5-029-334-**11** (1)

SONY

Display Cabinet
Display Controller

Operating Instructions

Before operating the unit, please read this manual and the supplied Before Using This Unit document thoroughly and retain it for future reference.

ZRD-C12A/ZRD-C15A/ZRD-B12A/ZRD-B15A
ZRCT-300

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Please Read This First

Manual Structure

This product includes the following manuals to be used according to the situation.

Before Using This Unit (ZRD-C12A/ZRD-C15A/ ZRD-B12A/ZRD-B15A, ZRCT-300)
This includes important safety precautions, specifications, etc.

Installation Manual
This includes information on installation, initial setup, equipment adjustment procedures, etc. Refer to this manual when changing equipment settings or performing readjustments after installation as well.

Operating Instructions (this document)
This includes information on video input selection, picture quality adjustment, parts identification, etc. Refer to this manual when performing general operations.

Service Manual
This is intended for use by service personnel and includes information on diagnosing malfunctions and instructions on repair.

Condensation

If the unit is suddenly taken from a cold to a warm location, or if ambient temperature suddenly rises, moisture may form on the outer surface of the unit and/or inside of the unit. This is known as condensation. If condensation occurs, turn off the unit and wait until the condensation clears before operating the unit. Operating the unit while condensation is present may damage the unit.

Security

- SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND RESULTING FROM A FAILURE TO IMPLEMENT PROPER SECURITY MEASURES ON TRANSMISSION DEVICES, UNAVOIDABLE DATA LEAKS RESULTING FROM TRANSMISSION SPECIFICATIONS, OR SECURITY PROBLEMS OF ANY KIND.
- Depending on the operating environment, unauthorized third parties on the network may be able to access the unit. When connecting the unit to the network, be sure to confirm that the network is protected securely.
- This unit is equipped with a maintenance function performed via a network. Maintenance may be performed with your consent.
- From a safety standpoint, when using the unit connected with the network, it is strongly recommended to access the Control window via a Web browser and change the access limitation settings from the factory preset values.
  Also, it is recommended that you set a password with a sufficiently long character string that is hard to guess by others, and that you store it safely.
- Do not browse any other website in the Web browser while making settings or after making settings. Since the login status remains in the Web browser, close the Web browser when you complete the settings to prevent unauthorized third parties from using the unit or harmful programs from running.
- When connecting this product to a network, connect via a system that provides a protection function, such as a router or firewall. If connected without such protection, security issues may occur.

Burn-in

Permanent burn-in may occur if a still image is displayed for a prolonged period of time. Playing a video with moving images may reduce the severity of burn-in once it occurs, but it will not remove the burn-in completely.

Defective pixels

Thus a very small proportion of pixels may be “stuck,” either always off (black), always on (red, green, or blue), or flashing. In addition, such “stuck” pixels may appear spontaneously over a long period of use due to the physical characteristics of the organic light-emitting diodes.
Such occurrences do not indicate a malfunction.

General Precautions

- Avoid getting the product wet. In the event of accidental contact with liquids, do not turn on the power, and contact a service representative.

- If an error or malfunction occurs or if foreign matter enters the interior of the product, turn off the power and discontinue use, and contact a service representative.
- Do not subject the front panel of the Display Cabinets to damage or shocks.
- Request cleaning and maintenance periodically from a service representative.

Precautions on viewing and displaying 3D images

- You should only use the 3D glasses for watching 3D video images.
- While watching 3D images, a viewer may experience unpleasant symptoms such as eye fatigue, tiredness, and feeling sick.
  When watching 3D images, it is advisable to take breaks periodically. The length and frequency of the necessary breaks will vary depending on the content being displayed and the physical condition of the viewer.
  If the viewer watching 3D images experiences any unpleasant symptoms, stop watching 3D images until the viewer recovers, and consider recommending that the viewer consult a doctor if necessary.
  Note that the vision of children (especially those under 6 years old) is still in the developmental stage.
  Adults should supervise their children to ensure that they are following the above precautions.
  If the content is watched at a closer distance than expected, the fatigue and other effects described above may be more pronounced.
  Take measures such as considering the length, content, and interval of the displayed content, and posting of warning signs.
- Not for viewing by children without proper adult supervision.

