

Color Expert Pro Mobile

User Guide

Color Expert Pro is a program that allows you to use the standard screen colors or fine-tune them for LFD devices through a calibrator or mobile device.

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Before getting started

1-1 About Color Expert Pro

Colors displayed on LFDs may appear different from the original colors, depending on the screen settings and the environment where the LFDs are used. To improve the quality of colors on the screen, adjusting the screen colors may be required.

Color Expert Pro is a program that allows you to use the standard screen colors or fine-tune them for Samsung LFD devices through a calibrator or mobile device. When you calibrate a VideoWall product that places multiple LFDs adjacent to one another through Color Expert Pro, more consistent quality can be provided by setting the same colors for each LFD.

Color Expert Pro consists of a PC program and an Android application. This user guide handles the features for the Android application. For further details about the PC program, refer to the user guide for Color Expert Pro.

1-2 Requirements to use the program

Restrictions for LFDs

Color Expert Pro is compatible with Samsung LFDs. Depending on the LFD model, available functions in Color Expert Pro may vary. Some models may support part of them.

 This user guide describes the operations based on the LFD that supports all available functions by Color Expert Pro.

Supported devices

The devices compatible with Color Expert Pro Mobile are as follows:

LFD

- UD46E-A
- UD55E-A
- UD46E-B
- UD55E-B
- UH46F5
- UM55H-E
- UH55F-E
- UM46N
- UH46N
- VM46R-U
- VHR-R

Mobile device

- Samsung Galaxy S7
- Samsung Galaxy S8
- Samsung Galaxy Note 8
- Samsung Galaxy S9

Supported operating systems

You can install Color Expert Pro on the computer or mobile device that is connected to an LFD. The operating systems that can install Color Expert Pro are as follows:

PC

- Windows 7 32bit/64bit
- Windows 8 32bit/64bit
- Windows 10 32bit/64bit

Mobile device

- Android OS 7 Nougat
- Android OS 8 Oreo
- Android OS 9 Pie

1-3 A quick glance of calibration process

To use Color Expert Pro, first configure your environment following the instructions below:

- 1 Use the appropriate cables to connect the router to the LFDs.
For further details, refer to the following: [▶ Connecting a group of LFDs to a router](#)
- 2 Connect the mobile device to the router's access point (AP).
For further details, refer to the following: [▶ Connecting a mobile device to a router's access point \(AP\)](#)
- 3 Install Color Expert Pro Mobile on your mobile device.
For further details, refer to the following: [▶ Installing/uninstalling Color Expert Pro Mobile](#)
- 4 Run calibration by using Color Expert Pro Mobile.
For further details, refer to the following: [▶ Using Color Expert Pro Mobile](#)

1-4 Connecting a group of LFDs to a router

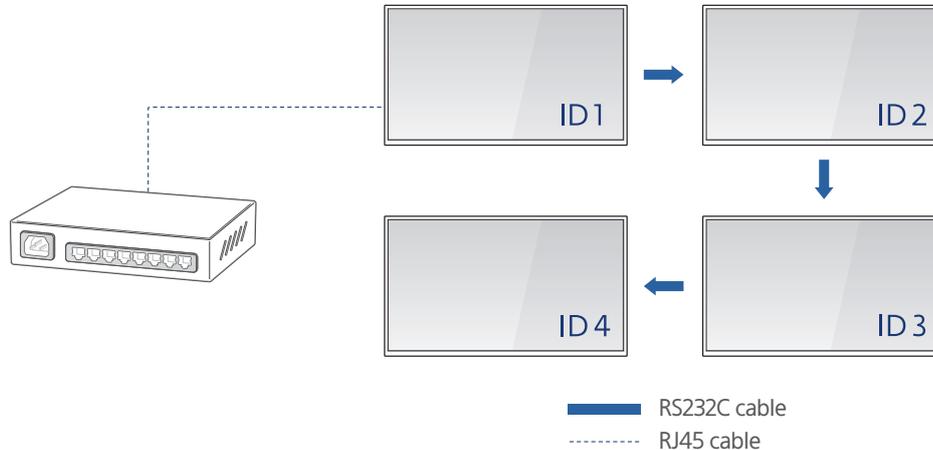
Use the appropriate cables to connect the target LFDs for screen color adjustment to the wired/wireless router. The method to connect devices may vary depending on the cable type.

Using RJ45 and RS232C cables together

Use an RJ45 cable to connect the router to the main LFD, as shown in the figure. Use RS232C cables to connect between the LFDs.



