LG
Life's Good

USER MANUAL

SuperSign White Balance

Please read this manual carefully before operation and retain it for future reference.

http://partner.lge.com

CONTENTS

SuperSign White Balance

The SuperSign White Balance is a software to control the White Balance between the Videowall Signage monitors (or the normal Signage monitors) developed by LG Electronics with its own technology. You can control in steps the RGB and backlight settings of the monitors connected using a separate calibration sensor via SuperSign White Balance, thereby adjusting the White Balance.

Videowall Signage Monitor

The Videowall Signage Monitor of LG Electronics has an embedded Ethernet network interface card to enable users to control the settings of each monitor connected via a short-range network or to control a monitor via an RS-232C serial port.

Please refer to the [Information] > [Release Note] menu of the software to see which Signage Monitor model supports the SuperSign White Balance software.

NOTE

- The supported models may be added for the SuperSign White Balance software. If the model of the monitor registered by the user differs from the actual monitor model, a malfunction may occur, so please register the accurate monitor model.

CAUTION

- In Windows 7, among the options of the **Control Panel > Shape and Personal Settings > Display**, if you select the **Medium (M)-125%** or **Large (L)-150%** and run the program, some screens may not be normally displayed.

System Requirements

Hardware

RAM: 4 GB or higher

Disk: 400 MB or higher

Software

.Net Framework 4.5

Visual Studio C++ (2013) redistributable package

System

Windows Platform

For Windows 7, Professional or higher

For Windows 8, Professional or higher

* Some Windows OS may not normally display a specific GUI screen.

Features

User-friendly automatic calibration for monitors

You can conveniently adjust the White Balance of the monitor as you wish with just a few settings.

Manual calibration for precise adjustment

Thanks to its intuitive UI, you can easily perform a minute precise adjustment at an expert level.

Camera calibration

You can conduct a simultaneous calibration for multiple Videowall monitors already installed by a simple method via a Wizard-type UI using a camera that supports the SuperSign White Balance software. (3 X 3 at the maximum)

SuperSign White Balance Configuration

The SuperSign White Balance configuration refers to setting the connection of the SuperSign White Balance software, which is a White Balance calibration program, and a Videowall Signage Monitor of LG Electronics. The connection setting of SuperSign White Balance supports the two methods below.

- LAN (Local Area Network) connection
- RS-232C serial communication

LAN Connection

This is a method to connect to a network by using a router such as a switch or a hub. Insert a network cable connected to the LAN to the Ethernet port of the Signage Monitor.

⚠ CAUTION

- If you simultaneously register a single monitor to multiple computers or manage a monitor while simultaneously running different versions of the software, it may not normally work.

How To Set IP Address of Network Monitor

After connecting the network cable, you need to set the IP of the Signage Monitor to complete the network connection. Below is how to set the IP of the monitor.

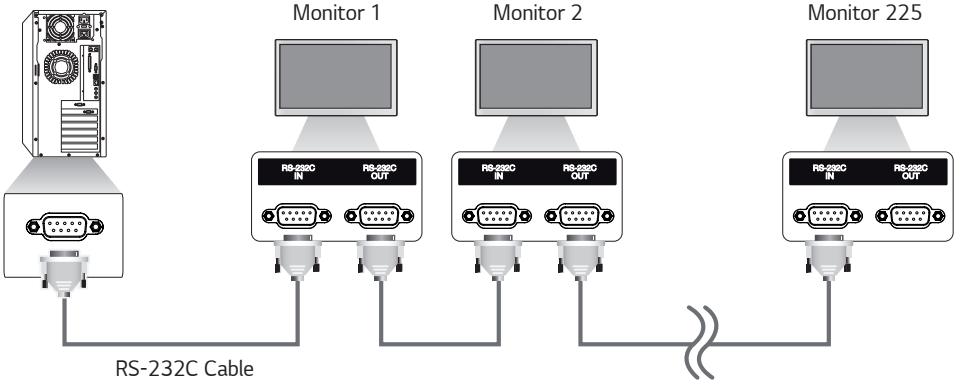
1 Press the **SETTINGS /** ⚙ button on the remote control.
2 Select [Advanced Setting].
3 Select [Network].
4 Select [Connect Wired Network (Ethernet)].

NOTE

- The LAN is a computer network that connects nearby regions including homes, offices, and schools into one unit.
- The menu screen display is an example to help users operate the product, so it may vary by models.
- The UI operation may vary by the model. Please refer to the User Manual of the product for details.

RS-232C Serial Communication

To enable communication via the RS-232C serial port, you need to directly connect a PC and a monitor with the SuperSign White Balance software using an RS-232C cable. Likewise, to connect one or more monitors, you need to connect a PC to the first monitor using an RS-232C cable and then connect the other monitors using an RS-232C cable as in the below figure.



⚠ CAUTION

- You can connect up to one thousand monitors using an RS-232C cable, but it is recommended to connect only up to 225 monitors considering the bandwidth of the RS-232C cable.
- The RS-232C cable may not be provided to some models.

Installation of SuperSign White Balance

Install the SuperSign White Balance software on a PC to be connected to the Signage monitor via a network or a serial cable. You can control the Signage monitor by using SuperSign White Balance installed on a PC.

How To Install SuperSign White Balance

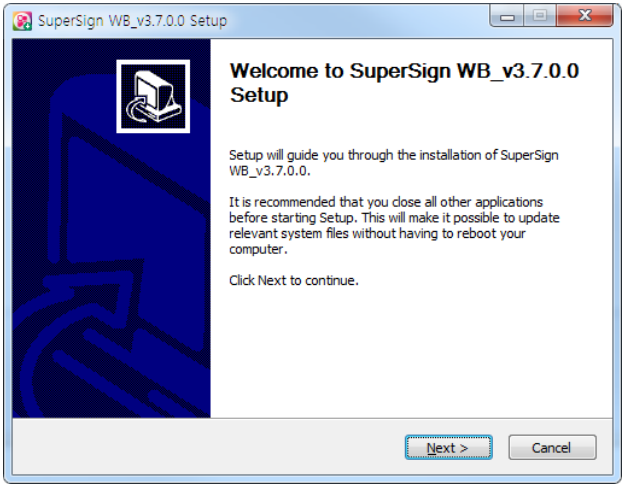
1 Run the Setup.exe file of SuperSign White Balance that you have downloaded.

2 When the Setup Wizard window appears, click [Next].

⚠ CAUTION

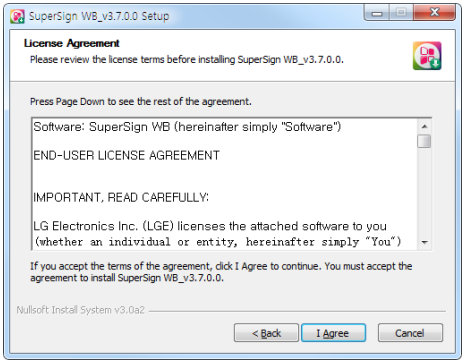
- If the below alert window appears while running the Setup.exe, first install .NET Framework 4.5 referring to the [How To Install .NET Framework 4.5], and then continue to install SuperSign White Balance.

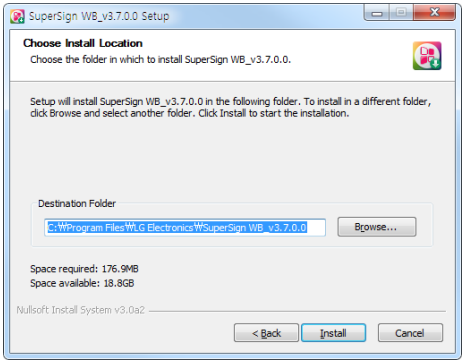
3 When the Setup Wizard window appears, click [Next].



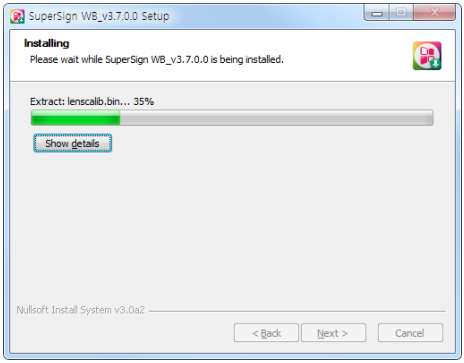
4 After you agree to the Terms of Use, click [I Agree]. Click the [Browse] button to change the default installation folder.