Precautions on the environment when displaying 3D images

Flickering or flashing lights may be seen when using 3D glasses under some fluorescent lights or LED bulbs.
Very rarely, this flickering or flashing light may cause symptoms of light-sensitive seizures such as convulsions or fainting.
This flickering or flashing light may cause symptoms of convulsions or fainting, even in those who have never experienced such symptoms before.
Do not turn on these lights (light sources) when using 3D glasses.
Be sure to inform the contractor who undertakes the installation or maintenance work about these effects.

Precautions regarding the effect on medical devices

The display cabinet uses strong magnets.
There are areas where the magnetic flux density is likely to be 300 mT or more on the surface that is touched during installation or maintenance work.
This may seriously affect medical devices such as defibrillators, pacemakers, and variable pressure shunts to treat hydrocephalus.
Keep users of these medical devices away from areas where installation and maintenance work is being performed or where display cabinets are stored.
There is also magnetic flux leakage from the viewing surface, which may affect users of these medical devices when they approach the display cabinet.
Take measures such as posting warning signs depending on the installation conditions.
Be sure to inform the contractor who undertakes the installation or maintenance work about these effects.

Precautions on visually induced motion sickness (VIMS) and staggering

Depending on the displayed content, display size, and viewing location (distance), a viewer may experience VIMS symptoms such as staggering or nausea.
The symptoms of VIMS may be more pronounced after some time rather than during or immediately after viewing. Take measures such as posting warning signs.
Furthermore, the movement of a wide part of the image to the same direction may induce staggering. Pay close attention to the displayed contents and installation location (direction) when installing the product in a position where it can be seen from stairs, escalators, landings, or other places that are considered dangerous when staggering.

Other precaution

- The life expectancy of the electrolytic capacitor is about 5 years under normal operating temperatures and normal usage (8 hours per day; 25 days per month). If usage exceeds the above normal usage frequency, the life expectancy may be reduced correspondingly.
- The fan is a consumable part that will need periodic replacement.
  When operating at room temperature, a normal replacement cycle will be about 4 years.
  However, this replacement cycle represents only a general guideline and does not imply that the life expectancy of this part is guaranteed. For details on parts replacement, contact your dealer. (ZRCT-300 only)

Notes

- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
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Overview

