

Operating Instructions LED Manager LV

Windows



Thank you for purchasing this Panasonic product.

■ Before using this software, please read the instructions carefully.

Contents

Introduction	3
Precautions and Disclaimers.....	3
Terms Used in This Manual.....	4
What You Can Do with LED Manager LV	5
Preparation	6
System Requirements	6
Devices Supported	6
Installation	6
Uninstallation	7
Connecting a Device and Computer	7
Operation	8
Starting the Software.....	8
Main Screen	10
Setting Power Standby.....	12
Setting the Cabinets and Video.....	13
Changing the Input Signal Frequency	20
Checking the Device Information.....	21
Controlling the Device.....	22
Setting the Network Function.....	23
Maintenance	28
Exiting the Software	35
Miscellaneous.....	36
Troubleshooting	36
Control Commands via a LAN	37
Software Licenses	40
Trademarks	40

Introduction

Precautions and Disclaimers

- Precautions regarding security

When using the LED Manager LV Software, 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.

- Set a password for LAN control in order to set limits on user accessibility.
- 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.
- Always use on a network that has safety protection such as a firewall implemented.
- Set a password for the computer you are using in order to set limits on user accessibility.
- When disposing of the computer, initialize the network settings, user name, and password before disposal.

- The illustrations and display examples used in this manual may differ from the actual product.

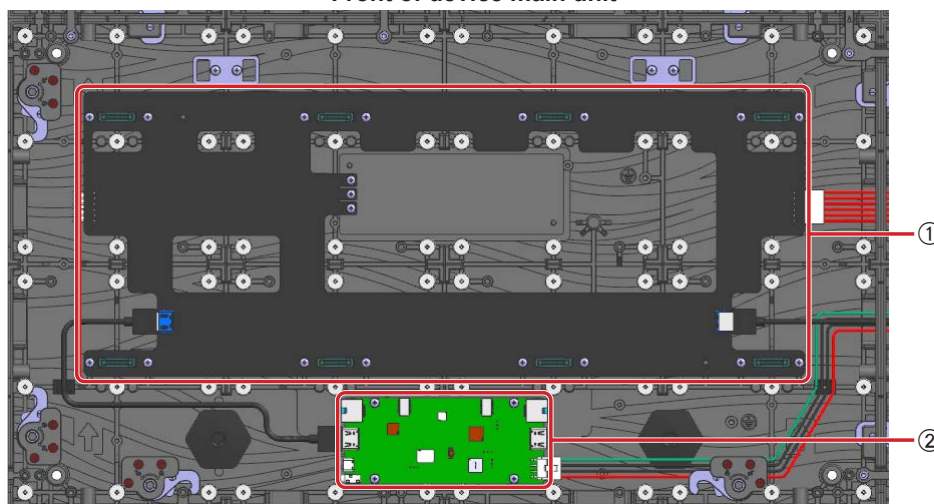
- In this document and software, “device” refers to the TL-55LV12A series.

- Panasonic Projector & Display Corporation cannot be held liable for damages arising from data corruption or loss as a result of using this display.

Terms Used in This Manual

Term	Description
Device	A TL-55LV12A series unit.
Cabinet	A 27.5-inch (resolution: 480 × 270) enclosure. This device is a 55-inch display consisting of four cabinets arranged in a 2 × 2 layout.
LED module	The basic unit that makes up the LED display. It is a component consisting of multiple LED elements mounted on a board, and large-screen display tailored to specific applications is achieved by combining multiple of them.
Hub board	A board to control LED modules. (① in the figure)
System board	The main board for controlling the signal system of the device. (② in the figure)
Network function	A function for controlling the device via a LAN connection.
Frame	A rectangle to represent 27.5 inches in the cabinet connection settings.
Port	This is for differentiating each system board when using multiple system boards. (First system board: port 1, second system board: port 2)
Cabinet data	Dedicated data including LED module drive parameters and LED chip current values.
Cabinet data file	A file in which cabinet data is saved. The extension is .fsysx.
Project file	A file in which the LED module parameters, cabinet connection method, and other setting information are saved. The extension is .lctprjx. The cabinet data files are saved in the project file.
Calibration data	The data of calibrations made using a camera for maintaining uniformity in luminance and color across each LED module. This data is saved in both the hub board and LED modules, and the data of the hub board is used when the LEDs light.

Front of device main unit



What You Can Do with LED Manager LV

This software can be used to set up and control a device.

■ Power standby settings

You can set the power standby function of the connected device. ➡ “Setting Power Standby” (page 12)

■ Screen layout and video settings

You can set the display positions and video to match your layout. ➡ “Setting the Cabinets and Video” (page 13)

■ Device information display

You can obtain various information about the connected device and display the information in a list.

➡ “Checking the Device Information” (page 21)

■ Device control

You can control the power, adjust the brightness, and adjust the color temperature of the connected device.

➡ “Controlling the Device” (page 22)

■ Network function settings

The network settings must be configured in advance to use a device via a network.

To configure the network settings, you need to connect the supplied USB A-C cable to the USB Type-C port of the device.

➡ “Setting the Network Function” (page 23)

■ Maintenance

You can replace the LED modules and change their colors. ➡ “Maintenance” (page 28)

Preparation

System Requirements

■ Computer

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

OS:	Microsoft Windows 11
CPU:	Intel Core i5 or higher
Memory:	8 GB or greater
Graphics card:	OpenGL 3.3 or higher
Available disk space:	600 MB or greater
Others:	A display with a resolution of 1024 × 768 pixels or higher using High Color (16 bit) or higher LAN port for a wired LAN (10Base-T/100Base-TX/1000Base-T), USB Type-C (USB-C), or USB Type-A (USB-A)

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.

Devices Supported

TL-55LV12A series

Installation

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

1 Download this software from the Panasonic Professional Displays website.

For details on downloading, refer to the following URL.

<https://docs.connect.panasonic.com/prodisplays>

2 Extract the software and double-click “Setup.exe” in the folder you created.

3 Follow the on-screen instructions to install the software.

If you select the [Create a desktop shortcut] check box during installation, a shortcut icon is created on the desktop after installation completes.



Uninstallation

Enter and select “Installed Apps” in the search box in the taskbar, select [LED Manager LV], and click [Uninstall]. When the confirmation message appears, click [Yes].

Connecting a Device and Computer

There are two connection methods for setting up a device from a computer: USB connection and LAN connection. When connecting the computer to a device for the first time, connect it using the USB A-C cable supplied with the device.

For details on the methods to connect a device and computer and the procedure to turn on the power of the device, refer to “Operating Instructions – Functional Manual” of the device.

For details on downloading “Operating Instructions – Functional Manual” of the device, refer to the following URL.
<https://docs.connect.panasonic.com/prodisplays>

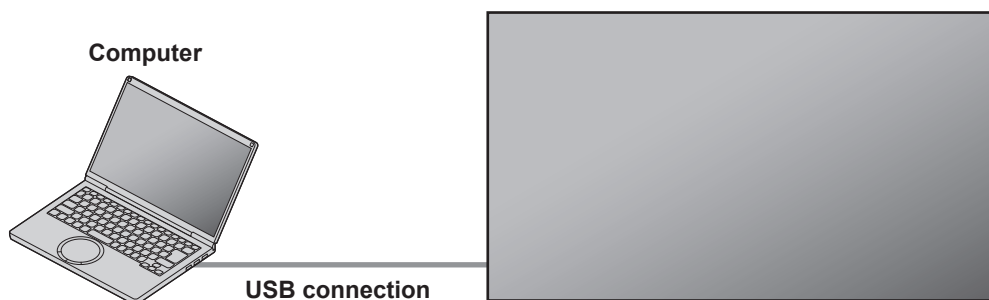
Connection method	Function comparison
USB Type-C	All functions are available.
LAN	All functions except [NETWORK] (network settings) are available.

Note

- 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.

■ Procedure to connect a device and this software for the first time

- 1 Turn on the power of the device.
- 2 Use the USB A-C cable supplied with the device to connect the computer to the device.



Note

- When using this software, turn on the power of the device.
- If the software is used with the device in standby mode, the available functions will be limited.
- If the settings of the device are changed with, for example, the remote control while using this software, they may differ from those displayed in this software.

- 3 Start this software.

Operation

Starting the Software

Double-click the icon of this downloaded software.

When the software starts, the [Function] (function selection) screen appears.

Click [New Project] to use a cabinet data file for creating a project file from the beginning, and [Open Project] to use a created project file.

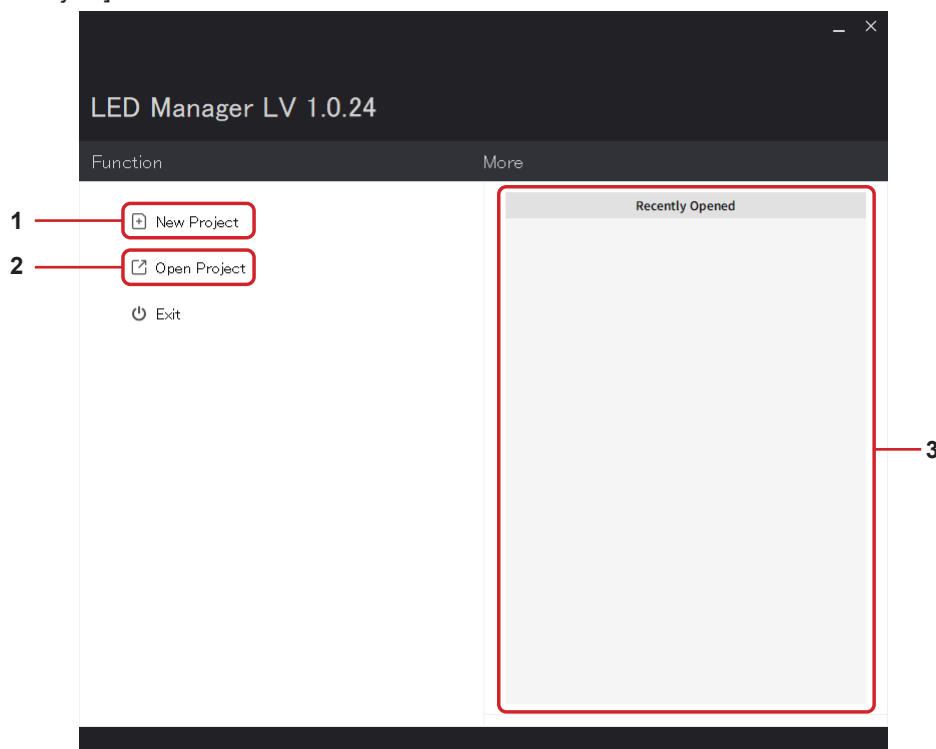
- You can select the project file to load from [Open Project].

For the project file to use, download and use the project file that is available on the Panasonic Professional Displays website. The setting information for a 55-inch display is saved in this project file. For details on downloading, refer to the following URL.

<https://docs.connect.panasonic.com/prodisplays>

After configuring the settings, save the project file. We recommend using the same project file from now on.

- You can create a project file from [New Project]. Use a new project when you wish to change the video signal frequency. You will need to configure all of the settings yourself. In any case other than this, we recommend selecting [Open Project].



1 [New Project]

Create a new project.