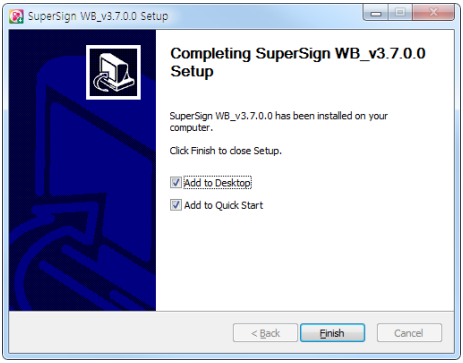
5 Click the [Install] button to proceed with the installation of the program.





6 When the installation is completed, click the [Finish] button.





How To Delete SuperSign White Balance

Remove SuperSign White Balance by selecting **Start** > **Settings** > **Control Panel** > **Add/Delete Program** > **SuperSign WB x.x**.

⚠ CAUTION

- If the installation is not done properly, or the program does not work after the installation, please go through the below processes.

How To Install .NET Framework 4.5

1. Download .NET Framework 4.5 from the below websites, and run it.
   https://www.microsoft.com/en-US/download/details.aspx?id=30653
2. Install it, and then reboot.

NOTE

- Conduct this process only for the PC that has no .NET Framework installed.

How To Install Visual Studio (2013) Redistributable Package

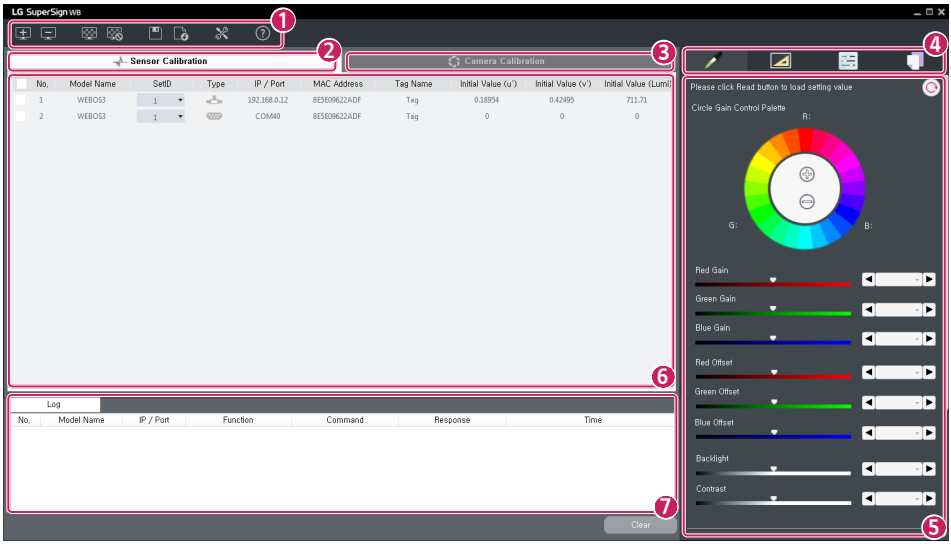
1. Download the Visual C++ (2013) Redistributable Package from the below website, and run it.
   https://www.microsoft.com/en-US/download/details.aspx?id=40784
2. Install it, and then reboot.

NOTE

- Conduct this process only for the PC that has no Visual Studio (2013) Redistributable Package installed.

Overview of SuperSign White Balance

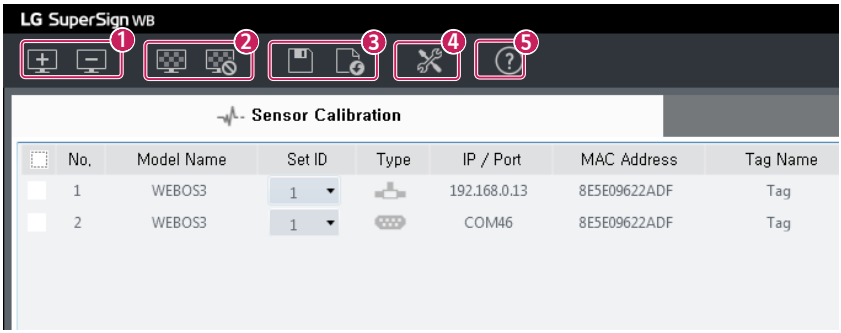
Take a look at overall features of the SuperSign White Balance software.



No.	Item	Description
1	**Menu**	Provides the basic menu used in SuperSign White Balance.
2	**Sensor Calibration tab**	This tab provides a menu to enable the user to do calibration by using a normal contact-type sensor. If you select it, the area of 4, 6 will turn into a menu that you can use a normal contact-type sensor.
3	**Camera Calibration tab**	This tab provides a menu to enable the user to do calibration by using a camera. The area of 4, 6 will turn into a menu to use camera calibration.
4	**Feature tab**	It provides the features in the form of a tab in accordance with the selected calibration mode.
5	**Control Panel**	You can view or adjust a detailed setting of the feature that you have selected in the Feature tab.
6	**Monitor Management area**	Provides information on the registered monitor or shows the Videowall configuration that you can set.
7	**Log tab**	Shows the results of executing the command.

Menu

Provides the basic features used in SuperSign White Balance and [Help].

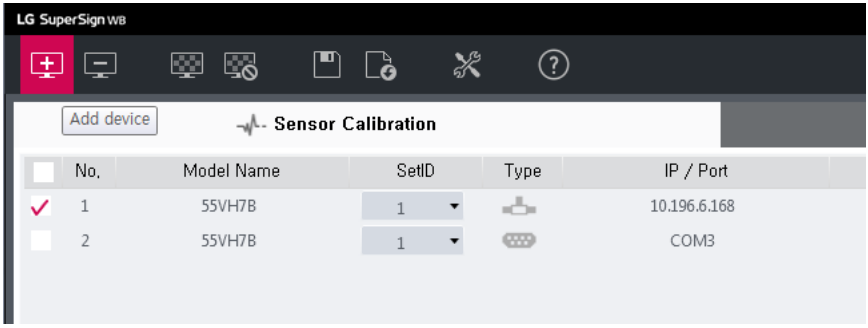


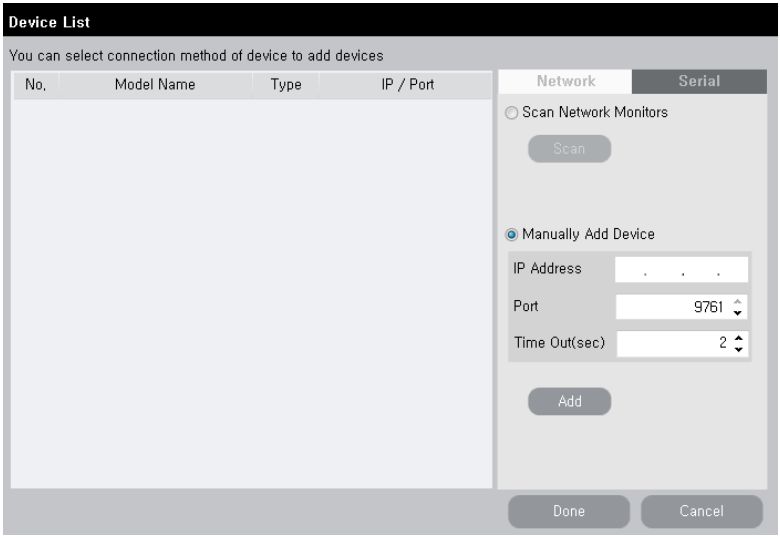
No.	Item	Description
1	**Add/Delete Device**	You can register or delete a monitor to be managed with SuperSign White Balance.
2	**Test Pattern On/Off**	You can display a specific pattern required for calibration on the screen of the selected monitor or remove the pattern from the screen.
3	**Save/Import Setting file**	Saves the current setting of the monitor as a file or opens the setting file.
4	**Option**	You can change the settings of SuperSign White Balance.
5	**Help**	You can check the version information and release note of SuperSign White Balance.

Management of Videowall Signage Monitor

How To Add Videowall Signage Monitor

Click the button on the top menu, and a window you can add a monitor will appear.



