------------------------------------|---|--|
| Do you want to exit auto adjustment? |   |  |
| OK Cancel                            |   |  |

- The projector layout and cursor layout information configured during Auto Screen Adjustment is stored until the next time you configure the settings.
- To perform detailed adjustment after using Auto Screen Adjustment, perform adjustments manually in the main screen of "Geometry Manager Pro".

(page 57) \*\* Adjustment and Settings - Geometry Correction" (page 57)

(page 71) \*\*\* "Adjustment and Settings - Edge Blending" (page 71)

## **Live View**

Settings can be configured when, for example, it is difficult to go to the site or checking is difficult because the distance from the screen is far, by making installation adjustments while looking at live view images shot with a camera.

#### Note

- Installation of the Auto Screen Adjustment plug-in software must be complete to use the live view function.
   "Installing the "Auto Screen Adjustment plug-in software"" (page 8)
- The cameras that can be used with live view are the cameras compatible with Auto Screen Adjustment and some cameras that can connect to the LAN. For details on compatible cameras, check the information found on the software download page after logging in to PASS on the following website. https://docs.connect.panasonic.com/projector/pass

## **Live View Preparation**

#### Camera connection

Use a USB cable or LAN cable to connect the camera to the computer.

## **Live View Procedure**

#### **Camera Search screen**

Search for the camera to use in the live view.



#### (1) USB connected camera

Select this when searching for a camera connected by USB.

#### (2) Network connected camera

Select this when connecting with a camera connected by LAN. The IP address needs to be specified.

#### (3) IP Address

Enter the IP address of the camera to connect. To search for the camera to connect, enter an IP address for which to start the search.

#### (4) End IP Address

To search for the camera to connect, select the check box and enter the IP address for which to end the search.

#### **Live View**

#### 5 Search / Connect

When a search for the camera to connect is performed, the search starts according to the entered information. When a search for the camera to connect is not performed, an attempt is made to connect with the camera according to the entered information and the Live View screen appears if the connection is successful. If the connection is successful, the Camera Search screen closes.

#### 6 Exit

Cancel the connection with the camera and close the Camera Search screen.

#### **Camera List screen**

When the camera search is completed, the Camera List screen appears.



#### 1 List of cameras to connect

Displays a list of cameras that were detected by the search.

2 Select All

Select all the detected cameras.

3 Clear All

Clear the selection of all detected cameras.

(4) Back

Return to the Camera Search screen.

(5) OK

Connect with the selected cameras and display the Live View screen.

#### Live View screen

If the connections with the cameras are established correctly, the Live View screen appears.

If you resize the window, the Live View screen is also resized while maintaining the aspect ratio. However, it cannot be made smaller than the original window.



When cameras with LAN connections

#### 1 Camera list

Displays a list of the cameras connected with this application.

#### (2) Live View screen

This shows live view images of the selected camera.

3 Preset

Move the camera to the pan, tilt, focus, and zoom settings of the selected preset position.

(4) Zoom

Set the camera zoom.

5 Focus

Set the camera focus.

6 Pan Tilt

Set the camera pan/tilt.

(7) Brightness

Set the camera brightness.

8 WEB Setting

Open the Web browser to configure the camera settings.

#### Note

The preset settings of the camera need to be configured from the Web browser screen.

9 Add

Add a camera.

(10) Single/Multi Selection

Switch live view display to a single camera only or multiple cameras.

(1) Exit

Close this screen and exit live view.



When cameras with USB connections

#### (1) Resolution

Set the resolution of live view images. The setting is fixed to [VGA].

#### Note

Even if you change the resolution, the display size of the Live View screen does not change. Display is enlarged or reduced to fit this range.

#### 2 Focus

Set the camera focus.

#### Mode:

Set the focus operation mode.

#### Area:

Set the AF area.

#### Manual:

Adjust the focus when [Mode] is [AF-S].