If you click [New Project], you can select the save destination for the project file (extension: .lctprjx). When you select the save destination and click [OK], the project file is created and the main screen is displayed.

2 [Open Project]

Load a created project.

If you click [Open Project], you can select a project file (extension: .lctprjx) to load.

When you select the project file, it is loaded and the main screen is displayed.

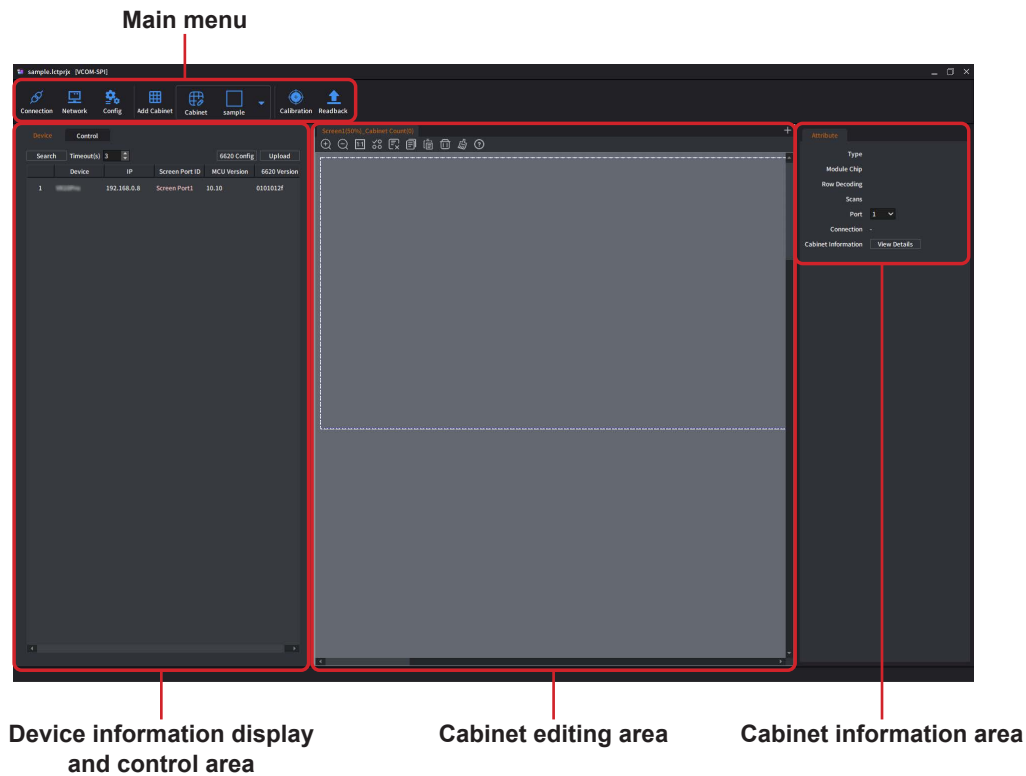
3 [Recently Opened]

Displays a list of already created project files. If you click a project file, the contents of the project are loaded and the main screen is displayed.

Note

- A project is the LED module parameters, cabinet connection method, and other setting information. A project is saved to a project file (extension: .lctprjx).
- Cabinet data is the initial data including the LED module parameters. Cabinet data is saved to a cabinet data file (extension: .fsysx).
- A project file includes the contents of the cabinet data file.

Main Screen



■ Main menu

- [Connection]: Use a LAN to connect with the PC.
- [Network]: Use the USB A-C cable supplied with the device to configure the IP address and other LAN settings and the network function settings.
- [Config]: Set the standby operation of the connected device.
- [Add Cabinet]: Set the number of cabinets to use in the cabinet editing area based on the loaded cabinet data file (extension: .fsysx).
- [Cabinet]: Load a cabinet data file (extension: .fsysx) saved on the PC into this software.
- [sample]: Displays the loaded cabinet data file. Clicking it generates frames in 27.5-inch units in the cabinet editing area.
- [Calibration]: Perform calibration data operations for all LED modules. Data loading and color adjustment are possible.
- [Readback]: Read the cabinet data file from the connected device. (Use this only when changing the input signal frequency.)

■ Device information display and control area

- [Device]: Displays information about the connected device.
 - [Search]: Refresh the information about the connected device.
 - [Timeout(s)]: Set the time until a timeout occurs.
 - [6620 Config]: Set the frequency, input, resolution, and output resolution.
 - [Upload]: Upload the item settings to the connected device.
 - [Control]: Control the connected device.
- For details, refer to “Controlling the Device” (page 22).

■ Cabinet editing area

-  Enlarge the display of the cabinet editing area.
-  Reduce the display of the cabinet editing area.
-  Return the display magnification of the cabinet editing area to 100%.
-  Select all cabinets.
-  Deselect all cabinets.
-  Copy the selected cabinet.
-  Paste the copied cabinet.
-  Delete the selected cabinet from the cabinet editing area.
-  Delete all cabinets from the cabinet editing area.
-  Display the shortcut keys.

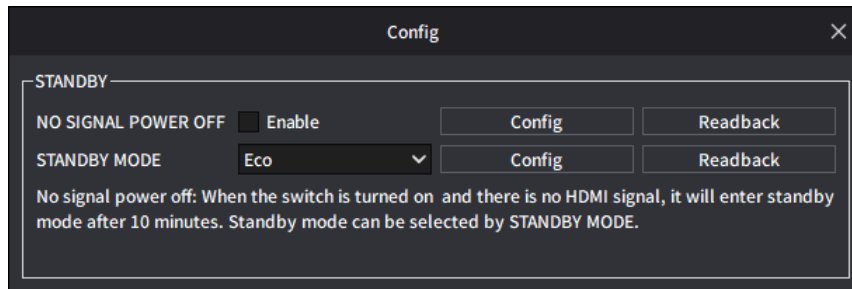
■ Cabinet information area

Item name	Description
Type	Displays the file name of the cabinet data.
Module Chip	Displays the model number of the driver IC used in the LED module.
Row Decoding	Displays the model number of the decoder IC used in the LED module.
Scans	Displays the number of scan lines of the driver IC used.
Port	Displays the port set in the selected frame. For use with one TL-55LV12A unit, only port 1 will be used.
Connection	Displays the number of the selected cabinet.
Cabinet information	Displays the pixel information screen of the LED module saved in the cabinet data.
Position Coordinate	Displays or allows you to specify the X and Y coordinates for the display position of the selected cabinet.

Setting Power Standby

■ [Config] settings

If you click [Config] in the main menu, you can set the operation related to power standby of the connected device. When using this software, set [STANDBY MODE] to [Network].



Set the following items displayed in [STANDBY].

- [NO SIGNAL POWER OFF]: This is a function to switch to the power standby state when no HDMI signal has been input for approximately 10 minutes. This function is enabled by default.
 - On: To enable this function, select the [Enable] check box and then click [Config].
 - Off: To disable this function, clear the [Enable] check box and then click [Config].
- [STANDBY MODE]: Set the power during power standby. This is set to [Eco] by default.
 - [Eco]: To minimize power consumption in power standby, select [Eco] and then click [Config].
 - [Network]: To use the network function in power standby, select [Network] and then click [Config].

Note

- If you want to check the settings of the device, click [Readback].
- If [STANDBY MODE] is set to [Network], you can turn the power of the device on not just by infrared remote control but also via LAN and USB Type-C.
If [STANDBY MODE] is set to [Eco], you can turn the power of the device on only by infrared remote control. In this case, the power cannot be turned on by control via LAN or USB Type-C using this software or by command control.

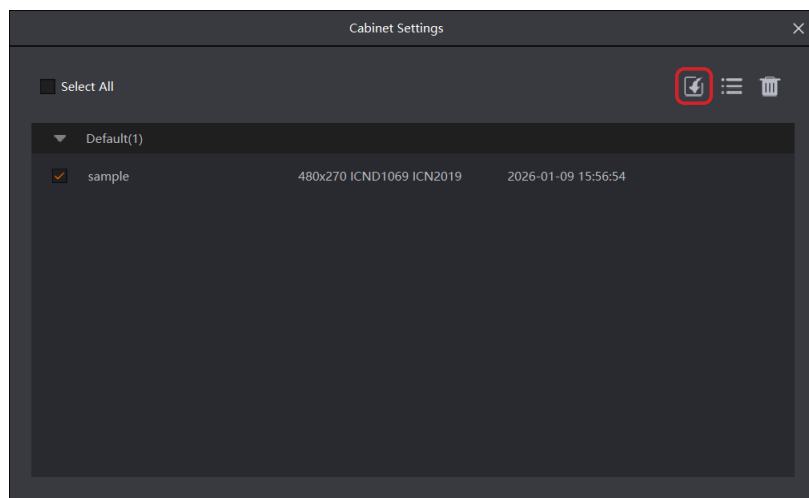
Setting the Cabinets and Video

■ Placing cabinets

When there are no frames of cabinet data placed in the cabinet editing area (page 10), use the following procedure to place cabinets before configuring the video display settings.

- When a project file available for download on the Panasonic Professional Displays website is loaded with [Open Project], this step is not necessary. The state will be that where step 1 of “Cabinet connection settings” (page 15) is completed.

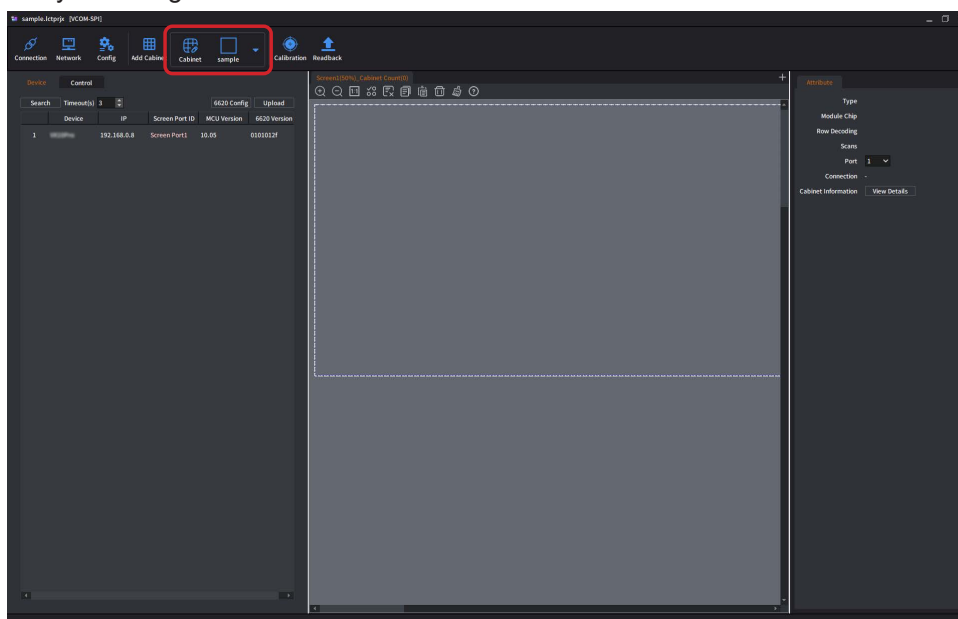
- 1 Click [Cabinet] in the main menu to display the [Cabinet Settings] screen.
- 2 Click  and then load a cabinet data file (extension: .fsysx) available for download from the website for this software.