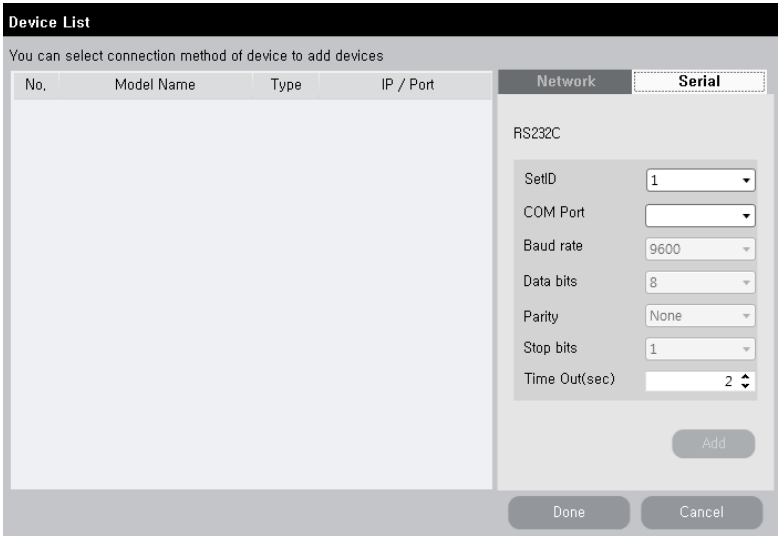


How To Add Signage Monitor Connected to Network

1 You can scan a network to add a monitor.

2 You can manually enter an address to add a monitor.

3 If a monitor to be added appears on a list on the left side, check if the information is correct, and click the [Done] button.



How To Add Videowall Signage Monitor Connected via Serial Port

1 Enter the relevant information and click the [Add] button and the monitor will be added according to the information.

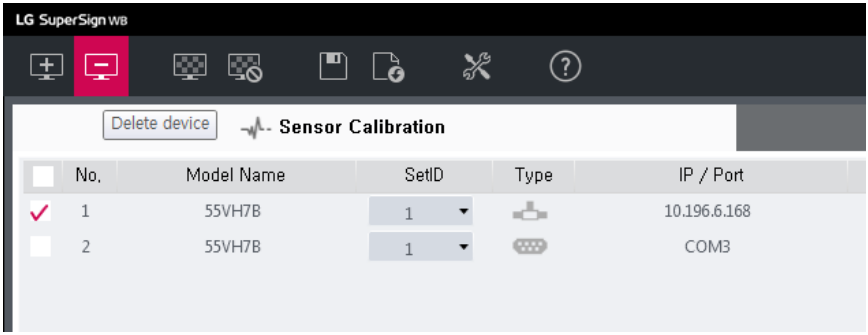
2 If a monitor to be added appears on a list on the left side, check if the information is correct, and click the [DONE] button.

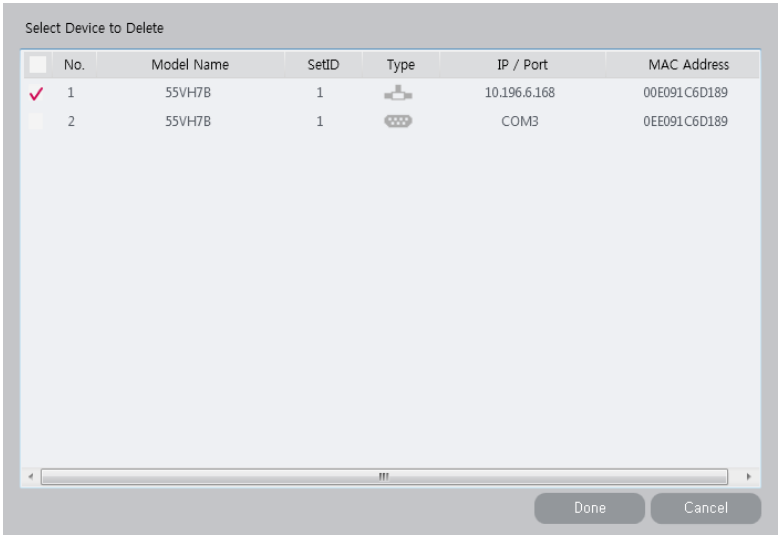
NOTE

- If the connection is made via a serial cable, you can add multiple monitors at once.

How To Delete Signage Monitor

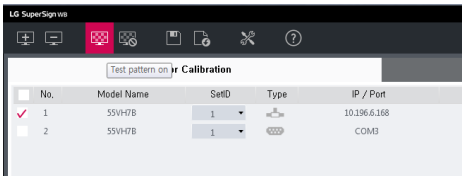
Click the button in the top menu, and a window you can delete a monitor will appear.

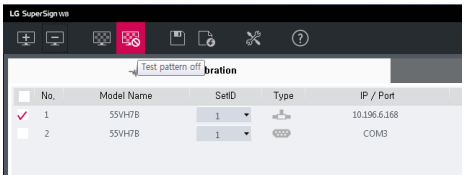




- Click on the monitor to be deleted and click the [DONE] button, and the registered monitor will be deleted.
- To delete all the monitors, select the checkbox on the top, and click the [DONE] button. Then, all the registered monitors will be deleted.

Test Pattern On/Off



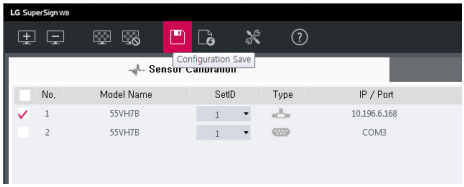


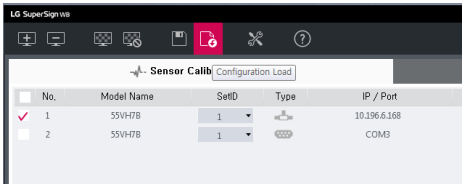
1 Click the [Test pattern on] in the menu, and the test pattern to see the White Balance of the current monitor will appear on the screen of the selected monitor in the list of monitors.

2 Click the [Test pattern off], and the screen of the selected monitor with the test pattern on will return to its original status.

How To Save Configuration File

Saves the current setting of the monitor and manages it as a file.



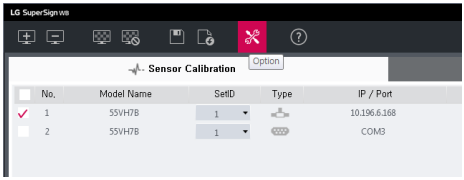


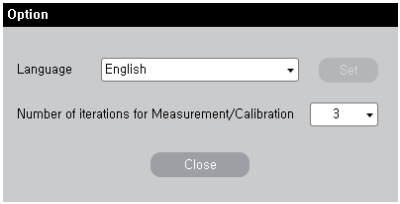
- You can save/import the information on the list of monitors in the form of a file.

Option

Language

To change the language of the program, select [Option] > [Language].

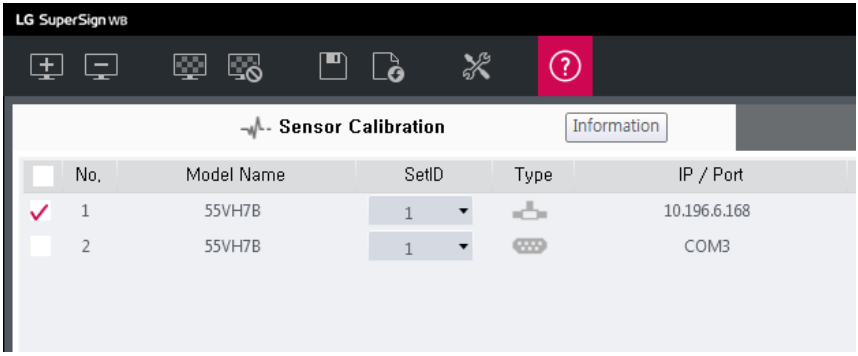




Setting the Number of Times to Measure with Sensor in Case of Execution of Measurement/Calibration Features

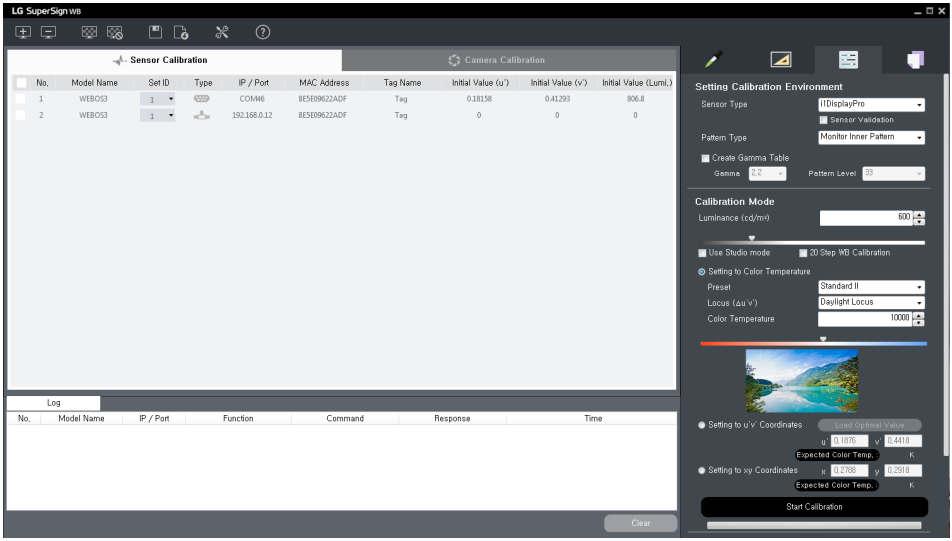
This menu is to set the number of times to measure with a sensor when measurement or calibration is operated. To change the number of times of measurement, change the number in the box. The smaller the number is, the higher the measurement's speed will be. The greater the number is, the smaller the measurement errors of the sensor get.