- When focus adjustment is performed, the operation may not be noticeable due to the corresponding amount of change being extremely small.
- This is disabled when [Mode] is [Manual]. Adjust the focus by turning the focus ring of the lens when this mode is set.

#### **Live View**

You can also check the live view images of multiple cameras at the same time.



- Live view continues even if Auto Screen Adjustment is started.
- However, live view images may temporarily disappear during various shooting with the Auto Screen Adjustment function.
- The live view images of all of the cameras in the camera list are displayed in the live view of multiple cameras. However, when there are multiple cameras with USB connections connected, the following restrictions apply to the live view of multiple cameras.
  - If a camera with a USB connection is selected immediately before switching to the live view of multiple cameras, the live view images of the cameras with USB connections that were not selected will be displayed all black.
  - If a camera with a LAN connection is selected immediately before switching to the live view of multiple cameras, the live view images of the cameras with USB connections except the camera with a USB connection that has the smallest ID number will be displayed all black.
- Display with live view of multiple cameras is slow compared with live view of a single camera.
- The live view images of multiple cameras cannot be resized even by resizing the window.

## **Operation by Gamepad**

Operation using a gamepad is supported for some functions of this application. This enables intuitive operation since you do not need to make adjustments while alternately looking at the projected images and computer screen.

#### Note

- Operation by gamepad is supported for the following functions. Operation for functions other than the following requires a computer keyboard and mouse as previously.
  - Image correction by control point operation in the editing area during geometry correction
  - Cursor selection and movement during auto screen adjustment
- Operation by gamepad is supported for cursor selection and movement during auto screen adjustment by all models that support the Auto Screen Adjustment function, but it is only supported for image correction by control point operation in the editing area during geometry correction by some models.
- Only a gamepad that is compatible with XInput can be used. Operation is not guaranteed for other APIs or for functions extended by individual makers.

## **Gamepad Operation Preparation**

#### Projector connection

Use a LAN cable to connect the projector to the computer.

## Gamepad connection

Connect the gamepad to the computer.

- For details on how to connect the gamepad to the computer, refer to the operating instructions of the gamepad.
- If multiple gamepads are connected, only the one that was connected first can be used with this application. If the gamepad being used is disconnected, only the subsequently connected gamepad can be used.

## **Gamepad Operation during Geometry Correction**

You can use a gamepad to perform image correction by control point operation in the editing area during geometry correction. The function assignment for each key of the gamepad can be customized to make the gamepad easier to use.

#### Key Config screen

Change the function assignment for each key of the gamepad from the Key Config screen.



## 1 A

Select the operation for when the [A] button is pressed.

(2) в

Select the operation for when the [B] button is pressed.

3 x

Select the operation for when the [X] button is pressed.

(<u>4</u>) Y

Select the operation for when the [Y] button is pressed.

(5) LEFT THUMB

Select the operation for when the left thumbstick is pushed in.

(6) RIGHT THUMB

Select the operation for when the right thumbstick is pushed in.

(7) LEFT SHOULDER

Select the operation for when the left shoulder is pressed.

8 RIGHT SHOULDER

Select the operation for when the right shoulder is pressed.

(9) UP

Select the operation for when the up button of the directional pad is pressed.

(10) DOWN

Select the operation for when the down button of the directional pad is pressed.

(11) LEFT

Select the operation for when the left button of the directional pad is pressed.

(12) RIGHT

Select the operation for when the right button of the directional pad is pressed.

### (13) START

Select the operation for when the [START] button is pressed.

#### (14) васк

Select the operation for when the [BACK] button is pressed.

#### 15 LEFT TRIGGER

Select the operation for when the left trigger is pressed.

#### (16) RIGHT TRIGGER

Select the operation for when the right trigger is pressed.