- In this user guide, the first LFD in a group of LFDs, connected to the router via RJ45 cables, is referred to as the main LFD.
- If the LFDs are connected to the Set Back Box with RJ45 cables, remove the Set Back Box and use an RJ45 cable to connect the main LFD to the router.
- The method to configure the LFD ID and connection cable settings may vary depending on the LFD device type. Refer to the LFD user guide for further details.



Configuring LFD information

Device connection is complete after individual IDs and connection settings are configured for all the LFDs. After connecting cables, register information about the LFDs using the remote control.

- 1 Set the connection cable from the main LFD to the target LFD to “**RJ45 (LAN) cable.**”
- 2 After configuring the cable settings, select **Enter manually** in **Home > Network Settings > IP Setting** on the main LFD, and then enter the following information.
 - **IP Address:** Enter the IP address of the main LFD. Ensure that the IP address of each LFD is different from the IP address of the computer.
 - **Subnet Mask:** Enter a Subnet mask value.
 - **Gateway:** Enter a Gateway value.
- 3 Specify the device ID from the main LFD.
 - The main LFD has been connected successfully.
- 4 Specify the device ID from the other LFD that is not the main LFD.



When connecting multiple LFDs, ensure a duplicate ID is not assigned to the LFDs. If a duplicate ID is assigned, calibration will not work.

- 5 From the other LFD that is not the main LFD, set the connection cable to **RS232C cable.**

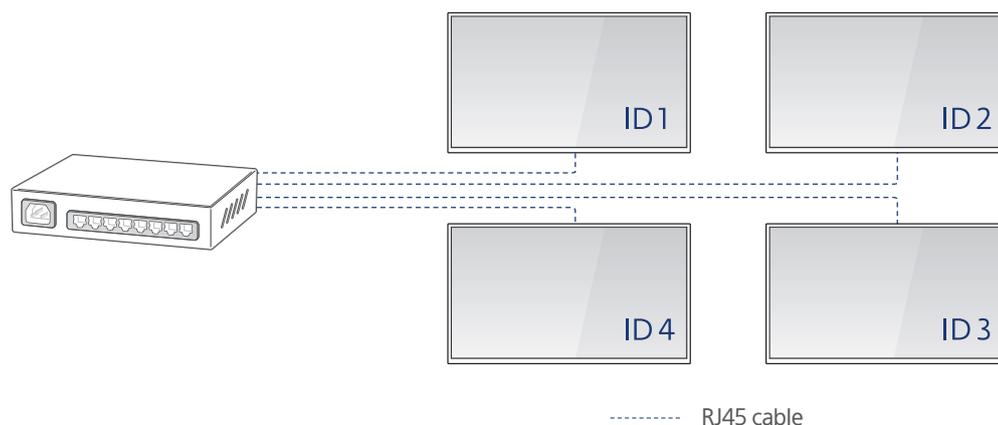


- If two or more LFDs are connected, repeat steps 4 to 5 to configure information about LFDs except for the main LFD.
- If devices cannot connect even after LFD information is configured, check the type and connection status of the connected cables again.
- With UDA-series models, check whether the Factory mode's BaudRate is set to 9600.

Using RJ45 (LAN) cables

Use RJ45 cables to connect the router to the LFDs, as shown in the figure.

- If the LFDs are connected to the Set Back Box with RJ45 cables, remove the Set Back Box and use the RJ45 cables to connect the LFDs to the router.
- The method to configure the LFD ID and cable settings may vary depending on the LFD device type. Refer to the LFD user guide for further details.



Configuring LFD information

Device connection is complete after individual IDs and connection settings are configured for all the LFDs. After connecting cables, register information about the LFDs using the remote control.

- 1 Set the connection cable from an LFD to the target LFD to **“RJ45 (LAN) cable.”**
- 2 Select **Enter manually** in **Home > Network Settings > IP Setting** on the LFD, and then enter the details.
 - **IP Address:** Enter the IP address of the LFD. Ensure that the IP address of each LFD is different from the IP address of the computer.
 - **Subnet Mask:** Enter a Subnet mask value.
 - **Gateway:** Enter a Gateway value.
- 3 Specify the device ID from an LFD.

- When connecting multiple LFDs, ensure a duplicate ID is not assigned to the LFDs. If a duplicate ID is assigned, calibration will not work.
- If two or more LFDs are connected, repeat steps 1 to 3 to configure the LFD information.
- If devices cannot connect even after LFD information is configured, check the type and connection status of the connected cables again.

1-5 Connecting a mobile device to a router's access point (AP)

When you connect a mobile device to the same AP that is connected to the computer, by using the camera of the mobile device, you can run screen calibration for the LFD that is connected to the computer.