Information



You can check the version information and release note information on SuperSign White Balance.

Sensor Calibration



On this screen, you can do calibration via a normal contact-type sensor supported by SuperSign White Balance.

The supported contact-type sensors are as follows.

- Spyder3, Spyder4, Spyder5, ACB8300 (LG Sensor), i1DisplayPro (X-Rite), CA210, CA310

When you select the [Sensor Calibration] tab, a window to check the registered monitors in the form of a list will appear on a lower side of the tab, and a Feature tab to conduct the calibration feature with a sensor will appear on a right side of the tab.

NOTE

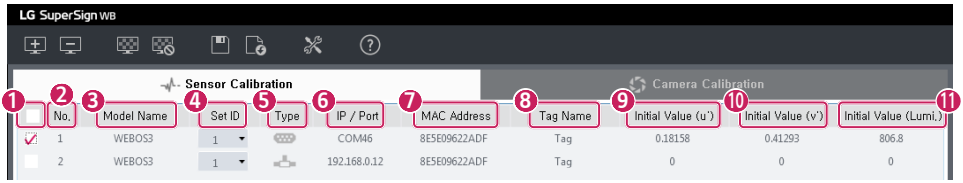
- When installing a driver to use a sensor, please refer to the websites of each manufacturer. But, for the Spider series, the relevant sensor's driver installation file is provided in the USB Driver folder, which is a subsidiary folder of the folder where SuperSign White Balance is installed.
- In case of conducting calibration with CA210 or CA310, you need to download the SDK file from the manufacturer's homepage and install it to normally operate a sensor calibration.

  Manufacturer: Konica Minolta
- To do the calibration with CA210 or CA310, you need to first conduct a 0-calibration.

CAUTION

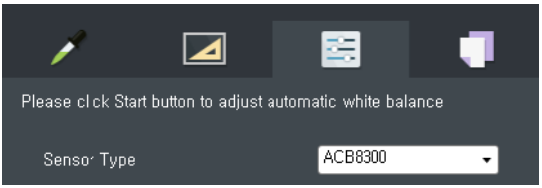
- If the sensor is forcibly connected to the USB port before the calibration function is activated or just before operation, or if the sensor is not correctly attached to the center of the monitor, the monitor may not function properly. In this case, start calibration again. In this case, start calibration again.

List of Monitors



No.	Item	Description
1	**Checkbox**	Select a monitor. You can select multiple monitors.
2	**[No.]**	All monitors on the list will be displayed on the screen in the order of being connected.
3	**[Model Name]**	You can view the model name of the connected monitor.
4	**[Set ID]**	You can view the set ID set for the monitor.
5	**Connection Type**	It turns into (Serial) or (Network) in accordance with the connection type.
6	**Connection Information**	The COM Port number (in case of the serial) or the IP address(in case of the network) of the connected monitor will appear.
7	**[MAC Address]**	Displays the unique MAC address of the connected monitor.
8	**[Tag Name]**	You can enter a separate tag name for each monitor for managing the monitors.
9	**[Initial Value (u')]**	Displays the color coordinate (u') in the basic status of the monitor.
10	**[Initial Value (v')]**	Displays the color coordinate (v') in the basic status of the monitor.
11	**[Initial Value (Lumi.)]**	It displays the brightness in the basic status of the monitor.

Feature tab



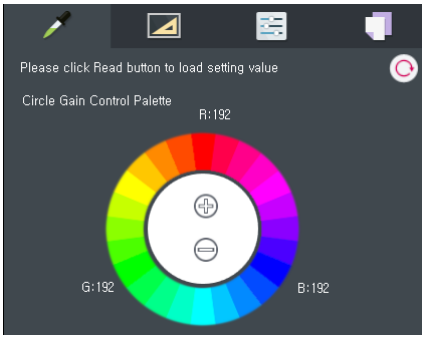
The Feature tab of the sensor calibration provides the four features of [Color Value], [Measure], [Calibration], and [Duplication].

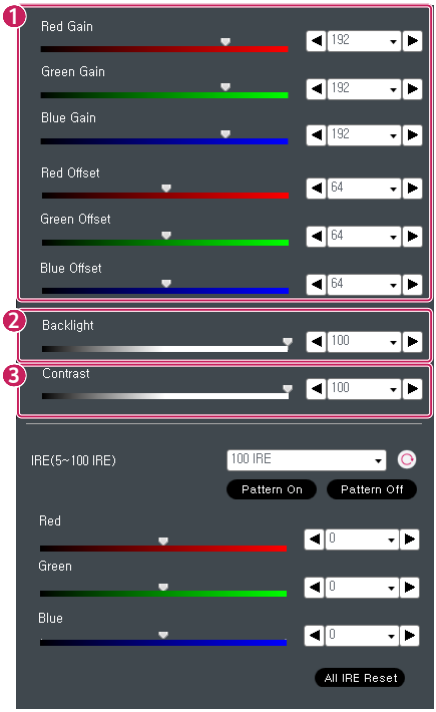
To use these features, you need to connect a supported contact-type sensor to the PC and attach it to the monitor. Afterward, you need to select a monitor to apply the color from the list of the monitors.

Color Value

Select a specific monitor from the list of the monitors, and click the button to see the color information on the relevant monitor.

To change the color value, click the arrow button on the right side of each piece of the information.

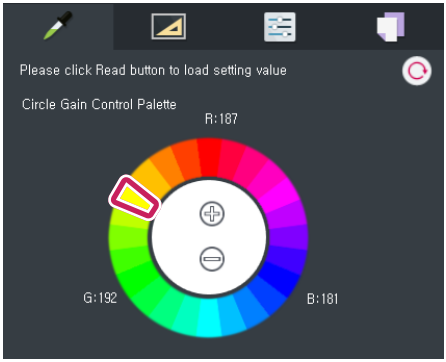




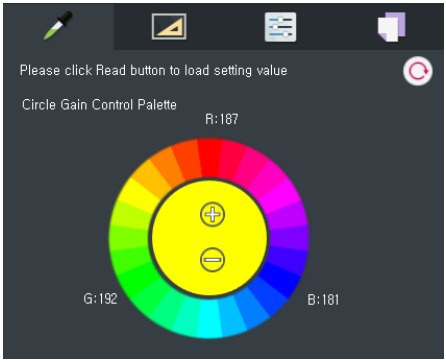
No.	Item	Description
1	**Color Value Setting**	You can view the current status or change the settings of [Red Gain], [Red Offset], [Green Gain], [Green Offset], [Blue Gain], and [Blue Offset] in accordance with whether each model is supported or not.
2	**Backlight**	Adjusts the backlight value of the monitor, and it is the same as the backlight of the OSD menu video of the monitor.
3	**Contrast**	Adjusts the contrast value, and it is the same as the contrast of the OSD menu video of the monitor.

You can also change the color value via the [Gain] (circular gain control palette) on the top.