- 3 Click  to close the [Cabinet Settings] screen.

The cabinet information is displayed on the right side of [Cabinet].

If you click  of the cabinet icon, the file names are displayed as a list of data. If multiple files are loaded, you can switch files by selecting a file from the list.



4 Click [Add Cabinet] in the main menu and then set the number of cabinets to use.

5 The [Add Cabinet] screen appears. Set the following items to match your panel layout.

[1. Cabinet Select]

[Group]: Use the default only.

[Name]: Select the cabinet data to use.

[2. Cabinet Columns/Rows]

[Columns]: Specify the number of cabinet frames in the width direction.

[Rows]: Specify the number of cabinet frames in the height direction.

[3. Offset Position]

[X]: Specify the X coordinate of the cabinets to be placed.

[Y]: Specify the Y coordinate of the cabinets to be placed.

6 Click [Confirm].

The frames indicating cabinets are placed in the cabinet editing area.

Note

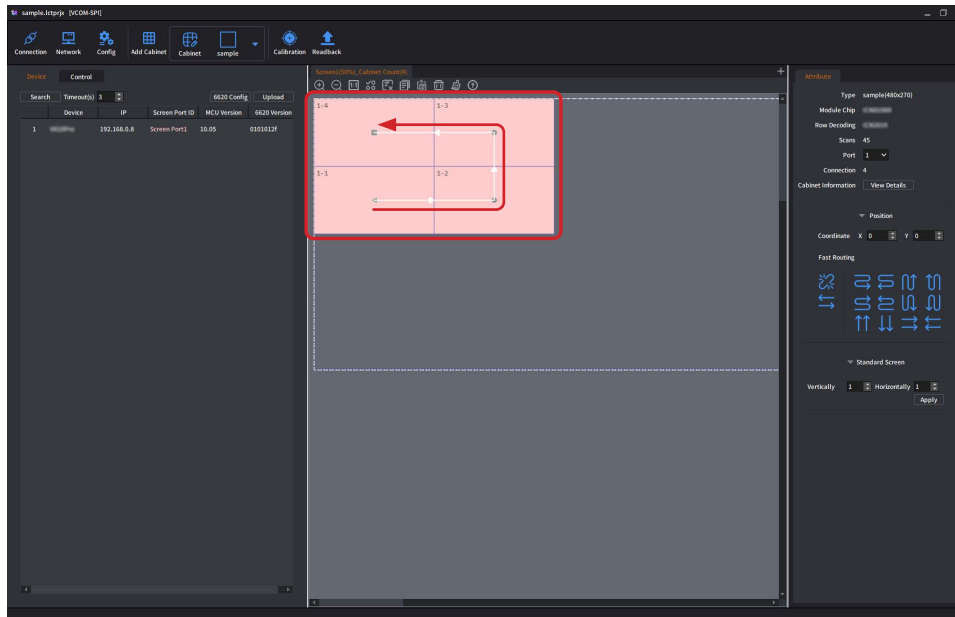
- The resolution of one frame of the cabinet file available on the Panasonic Professional Displays website is [480 × 270].

Configure the settings as follows.

LED modules	Settings of [Columns]	Settings of [Rows]
55 inches	2	2

■ Cabinet connection settings

1 Click the center of the frames in the connection order of HDMI boards.



All of the frames are connected.

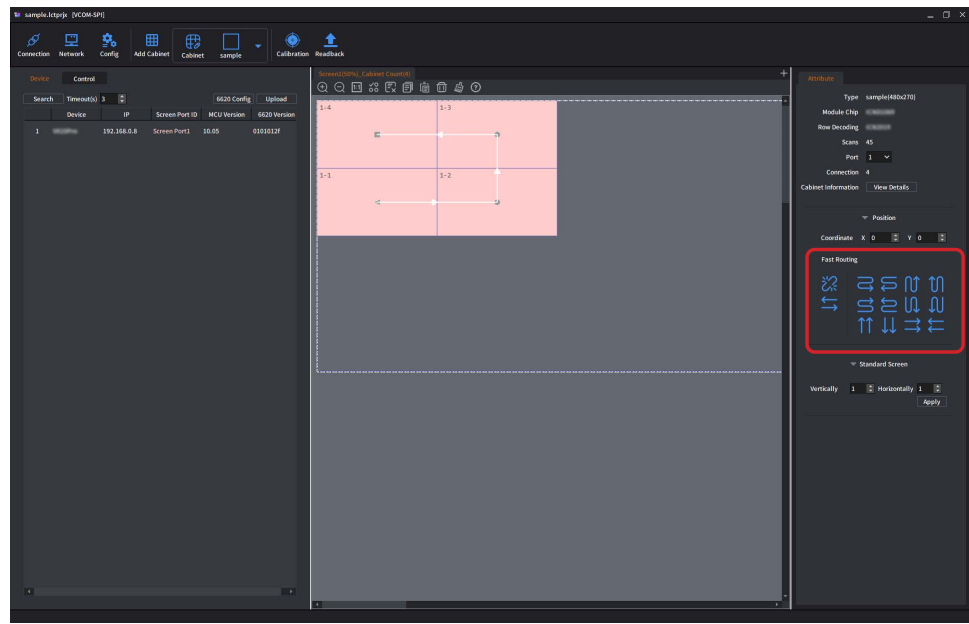
The screen shows an example when the frames are connected on a 55-inch device.

One frame of cabinet data represents 27.5 inches.

When using frames with a 55-inch display, use them in a 2 × 2 layout as shown in the figure above.

Using [Fast Routing] for placement

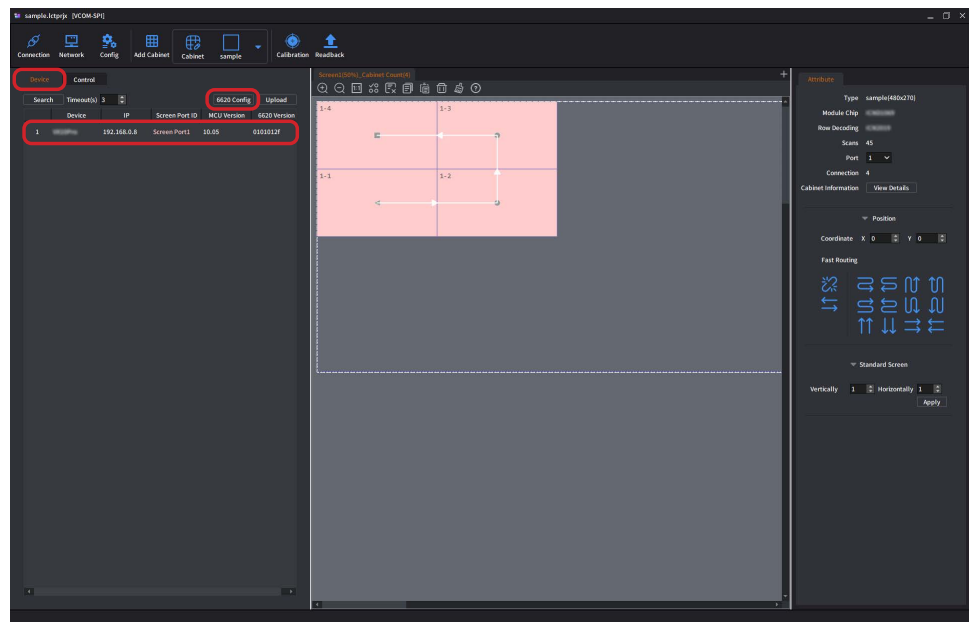
You can connect frames by enclosing the frames you want to connect by dragging, and then clicking one of the following icons of [Fast Routing].



Icons	Description
	Cancel the frame connection.
	Reverse the connection direction of the frames.
	Connect the frames in the direction shown in the image.

2 When the frame connection settings are completed, click the [Device] tab and then click [Search].

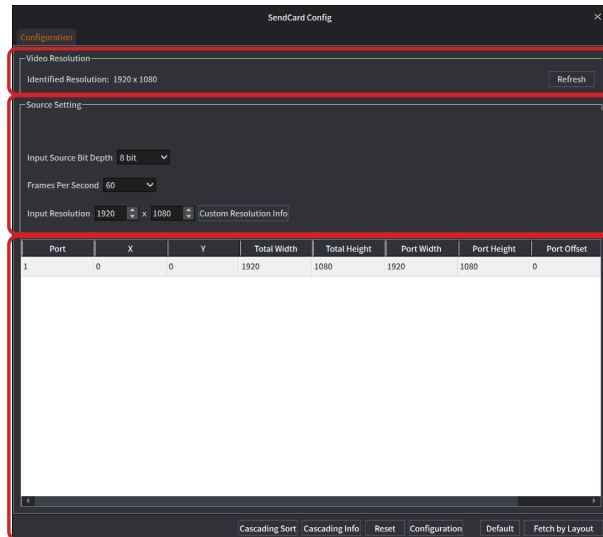
3 When the system boards are detected, select the target system board and then click [6620 Config].



4 Configure the resolution settings for input and output video.

Enter all of the values appropriately, and then click [Configuration] to reflect the settings.

The settings cannot be configured if a video signal is not being input. Be sure to configure the settings while a video signal is being input.



[Video Resolution]

[Identified Resolution]: Displays the resolution of the currently input signal.

[Refresh]: Refresh the display of the [SendCard Config] screen.

[Source Setting]

[Input Source Bit Depth]: Set this to either 8 bit or 10 bit to match the input signal.

[Frames Per Second]: Set this to match the input signal frequency.

[Input Resolution]: Set this to match the resolution of the input signal.

Output resolution and display position

Set each value to match the resolution you want to output. When the cabinet editing area of the main screen is set appropriately, clicking [Retrieve Based Receiving Card Arrangement] will input the values automatically.

Item name	Description
[X], [Y]	Set the position of the video display output by one system board.
[Total Width], [Total Height]	Set the output resolution. Normally, set the total resolution of the TL-55LV12A to be used.
[Port Width], [Port Height]	Set the resolution for output by one system board.
[Port Offset]	Set the position of the video display output by one system board.

[Reset]: Redisplay the video.

[Configuration]: Reflect all of the settings in the device.

[Default]: Return the values for the output resolution and display position settings to the initial values.

[Fetch by Layout]: Input the values for the output resolution and display position settings automatically while referring to the cabinet editing area of the main screen.

Be sure to set the cabinet editing area appropriately before using this item.

[Cascading Sort]: Assign IDs to the system boards when multiple system boards are daisy chained together via LAN connections.