Select an available AP from the Wi-Fi list on the mobile device. In case of the secured AP, enter the password and then click **CONNECT**.



- For connection to the AP, the Wi-Fi function is required. Be sure to check whether the mobile device supports the Wi-Fi function.
- The connection method may vary depending on the OS version of the mobile device to connect. Refer to the user guide of the mobile device for further details.

1-6 Installing/uninstalling Color Expert Pro Mobile

You can install or uninstall Color Expert Pro Mobile on the mobile device for screen calibration.

Installing Color Expert Pro Mobile

- 1 Using a web browser on your PC, access <https://www.secslm.com> and then log onto the system.
- 2 In **Help > Download Center**, search for "**Color Expert Pro**."
- 3 Download the install file for Color Expert Pro Mobile.
- 4 Copy the install file downloaded via the USB cable or an extra storage device to the mobile device.
- 5 Run the **My Files** application on the mobile device and click **Recent files** to check and install the file.



- If not installed, run the **Settings** application and then turn on the option in **Lock screen and Security > Install unknown apps**.
- The Color Expert Pro Mobile install file can also be downloaded from <https://displaysolutions.samsung.com>. Log onto the system, search for "**Color Expert Pro**", and then download the install file.

Uninstalling Color Expert Pro Mobile

After running the **Settings** application, click **Apps > Color Expert Pro Mobile > UNINSTALL**.



The way how to delete the application may vary depending on the OS version of the device. Refer to the user guide of the device for further details.

2

Using Color Expert Pro Mobile

2-1 Connecting a mobile device to the LFD

Connect the mobile device to the LFDs connected to the router and perform calibration of the LFDs.

- 1 Run Color Expert Pro Mobile on the mobile device.
- 2 On the connection screen, press **Matrix** to set the LFD layout.

CONNECT Input the IP address and port number of the video wall for connection.

CONNECTION CABLE

All displays by LAN(RJ45) Cable

Display chained by RS232 Cable

Matrix 2 * 2

Starting ID 1

Set ID Range

Auto Set ID

ID ex) 1-11 or 13 X

IP 100 100 100 103

ADD ID RANGE

CONNECT

3 Select the cable type to use to connect the LFD group.

CONNECT Input the IP address and port number of the video wall for connection.

CONNECTION CABLE

All displays by LAN(RJ45) Cable

Display chained by RS232 Cable

Matrix 2 * 2

IP 100 100 100 103

ID	IP
1	100 100 100 103
2	100 100 100 104
3	100 100 100 105

CONNECT

– If RJ45 cables are used, enter the ID and IP address set from each LFD.

CONNECT Input the IP address and port number of the video wall for connection.

CONNECTION CABLE

All displays by LAN(RJ45) Cable

Display chained by RS232 Cable

Matrix 2 * 2

IP 100 100 100 103

ID	IP
1	100 100 100 103
2	100 100 100 104
3	100 100 100 105

CONNECT

– If RS232 cables are used, configure the setting for each item.

- **Starting ID:** Automatically assign IDs to LFDs. Set the ID start number. IDs are assigned in numerical order, beginning from the LFD in the top left of the preview screen.

 To assign IDs automatically, make sure that the **Auto Set ID** checkbox is selected.

- **ID:** Specify the LFD ID range. Enter the precise ID range set from the LFD. To add an ID range, press **ADD ID RANGE**.

 It is not possible to specify the ID range if the **Auto Set ID** checkbox is selected.

CONNECT

Input the IP address and port number of the video wall for connection.

CONNECTION CABLE

All displays by LAN(RJ45) Cable

Display chained by RS232 Cable

Starting ID

Set ID Range

Auto Set ID

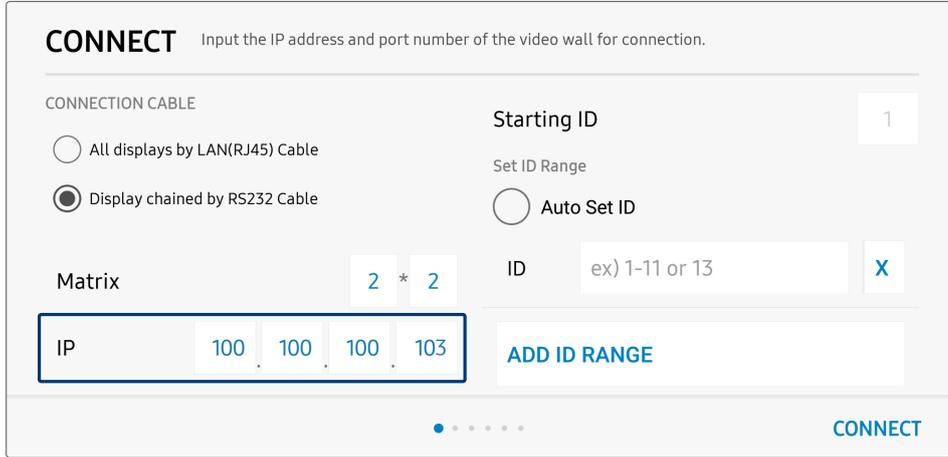
Matrix *

IP . . .