#### Note

• The following functions can be assigned to [A] to [RIGHT TRIGGER].

| Function                 | Description   |
|--------------------------|---|
| Select a single point    | Select one control point or one area.   |
| Select multiple points   | Select multiple control points or multiple areas while keeping the already selected control point selected. |
| Move up select point     | Move the position of the selected control point up by one grid.   |
| Move down select point   | Move the position of the selected control point down by one grid.   |
| Move left select point   | Move the position of the selected control point left by one grid.   |
| Move right select point  | Move the position of the selected control point right by one grid.  |
| Switch lock status       | Switch between lock and unlock for all grid intersection points.  |
| Change correction amount | Change the correction amount of the control point.  |
| Previous Test Pattern    | Change to the previous test pattern.  |
| Next Test Pattern        | Change to the next test pattern.  |
| Previous Grid Lines      | Change to the previous grid line display color.   |
| Next Grid Lines          | Change to the next grid line display color.   |
| Change Grid Resolution X | Increase the number of grid lines in the horizontal direction by one.                                       |
| Change Grid Resolution Y | Increase the number of grid lines in the vertical direction by one.   |
| Switch Transfer Mode     | Switch between [Manual Transfer] and [Auto Transfer].   |
| Send data                | Transfer the correction data when [Auto Transfer] is [OFF].   |
| Undo                     | Undo.   |
| Redo                     | Redo.   |
| Move Cursor to Default   | Select the top left grid intersection point and align the mouse cursor.                                     |
| Unable                   | Disable the button.   |

• The same function can be assigned to multiple buttons.

### (7) SELECT STICK MODE

Select the operations for when the left and right thumbsticks are lowered.

Move Cursor/Warp Point: Move the mouse cursor with the left thumbstick and perform control point correction with the right thumbstick.

Warp Point/Move Cursor: Perform control point correction with the left thumbstick and move the mouse cursor with the right thumbstick.

#### (18) CURSOR SPEED

Specify the speed of mouse cursor movement. Input range: 1 to 5

#### (19) Set

Reflect the current function assignment for each key and close this screen.

#### **Operation by Gamepad**

### 20 Load

Load a file containing the function assignment for each key.

#### (21) Save

Save the function assignment for each key to a file.

### Note

Specify [Unable] for a button to which you do not wish to assign a function (disable the button). However, you cannot disable the function assignment of when the left and right thumbsticks are lowered.

For the gamepad key layout, refer to the following diagram. Please note that the layout may differ depending on the maker.



## **Operation method**

#### Selecting the control points

To select a single control point, perform the following operation.

- **1** Move the mouse cursor to the grid intersection point that you wish to select with a thumbstick.
- **2** Click the button with [Select a single point] assigned.
- **3** The intersection point specified by the mouse cursor is selected as the control point. At this time, a white  $\Box$  appears at the same position on the projected image. If a control point is already selected, it is deselected.

|  | L |
|--|---|
|  |   |
|  |   |

Screen in this software (control point selected)



Projected image with control point selected

To select multiple control points, perform the following operation.

- **1** Move the mouse cursor to the grid intersection point that you wish to select with a thumbstick.
- **2** Click the button with [Select multiple points] assigned.
- **3** The intersection point specified by the mouse cursor is selected as the control point. At this time, white  $\Box$  appear at the same positions on the projected image. If a control point is already selected, a control point is added without deselecting that control point.
- **4** Repeat steps 1 to 3 for the control points you wish to select.

To select the control points of one vertical or horizontal line, perform the following operation.

- **1** Move the mouse cursor onto a line between two grid intersection points with a thumbstick.
- **2** Click the button with [Select a single point] assigned.
- 3 All intersection points existing on the line are selected as control points. At this time, white  $\Box$  appear at the same positions on the projected image. If a control point is already selected, it is deselected.

To add control points of one line while a control point is already selected, click the button with [Select multiple points] assigned instead in steps 1 to 3 above.

To select control points with area specification, perform the following operation.

- **1** Move the mouse cursor to a place near a grid intersection point you wish to select with a thumbstick.
- **2** Move the cursor while holding down the button with [Select a single point] assigned to enclose an area.
- **3** Release the held down button.
- 4 The grid intersection points included in the rectangular area enclosed by moving the cursor are selected as the control points. At this time, white □ appear for the number of selected intersection points at the same positions on the projected image. If a control point is already selected, it is deselected.