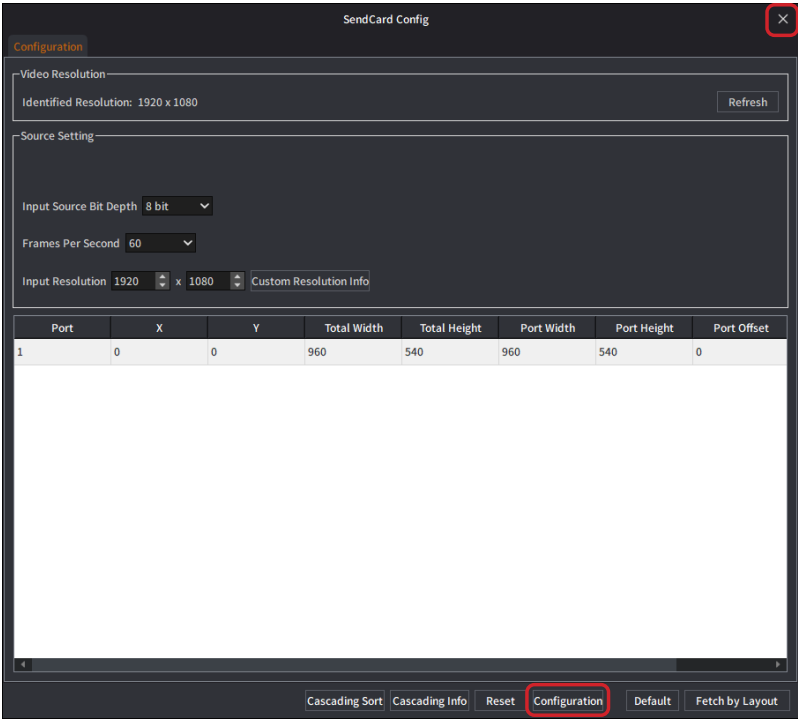
[Cascading Info]: Displays the IDs assigned in [Cascading Sort] and the software version of the device.

Operation

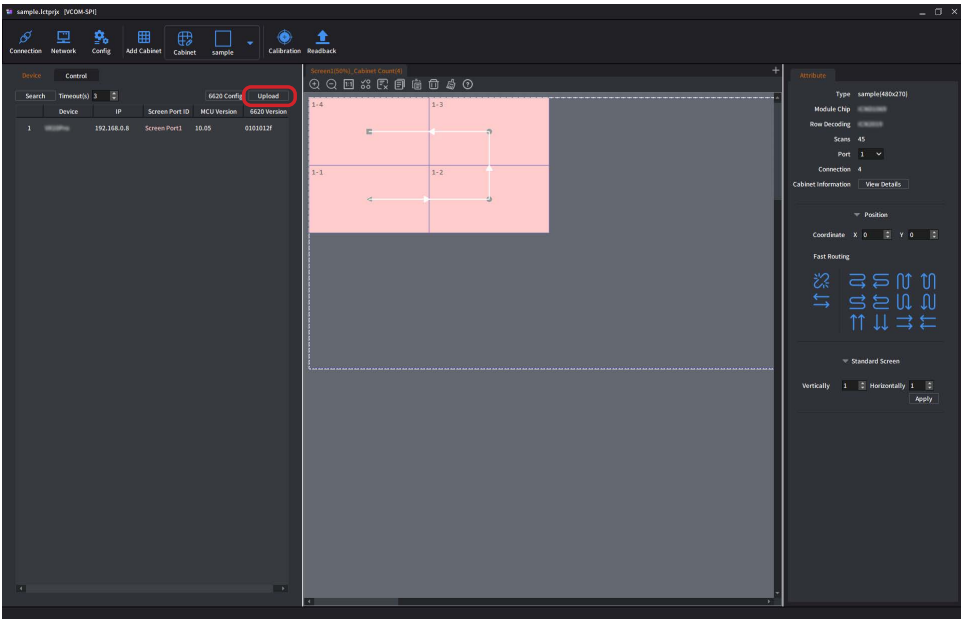
For example, when displaying 1920 × 1080 video at 60 Hz on the full screen of a 55-inch display, configure the settings as follows.

Setting item	Setting value
Input Source Bit Depth	8 bit
Frames Per Second	60
Input Resolution	1920 × 1080
Output resolution and display position	Port: 1, X: 0, Y: 0, Total Width: 960, Total Height: 540, Port Width: 960, Port Height: 540, Port Offset: 0

When the settings are finished, click [Configuration] and then click  to close this screen.

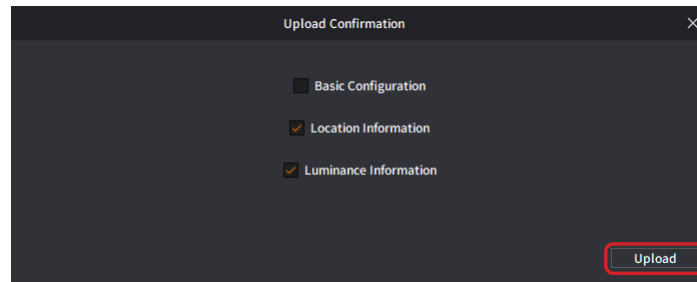


5 Click [Upload].



6 Click [Upload] without selecting the [Basic Configuration] check box.

- Do not select the [Basic Configuration] check box except when changing the setting of the input signal frequency.



The items with selected check boxes are sent to the device and saved so that the setting values are not restored when the power is turned off and then back on.

If the power is turned off and then back on without performing this operation with [Upload], the setting value of each item will be restored to that before the power was turned off and then back on.

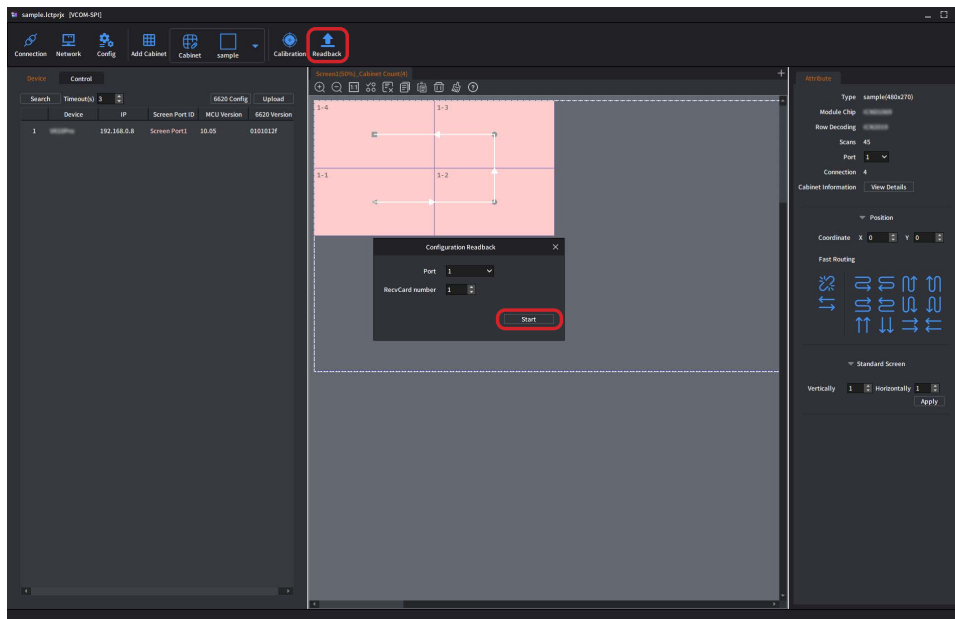
- [Basic Configuration]: Save each of the LED module IC setting values and LED chip current setting values to the device.
Use this only when changing the input signal frequency. For details, refer to “Changing the Input Signal Frequency” (page 20).
- [Location Information]: Save the cabinet connection settings in the cabinet editing area on the main screen to the device.
- [Luminance Information]: Save the current brightness settings that were configured in “Controlling the Device” (page 22) to the device.

Changing the Input Signal Frequency

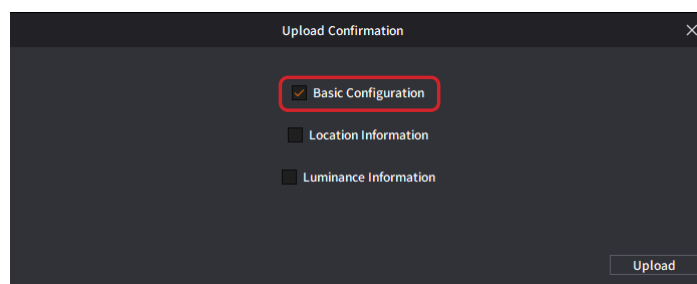
When changing the input signal frequency, the cabinet data file must be read before uploading is performed. If the input signal frequency is changed without reading the cabinet data file, the video will not be displayed properly.

- 1 Click [Readback] while a video signal is being input.
- 2 Click [Start] without changing the values of [Port] and [RecvCard number].

The cabinet data file (extension: .fsysx) is saved to the computer.

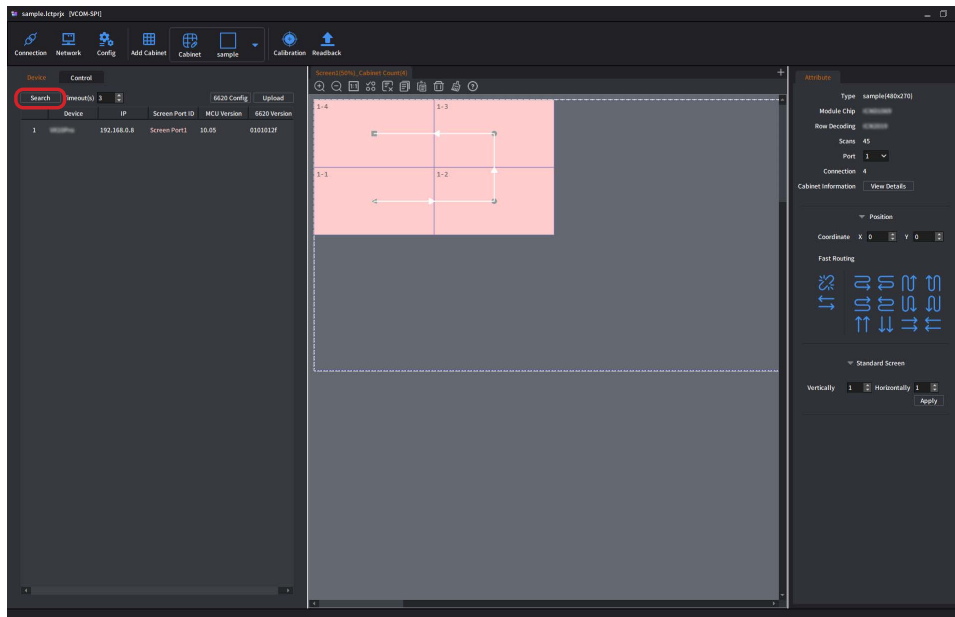


- 3 Restart LED Manager LV and then select [New Project] and create a new project file while referring to “Starting the Software” (page 8).
 - If you use [Open Project], the cabinet data saved from the source and the cabinet data saved in the previous step will coexist in the project file. Since this can easily lead to a data selection mistake, we recommend using [New Project].
- 4 Use the cabinet data file saved to the computer to create the same layout as the source panel layout while referring to “Setting the Cabinets and Video” (page 13).
- 5 Change [Frames Per Second] to the frequency you want to set (50 Hz / 60 Hz) in the input video settings of step 4 (page 17) in “Cabinet Connection Settings” and then click [Configuration] to reflect the setting.
- 6 Change the signal input to the device to the frequency (60 Hz / 50 Hz) you want to set.
- 7 Click the [Upload] button on the main screen, select only the [Basic Configuration] check box on the displayed screen, and click [Upload].



Checking the Device Information

Click [Search]. The devices on the same network as your computer are displayed in a list.