ID

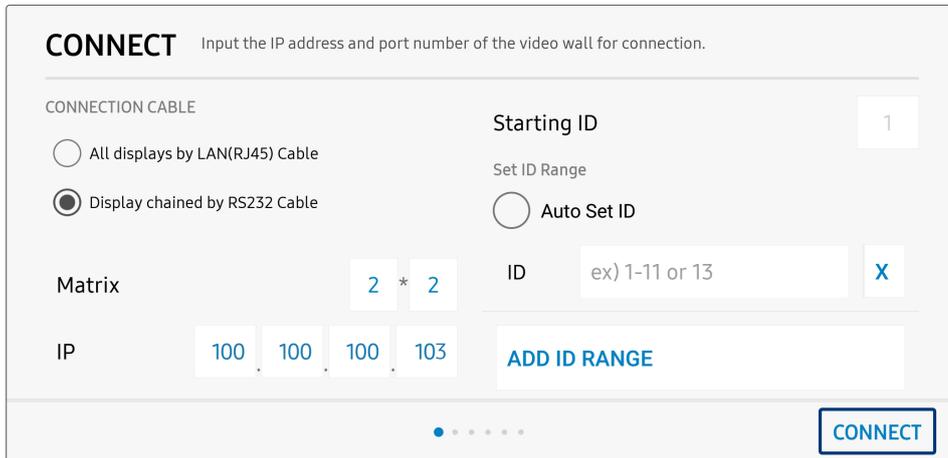
4 Enter an IP address.

 The IP address can be found in the Mobile calibration connection window in the computer-specific program.



5 Press **CONNECT** to connect the mobile device to the LFDs.

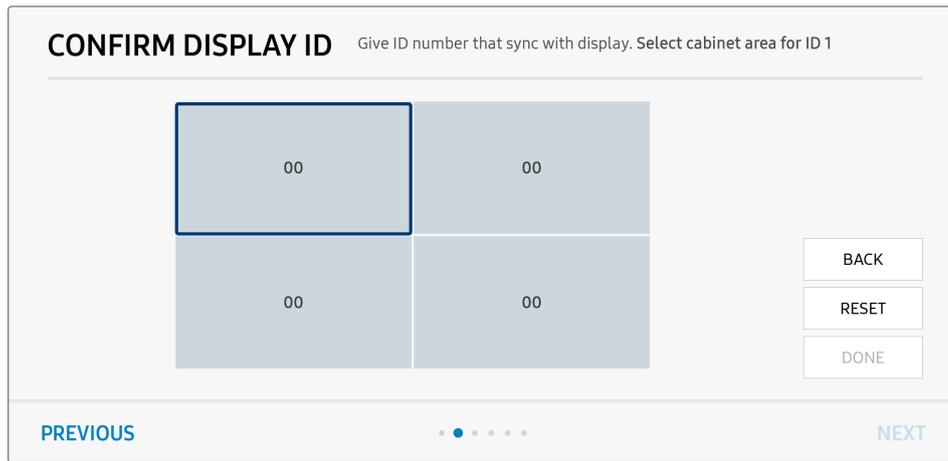
- After a connection is established, the Mobile calibration connection window in the computer-specific program displays Connected.