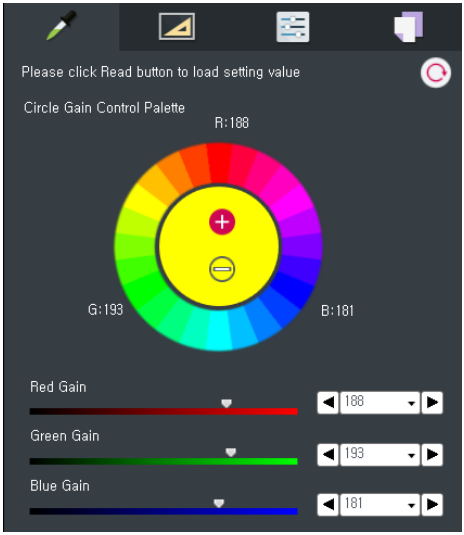
- From the circular gain control, you can select a color you feel from the Videowall Signage monitor or a color you want to increase in the monitor with a test pattern turned on the monitor.

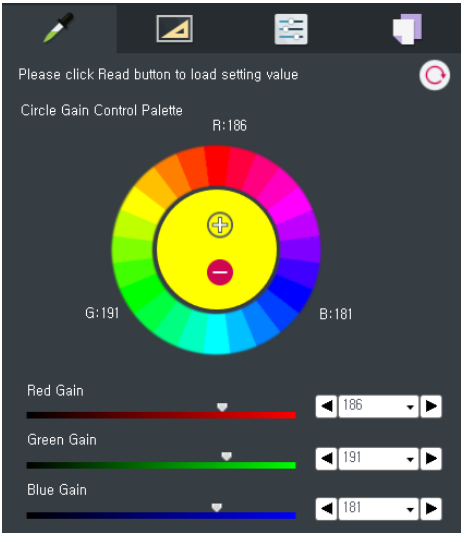


- The selected color will be applied to the circle in the center of the screen.



- The top of the circle in the center is the “+” button and the bottom is the “-” button. Each time you click the “+” button, the selected color becomes darker, and each time you click the “-” button, the selected color becomes lighter.
- Click the desired red/green/blue color and press the “+” part of the circle in the center, and the gain value of red/green/blue increases and a red/green/blue tone in the monitor becomes stronger. If you click the “-” part, on the other hand, the gain value of red/green/blue decreases and a red/green/blue tone in the monitor becomes lighter.
- For the yellow/cyan/magenta colors, two gain values will be changed at the same time. For yellow, the gain values of red/green will change, for cyan, those of green/blue will change, and for magenta, those of blue/red will change.
- If you select any other color, the increase rate will change according to the selected color.
- The changed values will be displayed together with the slider bar and drop-down box at the bottom.



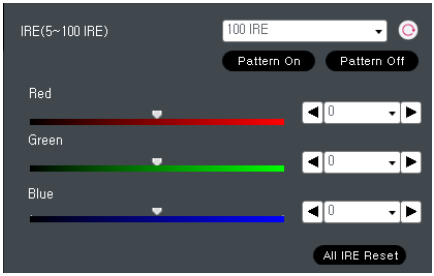


Manual Adjustment by (IRE of 20 Steps) (5-100 IRE)

You can manually adjust colors by [Gradation of 20 Steps (5-100 IRE)] of a single monitor selected from the list of the monitors. Click the [Pattern On] and the [Pattern Off] buttons at the bottom of the [IRE] combo box, and the internal pattern of the monitor for the relevant IRE will appear on the screen. Select the IRE step to be adjusted in the IRE combo box and click the Read IRE button, and then the RGB value for the relevant IRE of the monitor will be displayed on the UI in the lower side.

You can change the value of the slider bar or the combo box of each of red, green, and blue to manually adjust the colors into the desired color. The scope of change is from -50 to +50.

Select the [All IRE Reset] button, and the red, green, and blue values of all IRE in the 20 steps will be initialized into 0, 0, and 0.



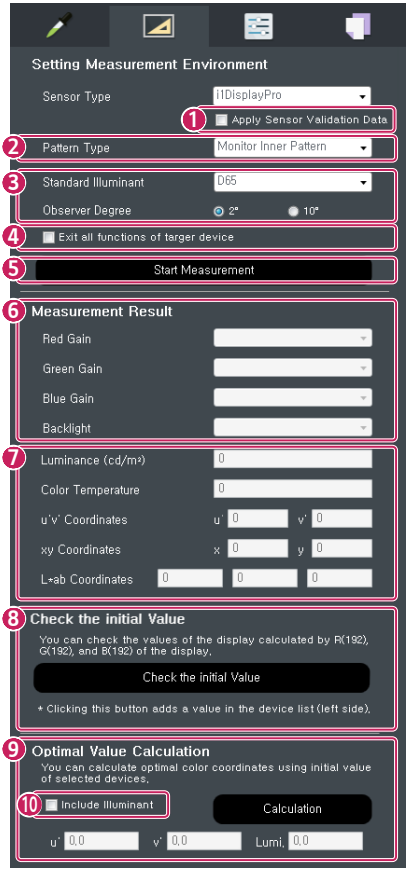
⚠ CAUTION

- If you do not close all applications run on the monitor before turning on an IRE pattern, the pattern may not appear properly.

Measurement

You can measure the White Balance of the selected monitor by using a sensor. To use this feature, only one monitor must be selected for measurement from the list of monitors on the left side, and a sensor supported by SuperSign White Balance must be connected to the PC. The list of the supported sensors is displayed in the list of the item of [Sensor Type] on the Measurement tab.

1 Select the name of the sensor connected to the PC from the item of [Sensor Type].



No.	Item	Description
❶	**[Apply Sensor Validation Data]**	For an aged sensor which is deteriorated that its reliability cannot be guaranteed, the measurement results of the sensor may be inclined to a specific color. So, this option is able to identify the characteristics of the sensor in terms of software during the measurement and to refer to and reflect the characteristics in the measurement results. This calibrates in terms of software for a sensor physically deteriorated, so it is recommended to use it only limitedly for some cases where an error of the sensor is unreliable. - Only when you select the Sensor Verification option in the Calibration tab and conduct calibration, the sensor calibration value will be applied.
❷	**[Pattern Type]**	This option is to set whether to select [Monitor Inner Pattern] as a pattern to be measured by the user or to select a random external input pattern output from the screen of the monitor without displaying a separate pattern. If you select [No Pattern], you need to manually display a pattern to be measured on the screen via an external input, etc. - When it is not a pure white pattern, there may occur an error in measurement.
❸	**[Standard Illuminant] / [Observer Degree]**	These are subsidiary indicators for measuring a value for [L*ab Coordinates] and [Optimal Value Calculation]. It is a menu to set a value for a light source in a place where the Videowall is installed. - [Standard Illuminant]: in general, you only need to set D65, and you can select D50 or D75 depending on the light source. - [Observer Degree]: it is to set an observer degree of the standard observer, and you can select either 2° or 10°.
❹	**[Exit all functions of targer device]**	When you conduct a measurement while another app is running on the Signage monitor, [Monitor Inner Pattern] may not appear. So, this feature is to allow a measurement to be conducted after checking the relevant option and sending a command to close the app.
❺	**[Start Measurement]**	A measurement is conducted in the current measurement environment. The relevant result will appear in the area of [Measurement Result] under the [Start Measurement] button.

6	**Monitor Information Check**	The [Red Gain], [Green Gain], [Blue Gain], and [Backlight] are features to read the relevant value of the targeted monitor and display the value on the screen. You can change the read value into a random value. - When changing the value, the existing measurement value will be initialized.
7	**Sensor Measurement Result**	The [Brightness (cd/m2)], [Color Temperature], [u'v' Coordinates], [xy Coordinates], [L*ab Coordinates], etc. show the results of measurement done by using a sensor on the screen.
8	**[Check the initial Value]**	This allows the user to measure the initial value of the registered Signage monitor and to save the relevant result. It is necessary to calculate the optimal calibration value of the installed Videowall. - When you measure the initial value, you need to display a white pattern on the monitor screen and then preheat it for a sufficient period of time (about two hours) to measure a precise value. It is recommended to attach a sensor to the center of the monitor.
9	**[Optimal Value Calculation]**	This feature is able to analyze the initial values of the selected monitors and to calculate the optimal calibration color coordinates. You must select the monitor that you have checked the initial value before calculating the optimal value.
10	**[Include Illuminant]**	This option allows the user to calculate the optimal value by considering the light source in a place with the Videowall installed. If you select this option, the optimal value will differ according to the setting of the [Standard Illuminant] in the area of [Setting Measurement Environment]. The default value is "No selection." - Please refer to page 32 for detailed methods related to checking the initial value and calculating the optimal value.