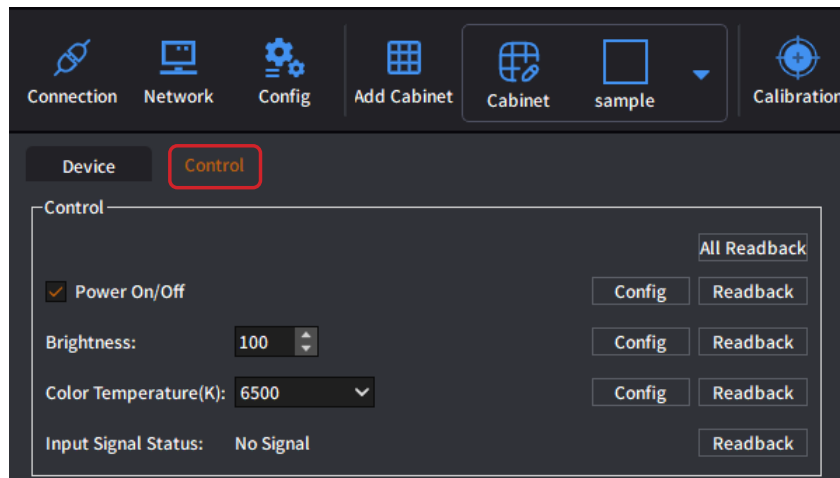


In this screen, you can check the following information of each device.

Item	Description
Device	Displays the name of the device. Display the serial number and model name of the system board by aligning the mouse cursor.
IP	Displays the IP address of the device. Display the IP, subnet mask, and gateway information by aligning the mouse cursor.
Screen Port ID	Displays the port number.
MCU Version	Displays the version of the micro control unit (MCU) installed on the system board.
6620 Version	Displays the version of the display controller installed on the system board.
Run time	Display the run time of the device by right-clicking the device and then selecting [Get runtime] in the displayed menu.
Restart	Restart the system board by right-clicking the device and then selecting [Restart] in the displayed menu.

Controlling the Device

Select the device you want to control from the device list and then click the [Control] tab.



■ Displaying all setting values

If you click [All Readback], the values of the settings that are configured for the device are all displayed.

■ Power control

If you click [Readback] of [Power On/Off], the power status of the device is obtained.

Each of the following operations can be performed by selecting or clearing the [Power On/Off] check box.

- When the [Power On/Off] check box is selected, the power-on state is indicated. The power of the device can be turned on by clicking [Config].
- When the [Power On/Off] check box is cleared, the power-off state is indicated. The power of the device can be turned off by clicking [Config].

■ Brightness control

In [Brightness], change the adjustment value within the range of 0 to 100, or enter a value directly. A lower value produces a darker result, and a higher value produces a brighter result.

If you click [Readback], the brightness value that is configured for the device is displayed.

■ Color temperature setting

Select the color temperature with the [Color Temperature(K)] list box. Select one of 4000, 6500, 9300, and 10700.

If you click [Readback], the value that is configured for the device is displayed.

■ Input signal state

If you click [Readback], the state of the video signal input into the device is displayed.

[Valid signal]: There is a valid signal.

[No signal]: There is no signal.

[Unsupported signal]: There is an unsupported signal.

Setting the Network Function

■ Network settings (for USB Type-C connection only)

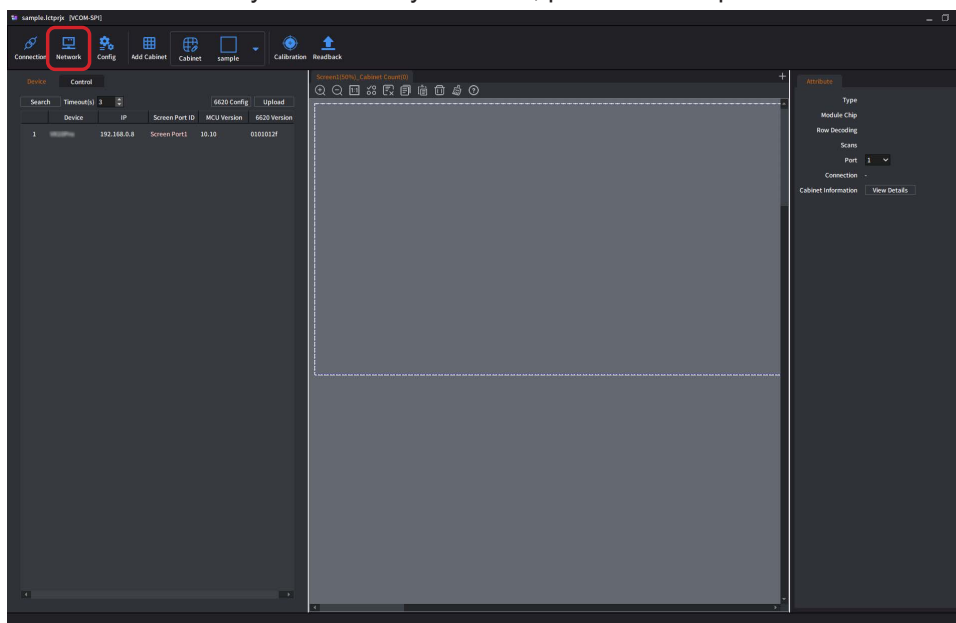
Use the following procedure to configure the device IP address and other LAN settings and the network function settings.

1 Use the USB A-C cable supplied with the device to connect the computer to the device.

2 Click [Network] in the main menu.

[Network] is displayed only when a computer is connected to the USB Type-C port of the device.

Proceed to the next step to set the user name and password only when using the device with a network connection for the first time. If they have already been set, proceed to step 4.



3 Set the user name and password for access to the device via the network.

[User Name]: Enter the user name to use.

[Password]: Enter the password to use.

[Password (Retype)]: Re-enter the password to use again.

When you click [Change] to save the user information, the [Network] screen appears.

Note

- Under the factory default settings, the user name is set to “dispadmin”.
- Specify the user name and password according to the following conditions.
 - Only single-byte alphanumeric characters can be used for the user name.
 - The maximum number of characters that can be specified for the user name and password is 16.
- Set eight or more characters including at least three of the following four types of characters for the new password.

Character type	Characters that can be used
Uppercase letters	A to Z
Lowercase letters	a to z
Numbers	0 to 9
Special characters	~ ! @ # \$ % & * () _ + { [] } < > . , / ? ' " & # \$ % & * () _ + { [] } < > . , / ? ' " &

- The user name and password must be entered each time LED Manager LV is started.
 - To initialize the set user name and password, load the project file downloaded from the website for this software, and create the project again. For details on downloading, refer to the following URL.
<https://docs.connect.panasonic.com/prodisplays>
- A project can be loaded by clicking [Open Project] on the [Function] (function selection) screen (page 8).

4 Configure the network settings of the device.

The screenshot shows the 'Network' configuration window. It features a title bar with the text 'Network' and a close button. The window is divided into two main sections. The top section, titled 'Device', contains a 'Network Control' toggle switch set to 'Enable', and three buttons: 'Config', 'Readback', and 'Reset'. The bottom section, titled 'IP Config', contains three input fields for 'IP' (192.168.0.9), 'Subnet Mask' (255.255.255.0), and 'Gateway' (192.168.0.1), each with a corresponding 'Config' or 'Readback' button, and a 'Reset' button at the bottom.

Network

Device

Network Control: ☒ Enable

Config Readback

Reset

IP Config

IP 192.168.0.9

Subnet Mask 255.255.255.0

Gateway 192.168.0.1

Config Readback

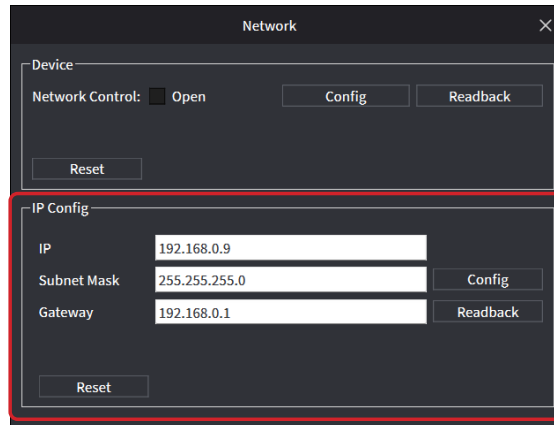
Reset

[Network Control]: To enable the network function, select the [Enable] check box and then click [Config]. If the [Enable] check box is cleared, the network function is disabled.

Note

- To check the setting (Network Control) of [Device] already set for the device, click [Readback].
- To return the setting (Network Control) of [Device] to the factory default, click [Reset].

5 Configure the LAN settings from [IP Config].



The screenshot shows a 'Network' configuration window. It has two main sections: 'Device' and 'IP Config'. The 'Device' section includes a 'Network Control' toggle set to 'Open', and 'Config' and 'Readback' buttons. The 'IP Config' section, which is highlighted with a red box, contains input fields for 'IP' (192.168.0.9), 'Subnet Mask' (255.255.255.0), and 'Gateway' (192.168.0.1). To the right of these fields are 'Config' and 'Readback' buttons. A 'Reset' button is located at the bottom of the 'IP Config' section.

Specify the following items. Enter all of them in IPv4 format.

[IP]: Input the IP address.

[Subnet Mask]: Input the subnet mask.

[Gateway]: Input the default gateway.

6 Click [Config] to confirm the entered information.

Note

- To check the settings (LAN setting information) of [IP Config] already set for the device, click [Readback].
- To return the settings (LAN setting information) of [IP Config] to the factory defaults, click [Reset].

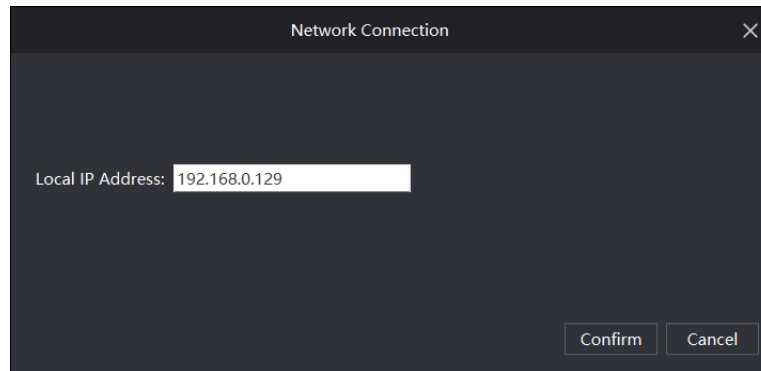
7 After you have configured the network settings, use the LAN cable to connect the computer to the device.

For details on connecting this software and a device, refer to “Network connection” (page 26).

■ Network connection

To connect to a device, use the following procedure to set the IP address of the PC with this software installed. If you will not use the network function, this procedure is not necessary.

- 1** Click [Connection] in the main menu.
- 2** Enter the IP address of the computer to be connected to the device in IPv4 format.