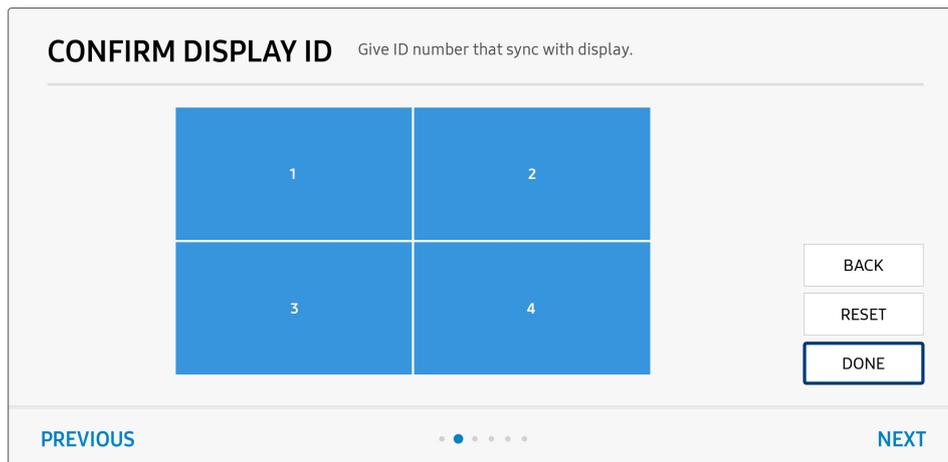
2-2 Syncing LFD with a mobile device

Sync information, entered when connecting LFDs to the mobile device, with the LFDs.

- 1 In the preview screen, select LFDs and assign IDs to the LFDs.



- 2 Press **DONE** to perform syncing.
 - After syncing is completed, the colors of the LFDs on the preview screen become blue.



2-3 LFD layout settings

After connection between the computer and mobile device, LFD layout can be configured through the mobile device.

- 1 Select the screen direction of the LFD and then click **Next**.

The screenshot shows a configuration screen titled "TYPE" with the instruction "Select the orientation type for the video wall's screen." There are two radio button options: "Landscape" (selected) and "Portrait". Below each option is a 2x2 grid of light blue squares representing the screen layout. At the bottom, there are "PREVIOUS" and "NEXT" buttons, and a progress indicator with four dots, the second of which is filled.

- 2 Press **Starting Point ID** to set the LFD ID start number. IDs are assigned in numerical order, beginning from the LFD in the top left of the preview screen.
 - After you click an LFD on the preview section, set the IDs for each LFD.
 - Select **Show SET ID On** or **Show SET ID Off** to display or hide the assigned ID on each LFD screen.

The screenshot shows a configuration screen titled "MATRIX & ID" with the instruction "Select the matrix size and the screen ID to calibrate." On the left, there are three input fields: "Starting Point ID" with the value "1", "Matrix" with the value "2*2", and a "Show Set ID On" button. On the right, there is a 2x2 grid of light blue squares, each labeled with an ID: "ID 1" (top-left), "ID 2" (top-right), "ID 3" (bottom-left), and "ID 4" (bottom-right). At the bottom, there are "PREVIOUS" and "NEXT" buttons, and a progress indicator with four dots, the second of which is filled.

3 Click **Matrix** and then configure the LFD layout.

MATRIX & ID Select the matrix size and the screen ID to calibrate.

Starting Point ID 1

Matrix 2*2

Show Set ID On

ID 1	ID 2
ID 3	ID 4

PREVIOUS ... NEXT

2-4 Setting the calibration target values

You can set to automatically calibrate the color settings based on the selected LFD or to manually specify the calibration target values.

PICTURE SETTINGS Set the Standard ID you want to copy calibration settings from, or set the details by manual.

1 Standard Screen ID 1 2 Target Settings

3 Luminescence (100cd/m²-1500cd/m²) 500 cd/m²

4 Max ΔE (0.5-4.0) 0.5

5 Max Iteration (1-8) 5

6 Color Temperature (2800K-15000K) 10000 K

X 0.2807

Y 0.2883

PREVIOUS ... NEXT

- 1 **Standard Screen ID:** Can set to automatically calibrate the remaining LFD color settings based on the selected LFD.
- 2 **Target Settings:** Can manually specify the calibration target values.
- 3 **Luminescence:** Can specify the luminance.
- 4 **Max ΔE:** Can specify the target Delta E value.
- 5 **Max Iteration:** Can specify the maximum number of iterations for calibration.
- 6 **Color Temperature:** Can specify the desired color temperature. You can also specify the desired coordinates to set the color temperature of that position.

2-5 Calibrating devices

- 1 Check the set calibration target and then click **Next**.
 - Set the target luminance based on the product specifications.
Target luminance per model
UDE-A/UH55F/UH46N: 500 cd/m²
UDE-B/UM55H/UM46N: 350 cd/m²
UH46F5: 300 cd/m²
VH55R-R: 250 cd/m²