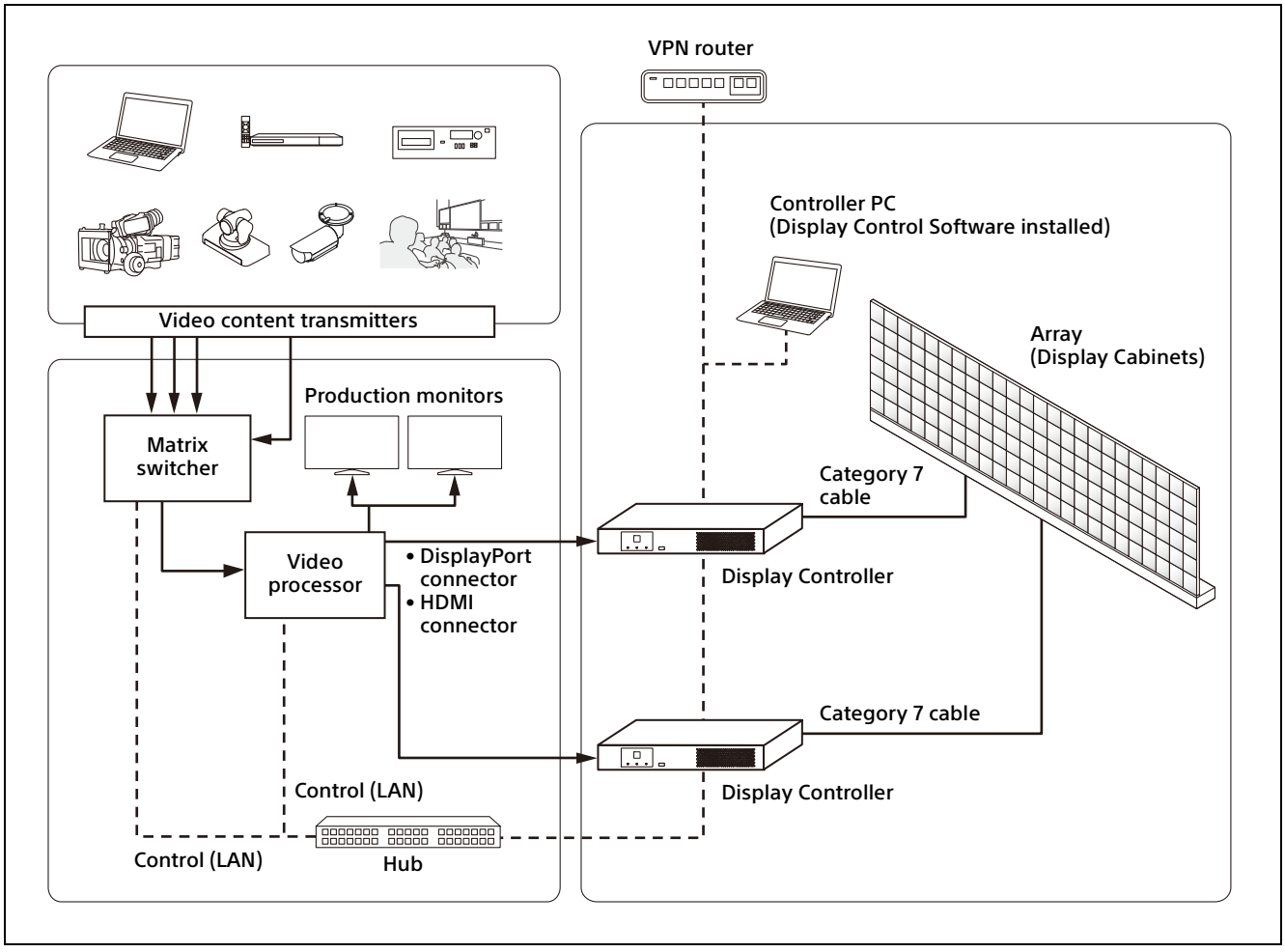
You can connect the Display Cabinets based on the installation location and intended use, convert the video content signals that are input to the Display Controller based on the array size, and output the signals onto the Display Cabinets. 4K2K video can be controlled via a single display controller. Control of the Display Cabinets is performed from a computer on which Display Control Software is installed. Daisy-chain connections can be configured between Display Cabinets using a power cord (not supplied) and a Category 7 cable (not supplied). (For details on the number of Display Cabinets that can be connected, refer to the Installation Manual.)

Caution

When connecting the Display Controller to a network, use a network that is built to control and regulate access from the Internet, such as a LAN. Direct connection from the Internet increases security risk.