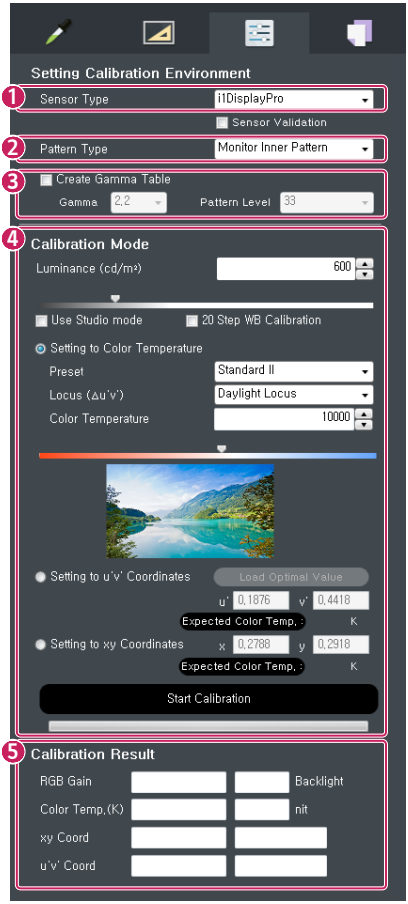
Calibration

You can calibrate the White Balance of the monitor automatically by using a contact-type sensor.

1 Connect a supported sensor to the PC, and select the monitor to be calibrated from the list of the monitors.

2 Set [Sensor Type], [Gamma], [Pattern Level], [Brightness], [Color Temperature], etc. and click the calibration [Start] button.

3 Click the calibration [Start] button, and calibration will proceed with a target value set in the Calibration mode. The results of the calibration will be displayed on the area of [Calibration Result] at the bottom.



No.	Item	Description
❶	**Sensor Type**	You can select a type of the sensor to use.
❷	**Pattern Type**	[Pattern Type] is to set whether to select [Monitor Inner Pattern] as a pattern to be calibrated by the user or to select a random external input pattern output from the screen of the monitor without displaying a separate pattern. If you select [No Pattern], you need to in person display a pattern to be calibrated on the screen via an external input, etc. When it is not a pure white pattern, there may occur an error in calibration.
❸	**Create Gamma Table**	Check [Create Gamma Table], and a new gamma table will be created, and you can save it as a file after it is created. In addition, you can use the saved file to apply to another monitor by duplicating it. By default, it is not saved. If you check the [Create Gamma Table], the items of [Gamma] and [Pattern Level] will be activated, and the pattern type will be automatically fixed as [Monitor Inner Pattern]. - [Gamma] is a value to show the degree of gamma for gamma calibration. The SuperSign White Balance sets 2.2 as the default value. - The [Pattern Level] refers to the number of samplings for each color (R/G/B/W) when you check the [Create Gamma Table]. You can select from the steps of 9, 17, and 33.

4	**Calibration Mode**	For an actual calibration, there are detailed items listed for you to select a calibration method and a target value. - By using the item of [Brightness], you can set the target brightness of the monitor for calibration, and the calibration will be conducted according to the set brightness. However, in accordance with the maximum brightness spec. of the monitor, the set brightness may not be reached. - You can select [Studio Mode] when you want to calibrate with a low color temperature between 2800K and 4900K. If you uncheck [Studio Mode], you can select a color temperature between 5000K and 16000K. - [White Balance Calibration of 20 Steps] is to conduct calibration under the designated conditions for each IRE by decreasing the IRE from 100 by five steps. If you select the option, patterns will appear for each gradation, and the relevant gradation will be calibrated consecutively. However, if the brightness of patterns for each gradation decreases to below a certain level, the calibration will end. - The [Preset] is a set value of [Color Temperature] which is frequently used. If you select the [Preset], the value will automatically change into the relevant [Color Temperature]. However, the preset setting is not available in [Studio Mode] or the [Manual Coordinate Setting] mode. - The [Locus] is a menu to set to apply the same correlated color temperature differently according to the value of Δu'v'. According to the set value of Δu'v' of the [Locus], each Locus will have different color coordinate values at the same color temperature. - The lower [Color Temperature] is, the more reddish the image will become, and the higher [Color Temperature] is, the more bluish the image will become. The default value is set to be 10000K, which is the value of Standard II of [Preset]. - The preview image (the virtual monitor screen) symbolically shows the changes in the image tone according to changes in the color temperature. You can see the changes in the image tone according to the changes in the color temperature. - [Setting to u'v' Coordinates]: You can designate calibration target color coordinates as the value of the u'v' color coordinate system. - [Setting to x y Coordinates]: You can designate calibration target color coordinates as the value of the x y color coordinate system.
5	**Calibration Result**	[Calibration Result] shows the results of the calibration to the user after the calibration is conducted.

How To Select White Balance Desired by User

[Setting to Color Temperature] Mode

You can select the desired color temperature of the user based on the value of Kelvin(K). In this case, the [Preset] is a set value of Color Temperature which is frequently used. If you select the [Preset], the value will automatically change into the relevant color temperature. However, preset mode is not available in Studio mode or Manual Coordinate Setting Mode. The lower the color temperature is, the more reddish the image will become, and the higher the color temperature is, the more bluish the image will become. The default value is set to be 10000K, which is the value of Standard II of Preset. The [Locus Δu'v'] is to show a difference in colors at the same color temperature. It is expressed as a locus in the unit of Δu'v', and the default value is set as [Daylight Locus]. The preview image (the virtual monitor screen) symbolically shows the changes in the image tone according to changes in the color temperature and locus. You can see the changes in the image tone according to the changes in the color temperature and locus.

[Setting to u' v' Coordinates] Mode

This function is to set the desired color temperature of the user to the value of the CIE 1976 u'v' color coordinate system. The setting range is as follows. (u': 0.18239 - 0.25727 / v': 0.42304 - 0.52968)

- If you select the [Setting to u' v' Coordinates] mode, the device can automatically import the optimal calibration coordinates obtained by running the [Optimal Value Calculation] feature in the [Measurement] tab. (Please refer to page 33 for details on how to use.)

[Setting to xy Coordinates] Mode

This function is to set the desired color temperature of the user to the value of the CIE 1931 xy color coordinate system. The setting range is as follows. (x: 0.26180 - 0.45190 / y: 0.26480 - 0.40860)

NOTE

- Click the [Expected Color Temperature] button of each manual setting mode, and the correlated color temperature value of the relevant coordinates will be calculated and displayed.

CAUTION

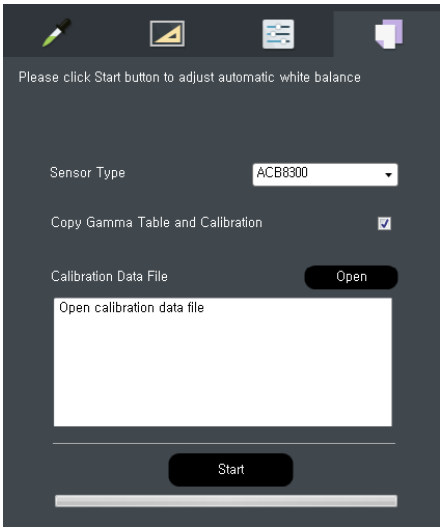
- The Color Temperature setting and Manual Color Coordinate setting are mutually exclusive.
- Successful calibration may depend on the user-specified values for the [Studio Mode] setting or monitor specifications.
- In [Manual Coordinate Setting] mode, creating a gamma table is not available in some color coordinates.
- The results of [Calibration] may vary according to the performance and error range of the sensor used for [Calibration].
- The color of the preview image is to help the user understand and may differ from the actual color of the monitor.

View Duplication Tab and Change Setting

You can duplicate [Calibration Data File] created when using the [Calibration] feature to a specific monitor.

Enter the [Duplication] tab and select a monitor in [Device Management]. Then click [Open] to select the calibration data file to duplicate.

If you check [Copy Gamma Table and Calibration], the selected sensor must be connected to the PC. After the gamma table is duplicated, calibration will be automatically conducted. The value which has been set when creating the calibration data file is applied as the setting.



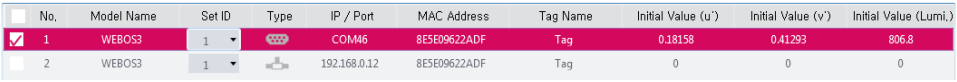
(Reference) Calculation of Optimal Color Coordinate

You can use a feature to read the default value of each monitor and to calculate and recommend the optimal calibration coordinates for the monitors to be calibrated based on the default value from the SuperSign White Balance 3.7.15 version and higher. The provided feature enables you to conduct calibration with the coordinates recommended for all targeted monitors via the feature and enjoy the maximum performance of the monitor while making the colors uniform.