PICTURE SETTINGS

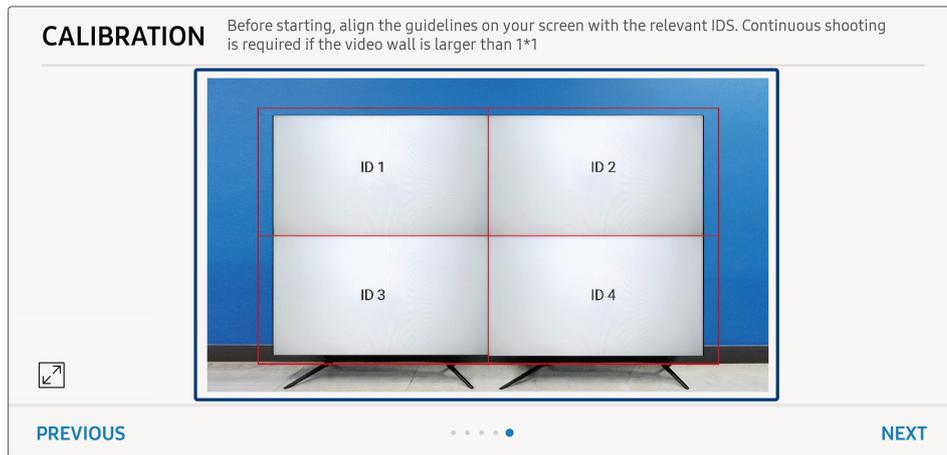
Set the Standard ID you want to copy calibration settings from, or set the details by manual.

Standard Screen ID 1 Target Settings

Luminance <small>(100cd/m²-1500cd/m²)</small>	<input type="text" value="500"/>	cd/m ²	Color Temperature <small>(2800k-15000k)</small>	<input type="text" value="10000"/>	K
Max ΔE <small>(0.5-4.0)</small>	<input type="text" value="0.5"/>		X	<input type="text" value="0.2807"/>	
Max Iteration <small>(1-8)</small>	<input type="text" value="5"/>		Y	<input type="text" value="0.2883"/>	

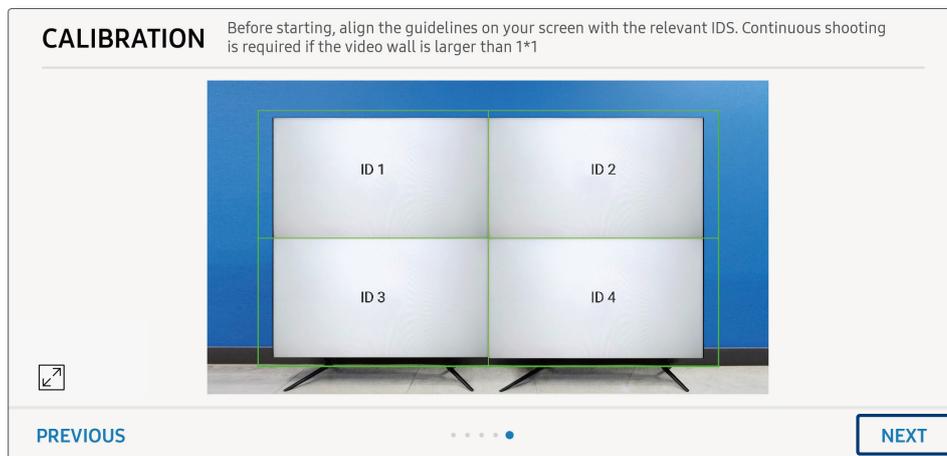
[PREVIOUS](#) ••••• [NEXT](#)

- 2 Illuminate the LFD by using the camera on a mobile device to display the preset layout on the screen.
 - To switch to full screen mode, press .
 - When the LFD is identified, the red guideline turns green.

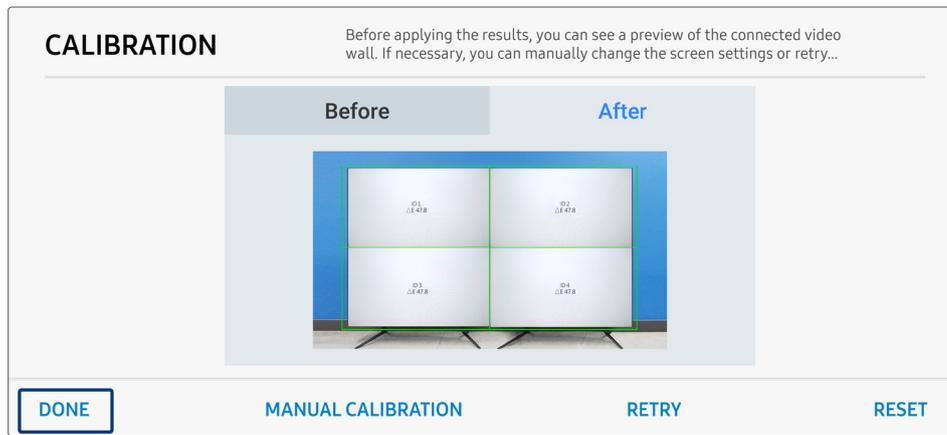


 Otherwise, adjust the angle and distance of the camera.