System Configuration Diagram

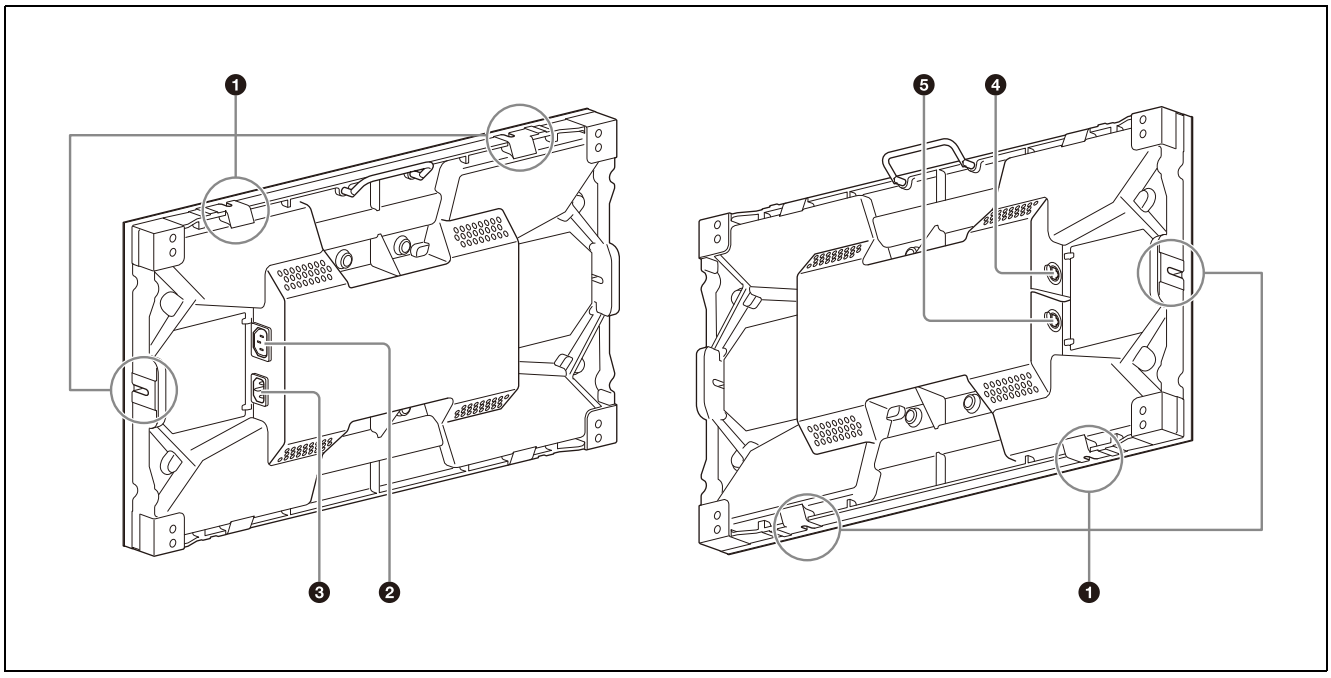
Configuration example of the entire system



Parts Identification

ZRD-C12A/ZRD-C15A/ZRD-B12A/ZRD-B15A Display Cabinet

Left / Right



Caution

Do not connect the OUT and IN connectors to a hub. The input/output signals for these connectors are unique to the product and are not Ethernet signals. In particular, be aware that connecting these connectors to a PoE injector hub may result in damage to the product.

❶ **Cabinet joints**
Connect to other Display Cabinets.
There is one cabinet joint on the right side, one on the left side, two on top, and two on the bottom.

❷ **~ OUT (AC power output) connector**
Use a power cord (not supplied) to connect this connector to the ~ IN (AC power input) connector on the succeeding Display Cabinet in the daisy-chain connection.
This connector is not used for the last Display Cabinet in the daisy-chain connection.

❸ **~ IN (AC power input) connector**
Use a power cord (not supplied) to connect this connector to the ~ OUT (AC power output) connector on the preceding Display Cabinet in the daisy-chain connection.
For the first Display Cabinet in the daisy-chain connection, use a power cord (not supplied) to connect this connector to the circuit breaker.

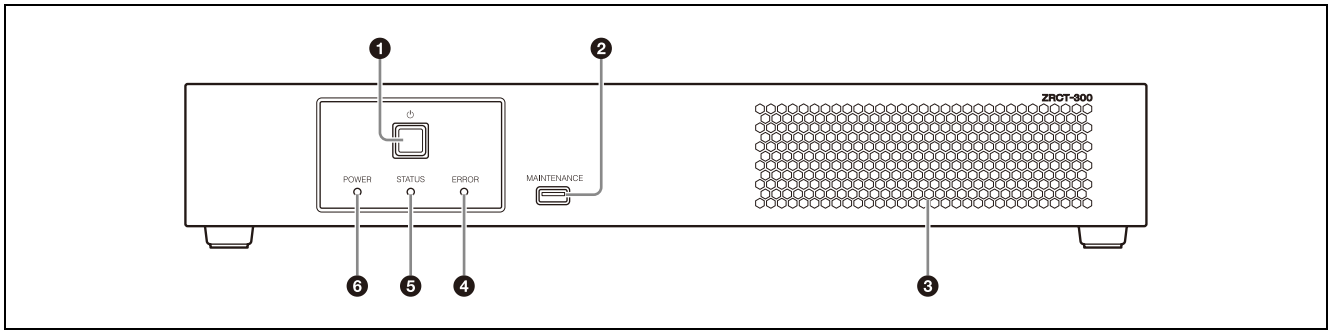
❹ **OUT (cabinet output) connector (RJ-45)**
Use a Category 7 cable (not supplied) to connect this connector to the IN (cabinet input) connector on the succeeding Display Cabinet in the daisy-chain connection.
This connector is not used for the last Display Cabinet in the daisy-chain connection.