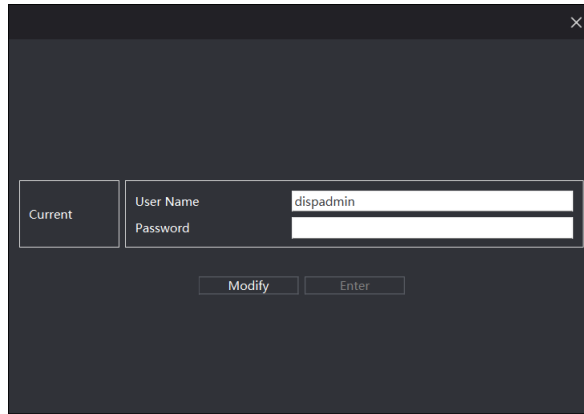
- 3** Click [Confirm].
The LAN connection starts.
If you click [Cancel] during input, the entered information will be discarded and the screen will close.

Note

- If the connection destination computer has two or more network adapters, enter the IP address of the network adapter connected to the device.

■ When changing the user name and password

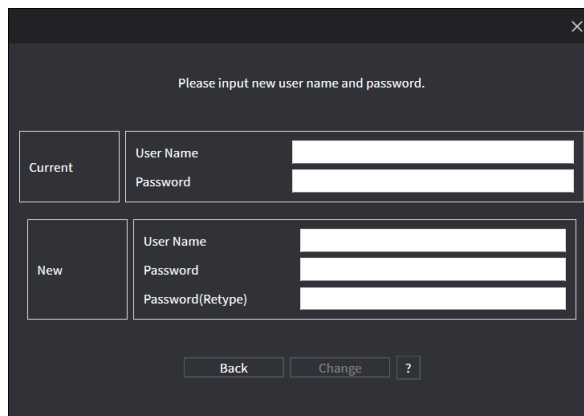
- 1 Turn on the power of the device and then connect the computer to the device via a USB connection.
- 2 Start the application, and click [Network] in the main menu.
- 3 Enter the user name and password before the change in [User Name] and [Password] of [Current] respectively and then click [Modify].



A screenshot of a dark-themed dialog box with a close button (X) in the top right corner. The dialog is titled 'Current' on the left. It contains two input fields: 'User Name' with the text 'dispadmin' and 'Password' which is empty. Below the input fields are two buttons: 'Modify' and 'Enter'.

Note

- If you enter the password before the change several times incorrectly, input restrictions will be applied.
- 4 The [New] group is additionally displayed. Enter a new user name and password in [User Name] and [Password] respectively, enter the same password again in [Password (Retype)], and click [Change].



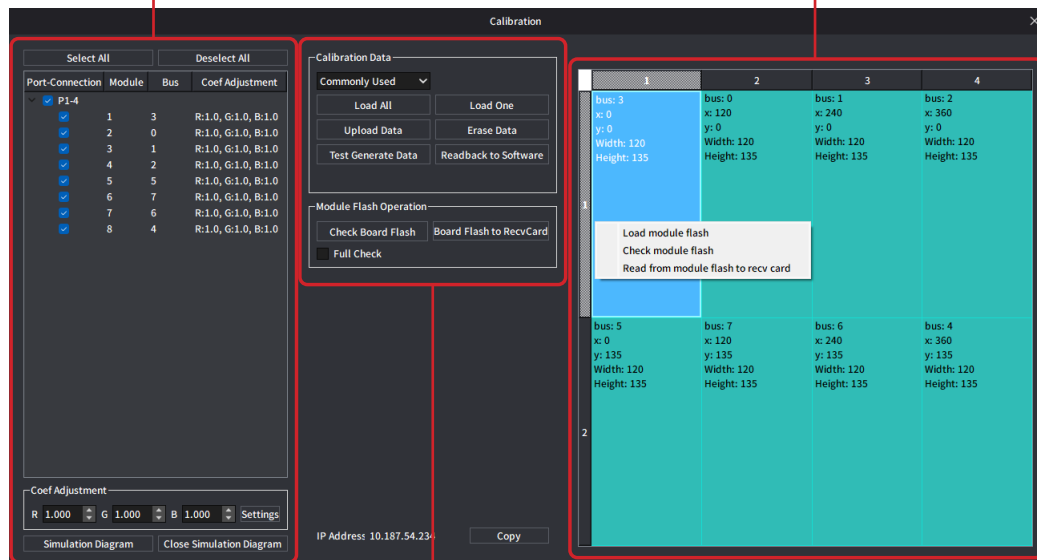
A screenshot of a dark-themed dialog box with a close button (X) in the top right corner. The dialog is titled 'Please input new user name and password.' at the top. It contains two sections: 'Current' and 'New'. The 'Current' section has 'User Name' and 'Password' input fields. The 'New' section has 'User Name', 'Password', and 'Password(Retype)' input fields. Below the input fields are three buttons: 'Back', 'Change', and a button with a question mark (?) icon.

Maintenance

The following operations are possible in the calibration screen used to read calibration data and adjust the colors.

LED module color adjustment area

LED module selection area



Control area

■ Module color adjustment area

- [Select All]: Select all LED modules.
- [Deselect All]: Deselect all LED modules.
- [Port-Connection]: Displays the cabinets with LED modules installed and the selected LED modules.
- [Module]: Displays the LED module numbers. The numbers 1 to 8 are assigned in order from the top left inside the cabinet.
- [Bus]: Displays the bus numbers assigned in the driver IC of the LED modules. This is a number used in the internal register that is assigned separately from the LED module number.
- [Coef Adjustment]: Displays the RGB setting values of each LED module.
- [R]: Set the gain of R to 0 to 1.000.
- [G]: Set the gain of G to 0 to 1.000.
- [B]: Set the gain of B to 0 to 1.000.
- [Settings]: Reflect the RGB gain setting values in the LED modules selected in [Port-Connection].
- [Simulation Diagram]: Display a simulation screen with the adjustment value of Coef Adjustment applied.
- [Close Simulation Diagram]: Close the open simulation screen.

■ Control area

[Calibration Data]

[Commonly Used/(Default)]: Use only the commonly used calibration data.

[Load All]: Load the calibration data of all cabinets from a file into the tool.

[Load One]: Load the calibration data of one LED module from a file into the tool.

[Upload Data]: Write the calibration data loaded into the tool to the hub board.

[Erase Data]: Erase the calibration data saved to the hub board.

[Test Generate Data]: Generate data for simulation screen display in the tool.

[Readback to Software]: Load the calibration data saved in the hub board into the tool.

[Module Flash Operation]

[Check Board Flash]: Check whether flashing of the LED module is performed normally.

[Board Flash to RecvCard]: Load the calibration data saved in the LED module to the hub board.

■ LED module selection area

Displays the LED modules in 27.5-inch units. This cannot be used when replacing all of the LED modules. When replacing some of the LED modules, eight LED modules in the selected 27.5-inch cabinet are displayed. Right-clicking allows you to select control for the selected LED module.

[Load module flash]: Load the calibration data of the selected LED module from a file into the tool.

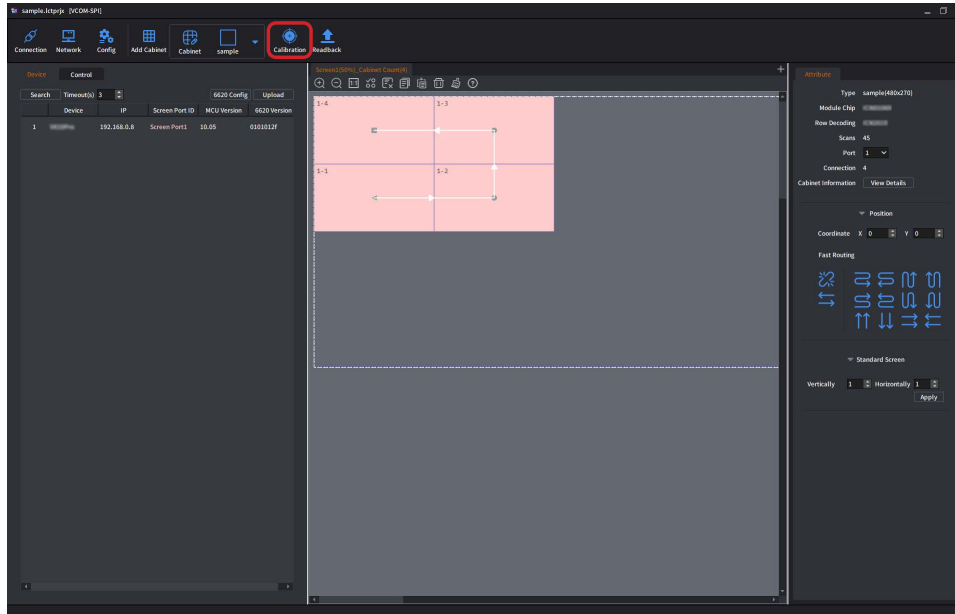
[Check module flash]: Check whether flashing of the selected LED module is performed normally.

[Read from module flash to recv card]: Load the calibration data saved in the selected LED module into the hub board.

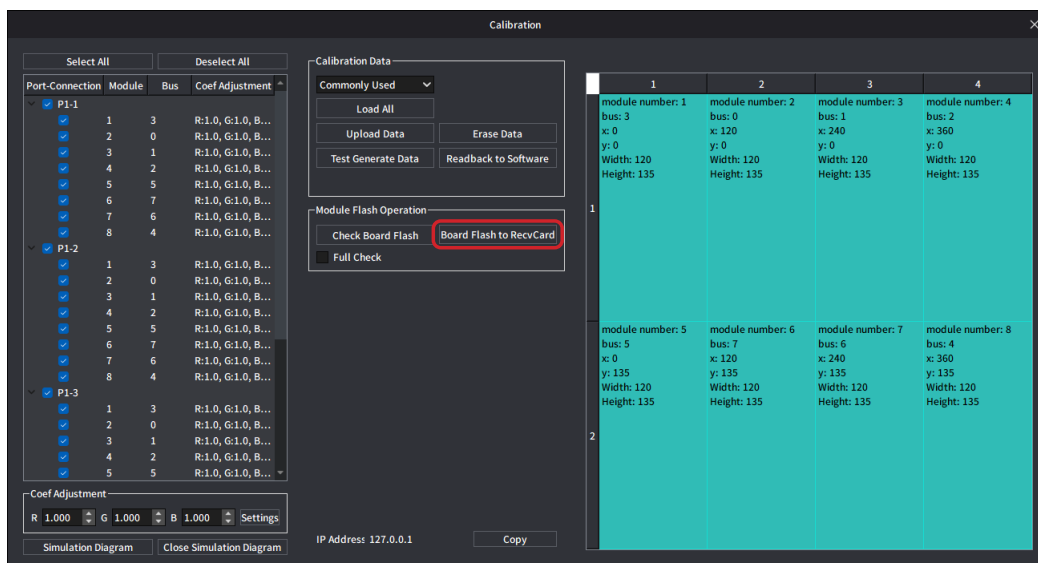
■ When replacing all LED modules

Use the following procedure to read and save the calibration data of all LED modules.