To add control points with area specification while a control point is already selected, hold down the button with [Select multiple points] assigned instead in steps 1 to 4 above.

#### Note

Area selection cannot be performed if an already selected control point exists below the mouse cursor when selecting an area.

## Moving (correcting) the control points

When a control point is selected, move the control point by lowering the thumbstick with control point correction assigned in any direction.

A control point normally moves in 1-pixel increments, but the amount of movement when the thumbstick is lowered can be changed by clicking the button with [Change correction amount] assigned. At this time, a red (coarse adjustment: 4 pixels) or green (fine adjustment: 0.2 pixels) line is displayed around the white  $\Box$  at the control point on the projected image.



When normal movement amount



When coarse adjustment



When fine adjustment

Note

When [Auto Transfer] is OFF, the corresponding information can be reflected in the projected image by clicking the button with [Send data] assigned or clicking [Manual Transfer] on the application screen.

## Locking/unlocking control points

Clicking the button with [Switch lock status] assigned locks or unlocks all grid intersection points in one go. If this operation is performed while there is a grid intersection point locked at even one place, it is unlocked. The locked grid intersection points are indicated by black at the same positions on the projected image.



If you select a single locked grid intersection point or multiple locked grid intersection points, just the selected control point(s) will be unlocked and selected as a new control point(s).

## Note

If control point selection is performed on a line between multiple locked control points, none of the control points will be unlocked.

## Changing the control points

When the button with [Move up (down/left/right) select point] assigned is clicked while just one control point is selected, the control point selection position changes by moving one grid up (down/left/right).

#### Note

- While multiple control points are selected, the control point positions will not change even if you perform this operation.
- If the destination for control point movement is locked, that control point is kept locked.
- If some error occurred or a state that needs to be checked occurred during operation, you will be notified by the gamepad vibrating.
  - When the control point movement amount was too large (= image correction amount was too large) while the [Alert Distortion] check box is selected
  - When the button with [Change Grid Resolution X] (or [Change Grid Resolution Y]) assigned is clicked while the number of horizontal grids has reached the limit
  - When an error occurred with communication between the projector and PC

## **Gamepad Operation during Auto Screen Adjustment**

You can use a gamepad to perform cursor selection and movement during auto screen adjustment. The function assignment for each key of the gamepad can be customized to make the gamepad easier to use.

#### Key Config screen

Change the function assignment for each key of the gamepad from the Key Config screen.



## **1** A

Select the operation for when the [A] button is pressed.

(2) в

Select the operation for when the [B] button is pressed.

3 x

Select the operation for when the [X] button is pressed.

(4) Y

Select the operation for when the [Y] button is pressed.

#### 5 LEFT THUMB

Select the operation for when the left thumbstick is pushed in.

## (6) RIGHT THUMB Select the operation for when the right thumbstick is pushed in. (7) UP Select the operation for when the up button of the directional pad is pressed. (8) DOWN Select the operation for when the down button of the directional pad is pressed. (9) LEFT Select the operation for when the left button of the directional pad is pressed. (10) RIGHT Select the operation for when the right button of the directional pad is pressed.

(1) BACK

Select the operation for when the [BACK] button is pressed.

| - NO  |  |
|-------|--|
| L. U. |  |
| I N'I |  |

• The following functions can be assigned to [A] to [BACK].

| Function                     | Description                            |
|------------------------------|--|
| Move up Cross Cursor         | Move the selection state cursor up.    |
| Move down Cross Cursor       | Move the selection state cursor down.  |
| Move left Cross Cursor       | Move the selection state cursor left.  |
| Move right Cross Cursor      | Move the selection state cursor right. |
| Select next Cross Cursor     | Select the next cursor.                |
| Select previous Cross Cursor | Select the previous cursor.            |
| Unable                       | Disable the button.                    |

• The same function can be assigned to multiple buttons.