❺ IN (cabinet input) connector (RJ-45)
Use a Category 7 cable (not supplied) to connect this connector to the OUT (cabinet output) connector on the preceding Display Cabinet in the daisy-chain connection.

For the first Display Cabinet in the daisy-chain connection, use a Category 7 cable (not supplied) to connect this connector to the OUTPUT connector on the Display Controller.

ZRCT-300 Display Controller

Front



❶ ⏻ (power) switch
Turns the Display Controller on/off.

◆ For details, see "Turning the Power On/Off" (page 10).

❷ MAINTENANCE connector (USB, Type A)
This connector is used for maintenance servicing.

❸ Intake vent
Do not block the intake vent, as doing so will result in interior heat buildup which may result in fire or malfunction.

❹ ERROR indicator
Blinks when warnings occur, and lights when errors occur.

◆ For details, see "Troubleshooting" (page 22) and "Error Codes" (page 24).

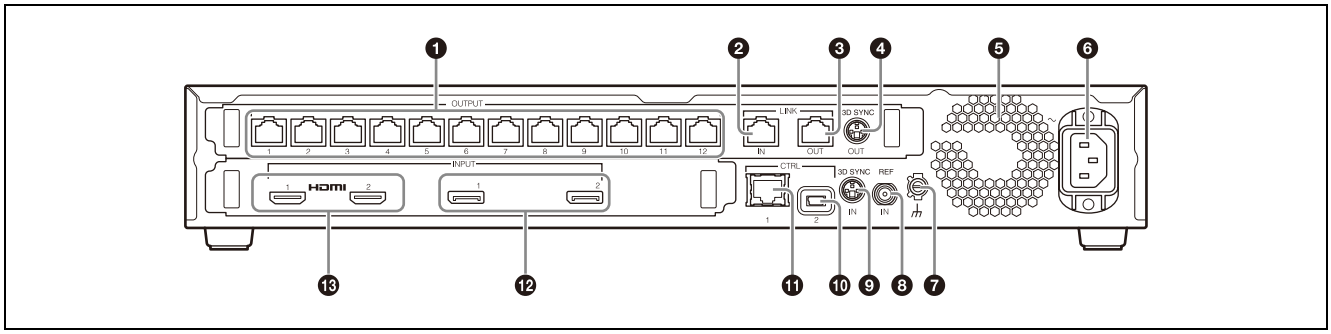
❺ STATUS indicator
Indicates the power status of the Display Cabinets.
The indicator lights green when all the Display Cabinets that are connected to the Display Controller according to the Display Cabinet layout settings are turned on.
If any of the Display Cabinets are turned off according to the Display Cabinet layout settings, the indicator turns off.

◆ For details on the Display Cabinet layout settings, consult your system administrator.

❻ POWER indicator
Indicates the power status of the Display Controller.

Indicator	Status
Off	The Display Controller is turned off.
Lit orange	The Display Controller is in standby mode.
Lit green	The Display Controller is turned on (normal operating status).
Blinking green	The Display Controller is starting up or shutting down.
Lit red	The forced standby mode has been entered. ◆ For details, see "Entering the forced standby mode" (page 23) in the "Troubleshooting."

Rear



Caution

Do not connect the OUTPUT, LINK IN, and LINK OUT connectors to a hub. The input/output signals for these connectors are unique to the product and are not Ethernet signals. In particular, be aware that connecting these connectors to a PoE injector hub may result in damage to the product.

❶ **OUTPUT connectors 1 to 12 (RJ-45)**
Use a Category 7 cable (not supplied) to connect this connector to the IN (cabinet input) connector on the Display Cabinet you want to control (first Display Cabinet in the daisy-chain connection).

❷ **LINK IN connector (RJ-45)**
Use this when using multiple Display Controllers to control the Display Cabinets. Use a Category 7 cable (not supplied) to connect this connector to the LINK OUT connector on the Display Controller you want to link.