Measurement of Initial Color Coordinate Value of Each Monitor

1 Check the checkbox of the monitor for an initial value to be calculated.

2 Click the [Check the initial Value] button with the sensor connected and attached to the display.

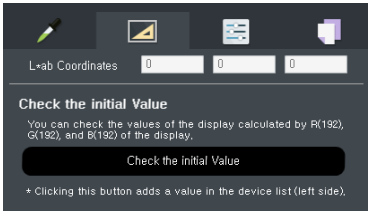


	No.	Model Name	Set ID	Type	IP / Port	MAC Address	Tag Name	Initial Value (u')	Initial Value (v')	Initial Value (Lumi.)
☑	1	WEBOS3	1		COM46	8E5E09622ADF	Tag	0.18158	0.41293	806.8
☐	2	WEBOS3	1		192.168.0.12	8E5E09622ADF	Tag	0	0	0

NOTE

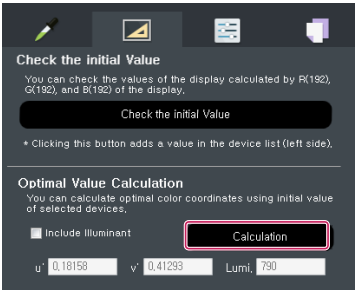
- Select all monitors for calculating the optimal values. If you do not select a monitor, the monitor will be excluded from the calculation of the optimal values.

3 The information (u',v', brightness) of the initial values measured will be recorded herein. Measure the initial values of all monitors this way.



4 Click the [Calculation] button to calculate the optimal calibration coordinates based on the initial color coordinates.

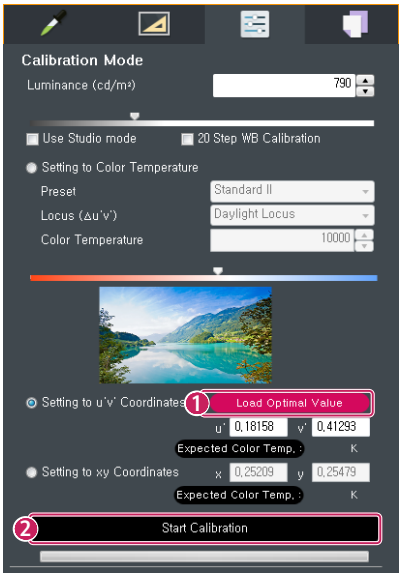
5 Click the [Calculation] button, and the optimal values of the selected monitors will be calculated. You can record the values and apply them to all monitors.



Process to Calibrate All Monitors with Calculated Optimal Value

1 Select [Setting to u' v' Coordinates]. Then, click on the Import Optimal Value button, and then the brightness and color coordinates will automatically be changed into the calculated values.

2 Select only one monitor for calibration, connect a sensor, and click the Start Calibration button to conduct calibration with the value.



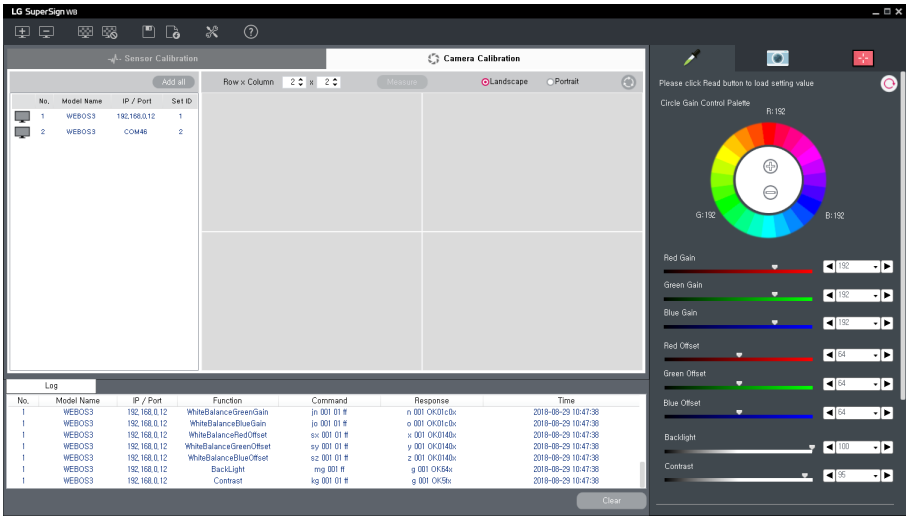
Camera Calibration

Camera Calibration is a feature to adjust the White Balance of the Videowall conveniently and quickly by using a camera. To use this feature, you need to have a separate license issued for the PC with the software installed.

How To Start

To conduct calibration with a camera, select the [Camera Calibration] tab on the screen.

The icon of the Feature tab on the right side of the screen will change into the icon of the Camera Calibration feature.



Videowall Configuration

1 Enter the size of the Videowall to adjust.
Enter the proper numbers for the rows and columns.
The maximum adjustable size is 3 x 3.

2 Select whether the Videowall is installed in the horizontal direction or vertical direction.

3 Select a device from the device list on the left side to configure the Videowall.
You can configure the Videowall by adding all the selected devices at once by using the [Add All] button.

* You can initialize the content configured by the Videowall Initialization button.
* The Measurement button can be selected when the Camera Calibration process is finished, and you can check the adjusted result value.

⚠ CAUTION

- The configuration position of the actual video wall and the configuration position of the video wall in the SSWB screen should be the same for each set ID. Calibration will not work if the actual position is different.

Feature tab

Color Value

You can select monitors one by one and adjust a variety of the settings.

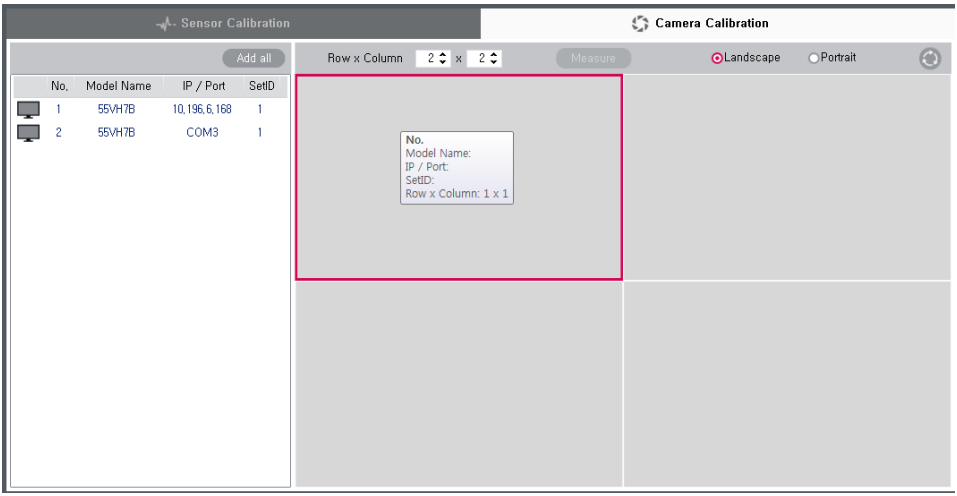
It works the same way as the Color Value menu of the sensor calibration, so please refer to the previous chapter.

Camera Setting

In this step, your surrounding environment is evaluated and your camera's settings are automatically optimized for camera selection and camera calibration.

Calibration Menu

Conducts calibration with a camera.



Camera Setting

Checks if the environment is proper for camera calibration and automatically sets the required settings of the camera.

The Camera Calibration feature is available only for the below models.