- 3 Click **NEXT** to run calibration.
 - Do not move the camera during calibration. If calibration is run with the LFD not identified correctly, the color settings may not be calibrated as you want.
 - After calibration, you can compare the results with the previous screen in the **Before** and **After** tabs.



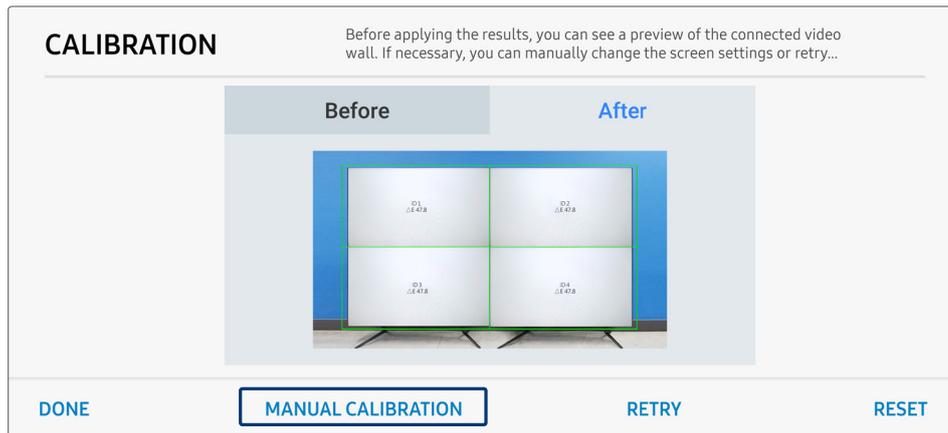
- 4 Click **DONE** to apply the calibration results.
 - To attempt calibration again, click **RETRY**.



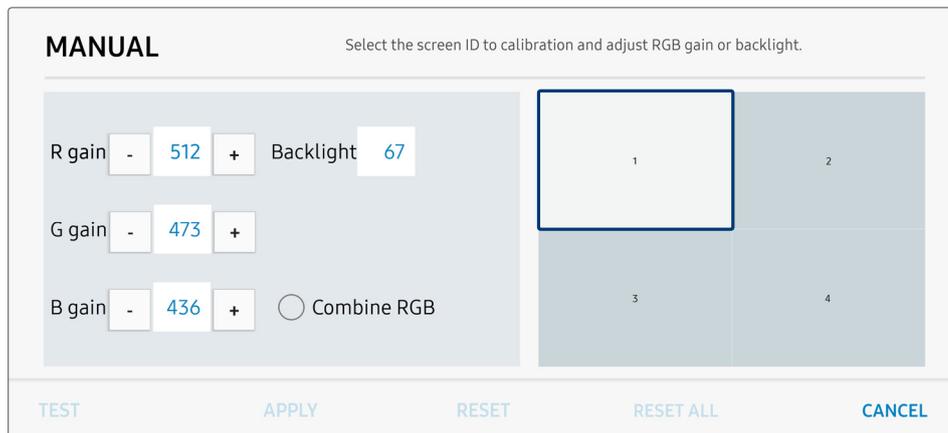
2-6 Manual adjustment after calibration

After calibration, you can manually fine-tune the RGB and Backlight settings, if required.

- 1 On the Finish Calibration screen, click **MANUAL CALIBRATION**.

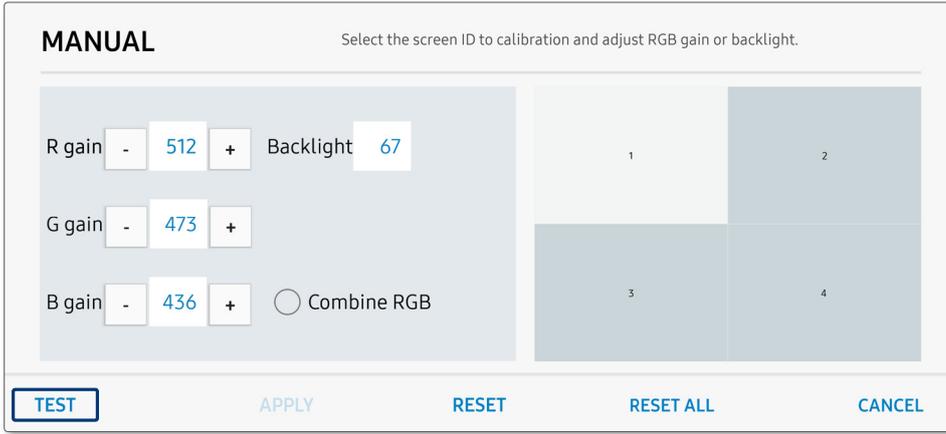


- 2 From the preview section, click the LFD to manually adjust the color settings.