❸ **LINK OUT connector (RJ-45)**
Use this when using multiple Display Controllers to control the Display Cabinets. Use a Category 7 cable (not supplied) to connect this connector to the LINK IN connector on the Display Controller you want to link.

❹ **3D SYNC OUT connector (mini-DIN, 3-pin)**
Outputs 3D sync signals.

❺ **Exhaust vent/fan**
Do not block the exhaust vent, as doing so will result in interior heat buildup which may result in fire or malfunction.

❻ **~ IN (AC power input) connector**
Use a power cord (not supplied) to connect this connector to the circuit breaker.

❼ **⏚ (earth) terminal**
Connect this to the earth conductor of the system.

Caution

Failure to connect the system to the protective earth may result in electric shock. Be sure to connect to the earth conductor, even during operation inspections.

❽ **REF IN (external reference signal input) connector (BNC)**
Inputs external reference signals used for synchronization.
For details, refer to the Installation Manual.

❾ **3D SYNC IN connector (mini-DIN, 3-pin)**
Inputs 3D sync signals.

❿ **CTRL (control) connector 2 (Mini-USB, Type B)**
Use this to connect to the controller PC via a USB (SERIAL) connection.
Use a USB cable (not supplied) to connect this to a USB port on the controller PC.

⓫ **CTRL (control) connector 1 (RJ-45)**
Use this to connect to the controller PC via an Ethernet (LAN) connection.
Use an Ethernet cable (Category 5, not supplied) to connect this to a LAN port on the controller PC.

⓬ **DisplayPort (video input) connectors 1 and 2**
Connect these to the video processor.

⓭ **HDMI (video input) connectors 1 and 2**
Connect these to the video processor.

Caution

When inputting 4K-equivalent HDMI signals, use a cable that is marked with the Premium High Speed HDMI logo and is within 3 m in length.
We recommend using Premium High Speed HDMI cables that are within 3 m in length even when you are not inputting 4K-equivalent HDMI signals.

Turning the Power On/ Off

Turning the Power On

You can turn on the system's power using one of three methods. Consult your system administrator regarding which method to use.
- Turning the power on via the Display Controller
- Turning the power on via Display Control Software
- Turning the power on by connecting the power cord to the Display Controller

Caution

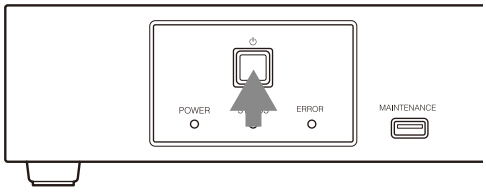
Always connect the Display Cabinet's power cord to the circuit breaker.
If pictures are not displayed within 5 minutes of turning on the system's power, try turning the system's power off and then on again.

Note

If a startup delay is configured in the [Function] - [System Settings] - [Cabinet Power On Delay] setting of Display Control Software, the Display Cabinets will turn on according to the configured delay.

Turning the power on via the Display Controller

1 **Press and hold the power switch on the Display Controller for about 2 seconds.**
Turn on all the Display Controllers by pressing each of their power switches.



When a Display Controller turns on, its POWER indicator lights green.
When a Display Cabinet turns on, its STATUS indicator lights green.

To enter standby mode
Press the power switch on a Display Controller twice to set the Display Controller and Display Cabinets to standby mode.
To return to the power ON state, press the power switch again.

Note

If you press the power switch only once in the power ON state, the POWER indicator will blink red for 2 seconds, but the standby mode will not be entered. You can enter standby mode by pressing the power switch again while the indicator is still blinking red.

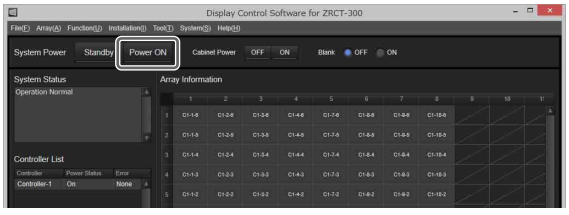
2 Turn on the video source equipment.

Turning the power on via Display Control Software

The initial settings must be configured beforehand to turn the power on via Display Control Software. For details, consult your system administrator.