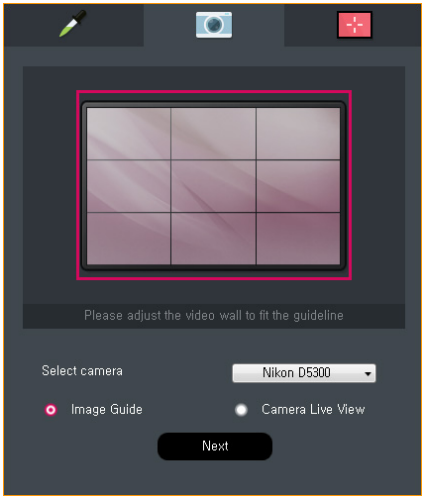
Supported Cameras: Nikon DSLR Camera D5300, D5500, D5600

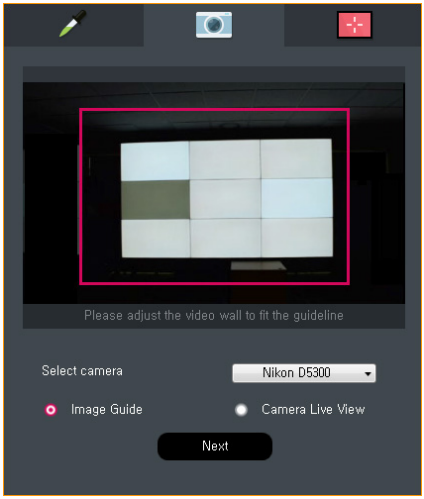
Supported Lenses: AF-S DX NIKKOR 18-55 mm f/3.5-5.6G VR II Lens

* The camera mode is recommended to be set as the **M** or the **Auto** modes.

Check Camera Position

After selecting the camera, adjust the camera position so that the video wall is fully illuminated within the camera screen.





1 Select the camera as shown above and adjust the distance and position between the video wall and the camera so that it is as fully illuminated as possible while entering the guideline.

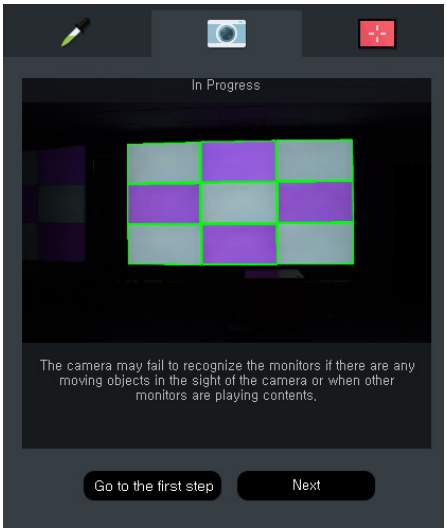
2 Select [Camera Live View] to view the live video of the camera.

3 Align with the guideline, and click the [Next] button to proceed to the next step.

* Do not adjust the size with the zoom feature of the camera. Use the 18 mm setting of the lens.

Auto Setting

It automatically analyzes the surrounding environment, checks if the environment is proper for calibration, and adjusts the settings of the camera.



1 It updates and shows the video shot during automatic setting.

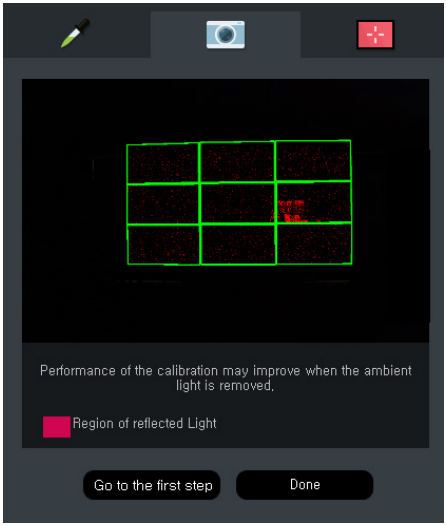
2 After completing all settings, click the button and proceed to the next step.

NOTE

- In case of an error during the automatic setting, the process will stop and the error will be notified.

Detection of Light Reflection

It is a step to check the detected light reflection area.



- To check the detected light reflection area and proceed to the next step, select the [Next] button. To restart from the beginning, select the [Go to the first step] button.

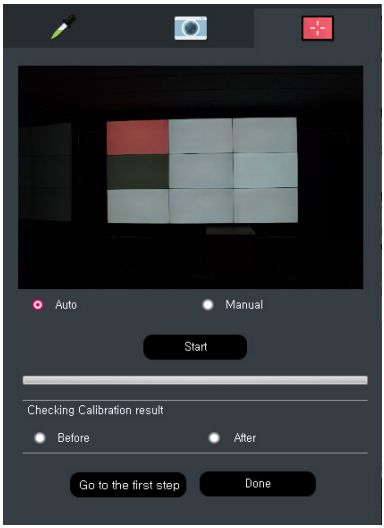
NOTE

- Do not use the detected light reflection area when you conduct calibration.
- If there are too many light reflection areas, an error message will be output.

Calibration Menu

Conducts calibration of the Videowall.

The icon of the Calibration menu is activated to allow the calibration to proceed only after all camera settings are normally done.



First, select whether to automatically select [Standard Monitor] or to manually select from the Videowall Configuration on the left side via the menu to select [Auto] or [Manual].

1. Select [Standard Monitor] and click the [Start] button to start the calibration.
2. When the calibration is finished, use [Checking Calibration Result] to compare the before and after of the calibration.
3. To restart from the beginning, click the [Go to the first step] button. To finish the calibration, click the [DONE] button.
4. To restart the calibration, click the [Start] button.

NOTE

- Automatic selection is to automatically detect the monitor most suitable to be used as the reference monitor for the current video wall configuration.
- If you manually select, you can designate a monitor as the standard monitor. The manually selected monitor is not kept as the standard monitor when a monitor is automatically selected.
- When calibration starts, the device notifies the progress with the Status Progress bar.

Select Calibration Monitor

When calibrating the Videowall, you can adjust only a part of it instead of the whole part.

You can individually select a monitor to calibrate by left-clicking in the Videowall Monitor Management window.

NOTE

- If you select [Auto] in the Calibration menu, basically all monitors are selected as the monitor to adjust.
- If you select [Manual], you can click and select your desired monitor. The selected monitor will appear in red color.

Error Description

1 The camera does not normally work.
- Reboot the camera, and try again.
- Reboot the PC and the camera, and try again.

2 This lens is not supported.
- The camera calibration supports only the AF-S DX NIKKOR 18-55 mm f/3.5-5.6G VR II lens. Please check the lens model.

3 Switch the lens to the AF mode.
- When the lens is MF, you cannot conduct calibration normally. Switch the lens to AF.

4 Failed to connect the cable.
- There is a problem in the RS-232C connected to the monitor or the LAN cable connection. Check the status of the cable connection.

5 Align with the guideline.
- Readjust the position of the camera and the distance between the camera and Videowall to align the Videowall with the guideline.

6 Adjust the shooting angle.
- Readjust the position the camera and the distance between the camera and Videowall to make the camera face the front/center of the Videowall.

7 Failed to detect the monitor.
- Failed to detect each monitor of the Videowall. Please remove things that block the view of the camera or the monitor, if any. A strong lighting or bright object nearby may affect the operation, so please remove such things.

8 Failed to automatically set the camera.
- Failed to automatically set the settings of the camera. Please remove things that block the view of the camera or the monitor, if any. A strong lighting or bright object nearby may affect the operation, so please remove such things.

9 There are many light reflection areas detected.
- Please remove a lighting or light source reflected in the monitor.

10 Adjust the focal distance of the lens to 18 mm.
- To normally conduct calibration, you need to adjust the focal distance of the lens to 18 mm.

11 Low battery.
- Low camera battery. Connect the AC power or replace the battery.

Precautions

1 To obtain the best calibration result, the camera and Videowall must face the center on the front side of each other.

2 The maximum adjustable size of the Videowall is 3 x 3.

3 Calibration is available only for the Videowall which is configured in a square shape.
Any Videowall installed in an atypical shape is not supported.
(e.g. those installed in a diagonal direction, in a crossing direction, in a radial shape, or in a mixture of horizontal and vertical directions, etc.)

4 The adjustment may fail due to different external environments, camera positions, and color coordinates and brightness characteristics of each monitor.

5 To prevent the camera from shaking during calibration, please fix the camera with a tripod.

6 Install the camera in the horizontal direction. If you install the camera in the vertical direction, the monitor may not be detected, and calibration cannot normally proceed.

7 The camera calibration does not support the color temperature of [Studio Mode]. Try any other method for calibration.

8 The data measured by the camera may differ from the actual data.

9 When the color value of the standard monitor is an extreme value, the adjustment may not be done normally. (e.g. R gain: 255, G gain or B gain: 0, etc.)

To obtain the source code under GPL, LGPL, MPL, and other open source licenses, that is contained in this product, please visit *http://opensource.lge.com*. In addition to the source code, all referred license terms, warranty disclaimers and copyright notices are available for download. LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping, and handling) upon email request to *opensource@lge.com*. This offer is valid for a period of three years after our last shipment of this product. This offer is valid to anyone in receipt of this information.