#### (12) CHANGE CROSS CURSOR SPEED

Select what combination of the left and right shoulders and triggers to assign changing the selected cursor movement speed.

The cursor movement speed increases or decreases by performing operation while pressing the keys specified here.

(13) Set

Reflect the current function assignment for each key and close this screen.

(14) Load

Load a file containing the function assignment for each key.

(15) Save

Save the function assignment for each key to a file.

- Start of adjustment is assigned to the [Start] button so another function cannot be assigned.
- Cursor movement is assign for the operation when the left and right thumbsticks are lowered so another function cannot be assigned.
- Specify [Unable] for a button to which you do not wish to assign a function (disable the button). However, you cannot disable the function assignment of the left and right shoulders and triggers.

## **Operation method**

Position the cursors according to the shape of the screen while checking the images projected on the actual screen.

## Selecting a cursor

Select the next cursor by clicking the button with [Select next Cross Cursor] assigned, and select the previous cursor by clicking the button with [Select previous Cross Cursor] assigned.

## Moving cursor

Move the position of the selected cursor up (down/left/right) by clicking the button with [Move up(down/left/right) Cross Cursor] assigned. Also, move the position of the selected cursor by lowering either the left or right thumbstick in any direction. Ordinarily, movement is 8 dots, but you can move the selected cursor 64 dots by performing the selected cursor movement operation while holding down the button for which movement at high speed is assigned and move the selected cursor 1 dot by performing the selected cursor movement operation while holding down the SPEED].

When positioning of the cursors is completed, start auto screen adjustment for geometry correction and edge blending by clicking [START] button of the gamepad.

#### Note

Selecting the screen type, changing the number of cursors, and setting the edge blending and margin areas are not possible with a game pad. Configure the settings using a computer keyboard and mouse as previously.

## **Frequently Asked Questions**

Check the following points once more before requesting repair.

#### Projector is not recognized.

- Has the projector's power been turned on?
- Is the projector supported by the software application? I "Projectors supported" (page 10)
- Have the units been connected properly? I "Preparation" (page 10)
- Has the projector's network been set up correctly? @ "Setting the Projector" (page 11)
- Has an attempt been made to connect 100 or more projectors?

#### No connection can be made between my projector and my computer

• When Windows Firewall has been detected

Enter "Windows Defender Firewall" in the search box of the taskbar and select [Windows Defender Firewall] in the results. Is this software registered in [Allow an app or feature through Windows Defender Firewall]?

If it is not, add this software in [Allow an app or feature through Windows Defender Firewall].

- Adding procedure
- 1. Enter "Windows Defender Firewall" in the search box of the taskbar and then select [Windows Defender Firewall] in the displayed search results.
- 2. When the <Windows Defender Firewall> window appears, click [Allow an app or feature through Windows Defender Firewall].
- When the <Allow apps to communicate through Windows Defender Firewall> window appears, click [Change settings] → [Allow another app...].
- 4. When the <Add an app> dialog box appears, select [Geometry Manager Pro] and click the [Add] button. If [Geometry Manager Pro] is not in the list, click [Browse], select [GeometryGUI.exe], and click [Open]. [Geometry Manager Pro] or [GeometryGUI] appears in the [Apps] column.
- 5. [Geometry Manager Pro] or [GeometryGUI] appears in the [Allowed apps and features] column.
- 6. Select [Private] or [Public] for the network you want to allow connection to and click to select the check box.
- 7. Click [OK] in the <Allow apps to communicate through Windows Defender Firewall> window.
- 8. This software will now be added to the Windows Defender Firewall's exception application list.

#### <When another firewall has been detected>

Are any firewall-containing applications installed?

If any applications which contain firewalls are installed, the installation may not complete.

(The firewall function may activate without launch of the application if the application has already been installed.)

If this occurs, firewall settings must be changed in order to allow connection to the network. See the User's Manuals for all applications containing firewalls to perform these settings.