1 Click [Calibration] in the main menu.



2 Click [Board Flash to RecvCard] and read and save the calibration data of all LED modules.



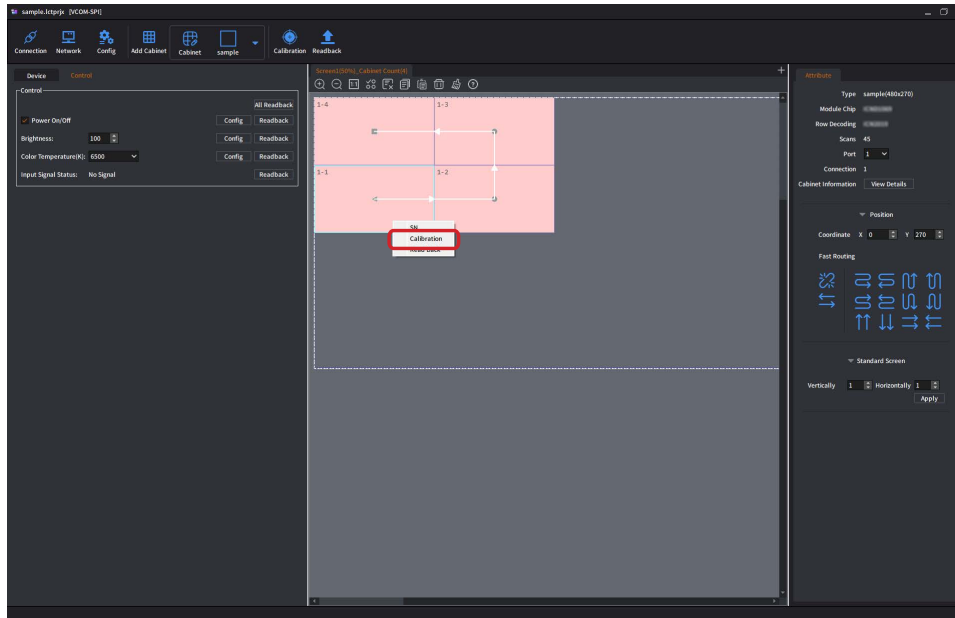
Note

- The processing will take a while. Do not turn off the power of the device during processing.

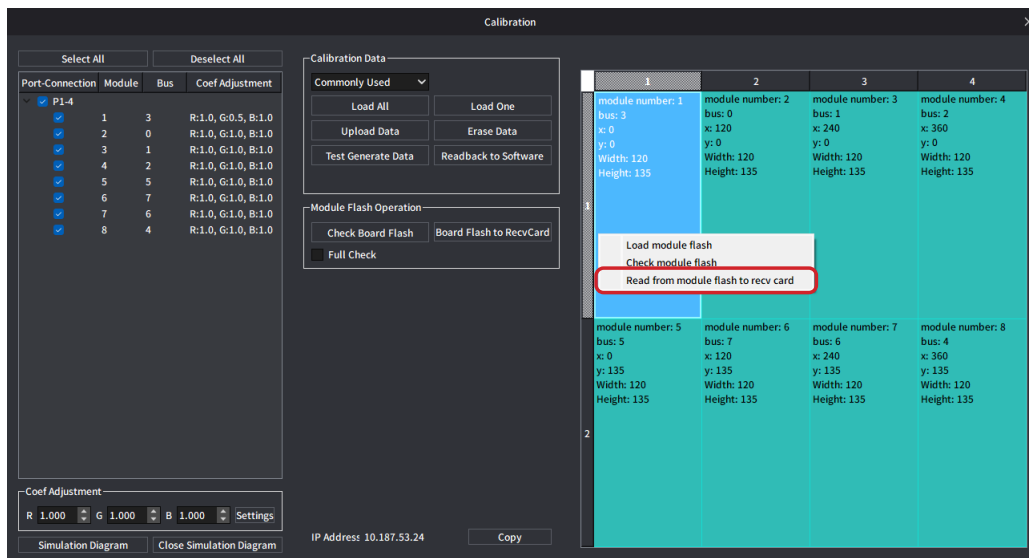
■ When replacing some LED modules

Use the following procedure to read and save the calibration data of only the LED modules to be replaced.

- 1 Right-click the cabinet corresponding to the LED modules to be replaced and then click [Calibration] in the displayed menu.



- 2 Right-click an LED module for which you want to read the data in the [Calibration] screen, click [Read from module flash to recv card] in the displayed menu, and then read and save the calibration data of the LED module.



Note

- The processing will take a while. Do not turn off the power of the device during processing.

■ When changing the colors of an LED module

Use the following procedure to change and save the colors of an LED module.

Note

- When reading calibration data from an LED module, the reading time will be longer the greater the number of pixels to be read. The reading time can be shortened by making adjustments individually.

1 Configure the settings as follows.

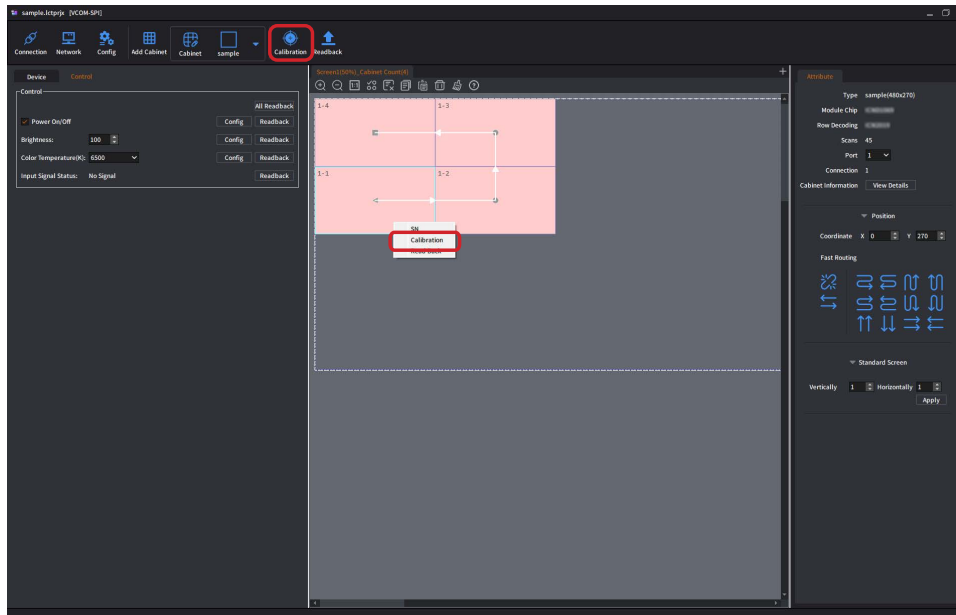
- ① Set the brightness of the device to 100% while referring to “Controlling the Device” (page 22).
- ② Match the resolutions of the input video and output video while referring to the resolution settings for input and output video in “Cabinet connection settings” (pages 15 to 19).
For example, we recommend one of the following when using one 55-inch display.
1) Input resolution of 1920 × 1080 and output resolution of 1920 × 1080
2) Input resolution of 960 × 540 and output resolution of 960 × 540
- ③ Check that the scale setting values of the computer and device are both set to 100% in the Display settings screen of the computer.

In Windows 11, the settings can be checked by right-clicking the desktop screen, selecting Desktop settings, and then selecting the respective device and checking Scale.

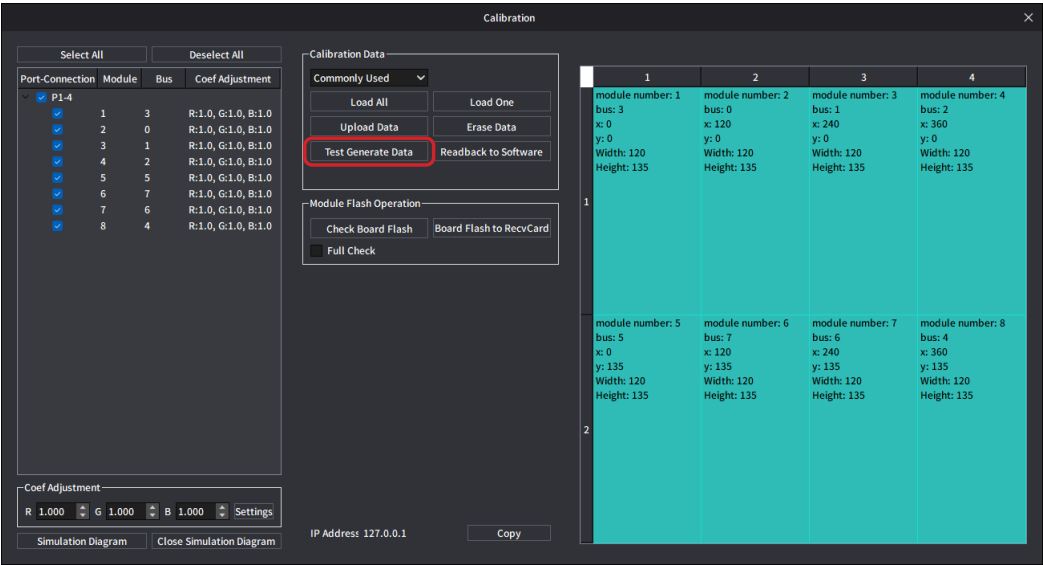
Note

- If you display the simulation screen without performing ①②③, the sizes of the simulation screen and device screen will not match, and it will be unable to display appropriately.

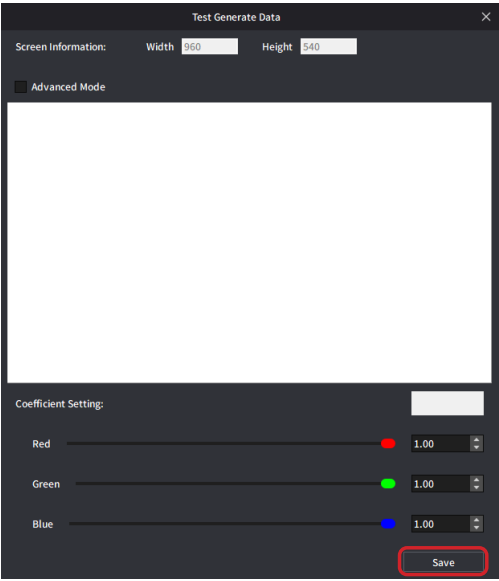
2 Click [Calibration] in the main menu. Alternatively, right-click the cabinet corresponding to the LED modules to be replaced and then click [Calibration] in the displayed menu.



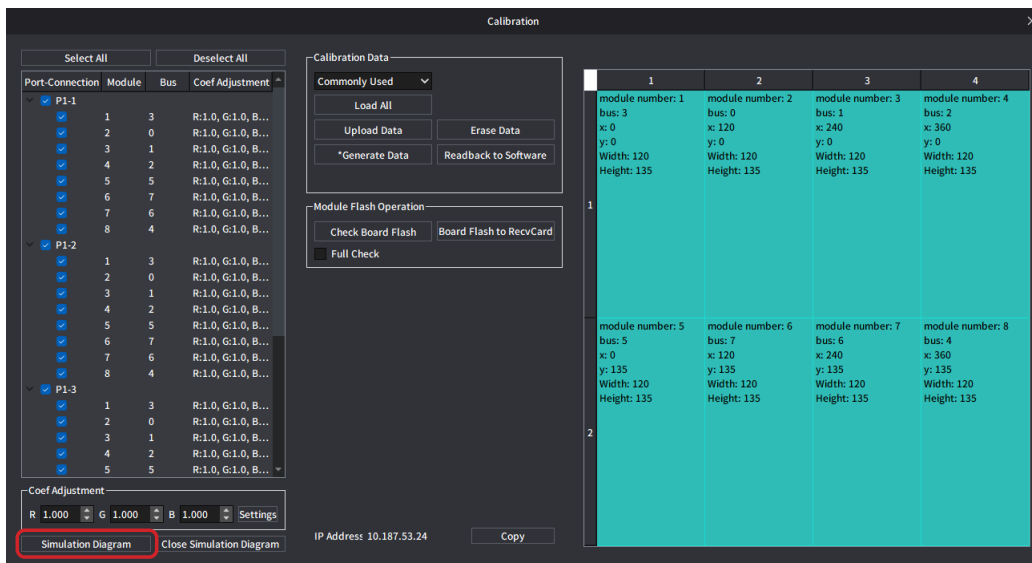
3 Click [Test Generate Data].