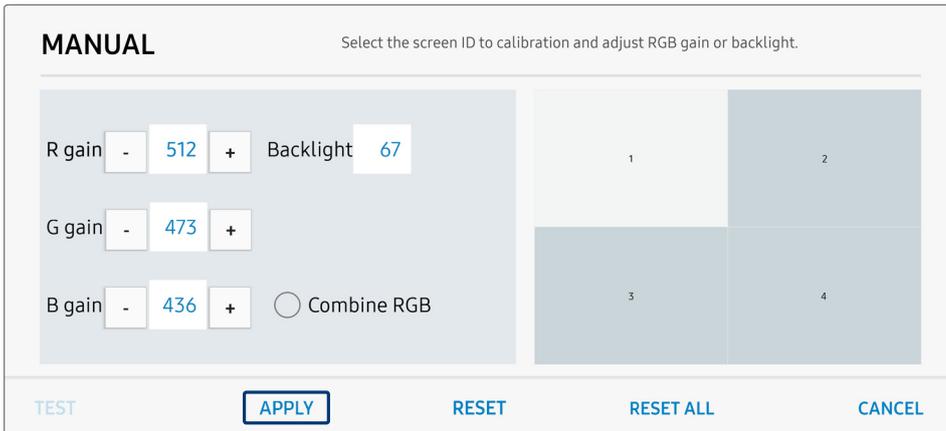
- 3 Specify the RGB and Backlight settings and then click **TEST**.
- When you check Combine RGB, calibration is run based on the RGB settings. Adjusting an R, G or B value will automatically adjust the other two values accordingly.
 - To adjust the RGB values, press **-** / **+**.

 The range of adjustment values may vary depending on the LFD device type.



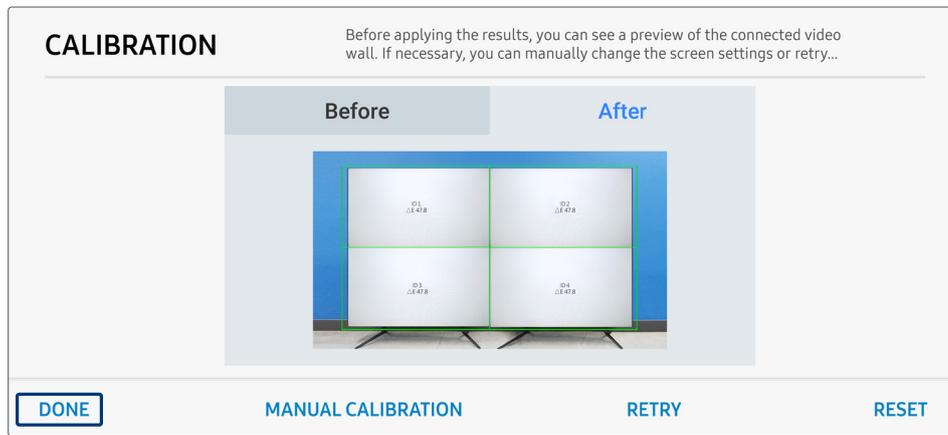
The screenshot shows the 'MANUAL' calibration interface. At the top, it says 'MANUAL' and 'Select the screen ID to calibration and adjust RGB gain or backlight.' Below this, there are four numbered calibration points (1, 2, 3, 4) arranged in a 2x2 grid. On the left side, there are input fields for 'R gain' (512), 'G gain' (473), and 'B gain' (436), each with minus and plus buttons. A 'Backlight' field is set to 67. There is a 'Combine RGB' checkbox which is currently unchecked. At the bottom, there are five buttons: 'TEST' (highlighted with a blue border), 'APPLY', 'RESET', 'RESET ALL', and 'CANCEL'.

- 4 Click **APPLY**.
- The RGB and Backlight values are applied.



This screenshot is identical to the previous one, showing the 'MANUAL' calibration interface. The only difference is that the 'APPLY' button at the bottom is now highlighted with a blue border, indicating it has been selected.

- 5 Click **DONE**.
 - Calibration is complete.



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