#### Messages that appear when an attempt to uninstall or update the software is made

<Is the "Warning 1910. Could not remove ..." message displayed?> If an NVIDIA driver is installed on the computer, the following message may appear.



Click [OK] to continue an uninstall or update procedure.

Although uninstalling the software will also remove the desktop shortcut icons, they will be regenerated when you start up the computer next time. Manually delete the shortcut icons.

#### Files cannot be saved.

- Has an attempt been made to save a file that includes values that exceed the range which can be set in the projector?
- Is there enough free memory on the hard disk?
- Do you have the authority to access the folder in which the file is to be saved?
- Does a message appear to notify you that a file required for file saving is damaged?
  - Perform the following procedure because a file required to generate the data to save is damaged.
    - 1. Open the following folder.

C:\Users\<Name of logged in user>\AppData\Roaming\Microsoft\Crypto\RSA\S-\*-\*-\*-\*

- \* "S-\*-\*-\*" differs depending on the computer, and multiple of them may also exist.
- 2. Move any file without an extension in the folder to another location. If a warning is displayed to notify you that it is a system file, select "Yes" to continue the process.
  - If there are multiple "S-\*-\*-\*-" in the "RSA" folder, perform the following procedure for all of the folders.
- Execute saving of the setting file (with .prjs or .prjc extension) or the file (with .ugk extension) used for "Multi Monitoring & Control Software".
- 4. Return any file moved in step 2 to its original folder.
  - If a file overwrite confirmation message appears, select to skip overwriting.

#### Image correction cannot be performed.

- Have settings been sent to the projector that exceed the range which can be set in the projector?
- Has the projector's power been turned on?
- Some items cannot be set if the projector's power is not on.
- Are the projector's input connectors set correctly, and have the correct signals been input?
   Some items cannot be set depending on the input connector settings, the types of signals input and whether or not signals are present.

#### The bitmap used for masking purposes cannot be loaded.

- Has an attempt been made to load bitmap data which is not in the 1-bit monochrome format?
- Does the bitmap have the appropriate size?
   Bitmaps smaller than 8 x 8 pixels and bitmaps larger than 1920 x 1200 pixels (when the resolution of the projector is 1920 x 1200 dots or 1400 x 1050 dots) or 4096 x 2400 pixels (when the resolution is other than the aforementioned) cannot be used for masking.

#### Cannot connect to the camera (Auto Screen Adjustment).

- Is the camera turned on?
- Is the camera connected to the computer properly?
- Is there a large number of data files stored on the SD card inserted in the camera?
   If camera connection fails, try removing the SD card and performing the camera connection settings again.
- If there is any SD card inserted in the computer or there is any device other than a camera connected via USB, remove them all and then reconfigure the settings.

#### Auto Screen Adjustment does not start.

- You may not be able to execute Auto Screen Adjustment depending on the projector's settings. For details on operations restricted by the projector's settings, check the information found on the software download page after logging in to PASS on the following website.
  - https://docs.connect.panasonic.com/projector/pass

#### The image does not fit exactly on flat screens (Auto Screen Adjustment).

- The projected image may not match the edges of the screen exactly if the screen is sagging.
  - If the top and bottom edges are off:

In the screen setting screen, set the screen type to [Horizontal Curve], and specify at least 3 cursors according to the shape of the screen.

If the left and right edges are off:

In the screen setting screen, set the screen type to [Vertical Curve], and specify at least 3 cursors according to the shape of the screen.

#### Geometry correction results in an images that appears curved (Auto Screen Adjustment).

• This occurs on soft curved screens and on screens with heavy sag. Correction is performed so that the image appears straight from the point of view of the camera. Position to the camera so that it is as close as possible to directly facing the screen.

#### An exposure adjustment error occurs on the camera (Auto Screen Adjustment).

• If the projector is too bright or the screen's gain is high, for example, an exposure adjustment error may occur during camera settings configuration.

In such cases, attach an ND filter to the camera lens, or lower the brightness of the projector before performing adjustment again.

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