4 Click [Save] without changing the values of [Red], [Green], and [Blue] and then click to close the window.



5 Click [Simulation Diagram].



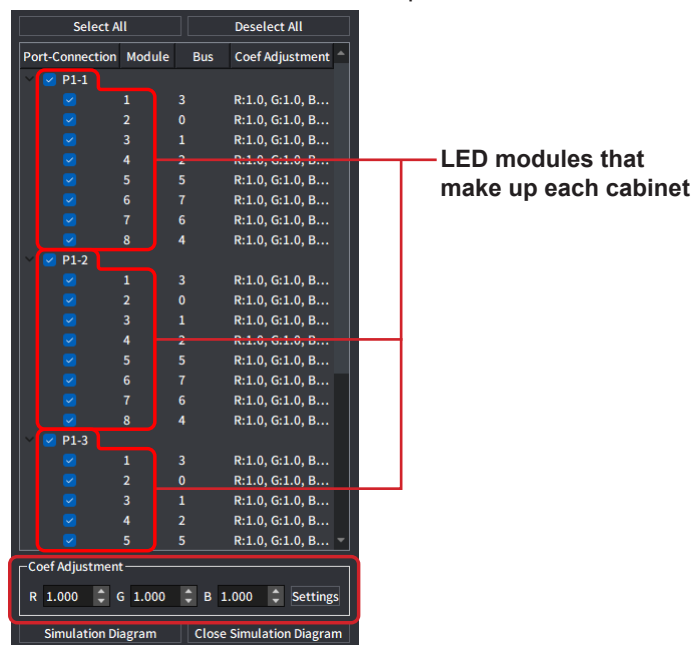
6 Move the simulation screen displayed on the computer to the device you want to adjust and align the frame of the simulation screen with the display area of the device.

If the frame of the simulation screen does not support the size of the LED module, check whether the resolution setting is dot-by-dot or whether the scale setting of the device is set to 100%.

7 Change the setting values of the LED modules with the check boxes selected and then click [Settings].

You can select the LED modules to adjust by selecting the check boxes of the cabinets and their modules displayed in the list on the left side of the [Calibration] screen. The colors of the LED modules can be adjusted by changing the [R], [G], and [B] values of [Coef Adjustment].

You can check the corresponding cabinet numbers in the cabinet connection settings (page 15) in the main menu. For example, “P1-1” in the list indicates the cabinet of 1-1 in the cabinet connection settings. Numbers 1 to 8 below that P1-1 indicate the LED modules that make up the cabinet of 1-1.

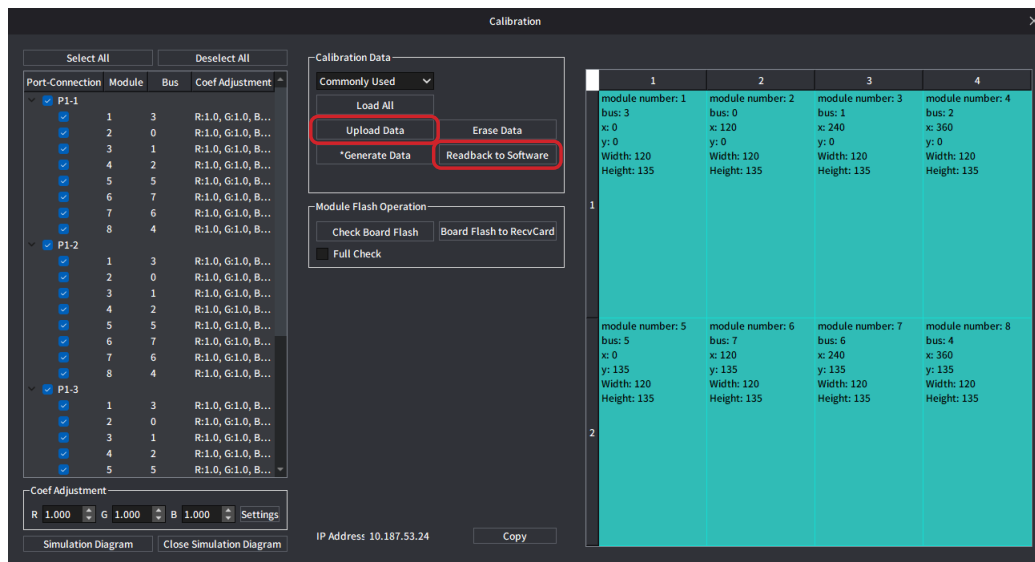


8 Click [Readback to Software] to retrieve the calibration data saved in the LED module to this software.

Note

- After you execute [Readback to Software], the brightness value will be initialized to 100 due to the specifications.
- When using a setting value other than 100, set the original brightness value again after execution.
- The processing will take a while. Do not turn off the power of the device during processing.

9 Click [Upload Data] and write the set values to the device.



Note

- The processing will take a while. Do not turn off the power of the device during processing.
- To return the new colors to the original colors, load and save the calibration data from the LED modules while referring to “When replacing all LED modules” (page 30) and “When replacing some LED modules” (page 31).

Exiting the Software

To exit the software from the [Function] (function selection) screen, click [Exit].

Alternatively, click  at the top right of the screen.

Miscellaneous

Troubleshooting

Check the following points once more before requesting repair.

The device is not recognized.

- Has the device's power been turned on?
- Is the device supported by this software? ➡ "Devices Supported" (page 6)
- Have the units been connected properly? ➡ "Connecting a Device and Computer" (page 7)
- Has the device's network been set up correctly? ➡ "Network settings (for USB Type-C connection only)" (page 23)

No connection can be made between my device and my computer

- Has a Windows Defender firewall or other firewall been detected?

If a Windows Defender firewall has been detected

Click [Control Panel] → [System and Security] → [Windows Defender Firewall] → [Allow an app or feature through Windows Defender Firewall] to see if this program is on the list.

Add the software to [Allow an app or feature through Windows Defender Firewall].

Adding procedure

1. Click [Control Panel].
2. When the <Control Panel> appears, click [System and Security] → [Allow an app through Windows Firewall].
3. When <Allow apps to communicate through Windows Firewall> appears, click [Change settings] → [Allow another app...].
4. When the <Add an app> dialog box appears, select [LED Manager LV] and click [Add].
5. [LED Manager LV] appears in the [Allowed apps and features] column.
6. Select the [Private] or [Public] 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 Firewall>.
8. This software will now be added to the Windows Defender firewall's exception list.

If non-Windows Defender firewall has been detected

Are any firewall-containing applications installed?

If any applications which contain firewalls are installed, a connection may not be established.

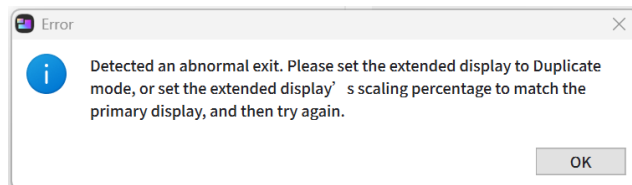
(The firewall function may activate without launch of the application if the application has already been installed.)

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.

An error is displayed.

When the following error is displayed



If the desktop screen of the computer is displayed extended to an external display, set the setting value of [Scale] to 100% for both the computer display and external display in the display settings screen of the computer.

Furthermore, exit any other applications.

Control Commands via a LAN

A device can be controlled by commands via a LAN.

To send and receive commands via a LAN, you need to set a network password. (page 23)

In addition, [Network Control] needs to be enabled. (page 24)

■ Connection method

1 Obtain the IP address and port number of the device and then send a request for a connection to the device.

- Obtain the IP address from [IP] in the [Network] settings.
- Set “5001” for the port number.

2 Check the response from the device.

	Data part	Blank	Mode	Blank	Random number part	Terminal symbol
Command example	“NTCONTROL” (ASCII character string)	‘ ’ 0x20	‘2’ 0x32	‘ ’ 0x20	“zzzzzzzz” (ASCII character string)	(CR) 0x0d
Data length	9 bytes	1 byte	1 byte	1 byte	8 bytes	1 byte

3 Generate a 64-byte hash value from the following data using the SHA-256 hash algorithm.

Data	Description
xxxxxx	User name
yyyyy	Password
zzzzzzzz	8-byte random number obtained in step 2

■ Command send method

Send commands in the following command format.

● Data sent

Header			Data part	Terminal symbol
Hash value (See "Connection Method".)	'0' 0x30	'0' 0x30	Control command (ASCII character string)	(CR) 0x0d
64 bytes	1 byte	1 byte	Undefined length	1 byte

● Data received

Header		Data part	Terminal symbol
'0' 0x30	'0' 0x30	Control command (ASCII character string)	(CR) 0x0d
1 byte	1 byte	Undefined length	1 byte

● Error responses

Header	Terminal symbol
"ERR1" Undefined control command	(CR) 0x0d
"ERR2" Outside parameter range	
"ERR3" Busy state or acceptance not possible period	
"ERR4" Timeout or acceptance not possible period	
"ERR5" Incorrect data length	
"ERRA" User ID or password mismatch	
"ER401" Error occurred during command processing	
4 bytes	1 byte

Note

- When using commands, set [STANDBY MODE] of [Config] in the main menu to [Network].
Commands are disabled during standby when [STANDBY MODE] is set to [Eco].
- Only the power-on command and power status query command are enabled during standby when [STANDBY MODE] is set to [Network].
- Send the next command after the command response has been received from the device.
- When sending multiple commands, leave an interval of at least one second before the next command.
 - After sending the power-on command, send the next command after leaving an interval of at least 30 seconds and checking that the power of all devices has turned on and video is displayed on the screen.
 - After sending the power-off command, send the next command after leaving an interval of at least 30 seconds.
- When checking the settings with this software, change the setting values of the device using commands before checking the settings with the software.
If the settings have been changed using commands when the settings are displayed with this software, load the values of the target settings with the software again.
- For fine adjustments of video and other settings, use the remote control or this software.
- Do not perform control or status queries simultaneously using both commands and the remote control or this software.

■ Control commands

These commands are for controlling a device with a computer.

● Command list

Commands	Parameters	Control description
PON	—	Power “ON”
POF	—	Power “OFF”
VPC	BLK ***	Brightness 000/.../100
VPC	TMP ***	Color temperature 040/065/093/107

Commands	Parameters	Response description
QPW	—	Power query 0: Standby 1: Power on
QPC	BLK	Brightness query 000/.../100
QPC	TMP	Color temperature query 040/065/093/107
QST	SGS	Input signal present/absent query 0: Supported signal input present 1: No input 2: Unsupported signal input present

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