1 Start the controller PC, and start Display Control Software.

2 Click [Power ON] in the main screen.



Under default settings, all Display Controllers and Display Cabinets will turn on.
When a Display Controller turns on, its POWER indicator lights green.
When a Display Cabinet turns on, its STATUS indicator lights green.

When you click [Standby]
The power status of all connected Display Controllers and Display Cabinets will enter standby mode, and the main screen will remain displayed.
Click [Power ON] to turn the power on again.

3 Turn on the video source equipment.

Turning the power on by connecting the power cord to the Display Controller

When [Function] - [System Settings] - [Direct Array Power On] is set to [ON] in Display Control Software beforehand, simply connecting the Display Controller's power cord will turn on the Display Controller and Display Cabinets.

1 Connect the power cord to the ∿ IN connector on the Display Controller.
When a Display Controller turns on, its POWER indicator will switch from blinking red/orange to remaining lit green.
When a Display Cabinet turns on, its STATUS indicator lights green.

2 Turn on the video source equipment.

Turning the Power Off

You can turn off the system's power using one of two methods.
- Turning the power off via the Display Controller
- Turning the power off via Display Control Software

Turning the power off via the Display Controller

1 Turn off the video source equipment.

2 Press the power switch on the Display Controller twice.
The Display Controller and Display Cabinets will enter standby mode.

3 If necessary, disconnect the AC power supply.

Turning the power off via Display Control Software

1 Turn off the video source equipment.

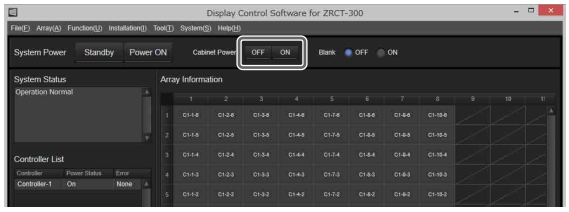
2 Click [Standby] in the main screen of Display Control Software.
The Display Controller and Display Cabinets will enter standby mode.

3 If necessary, disconnect the AC power supply.

Setting only the power of the Display Cabinet to standby mode

You can set only the power of the Display Cabinet to standby mode without disconnecting the video signal transmitter and the Display Controller. It is only valid when the system is turned on.

Click [OFF] in [Cabinet Power] on the main screen of Display Control Software. If [ON] is selected, the Display Cabinet will turn on.



Turning the power off automatically

When [Function] - [System Settings] - [Auto Power Saving] is set to [ON] in Display Control Software and no signal is detected from the selected input, the Display Controller and Display Cabinets enter standby mode.

Selecting the Video Input

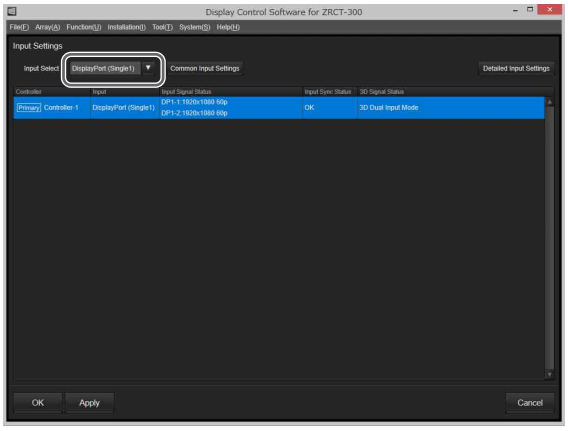
Select the video signals that will be input.
The settings configured on the primary controller will be applied to all the other Display Controllers, including the subordinate controllers (hereafter referred to as “sub controllers”). Sub controllers cannot be configured individually.

Caution

If the a primary controller is not configured via Display Control Software or the primary controller is not turned on at the time the [Input Settings] screen is displayed, video input selection cannot be performed. In addition, the video input settings will not be applied to the sub controllers if they are not turned on.

1 Select [Input Settings] in the [Array] menu on the main screen of Display Control Software.

2 Select the input channel in [Input Select], and click [OK] or [Apply].
The video input changes.



[HDMI1]: Use HDMI connector 1 to display pictures.

[HDMI2]: Use HDMI connector 2 to display pictures.

[DisplayPort (Single1)]: Use DisplayPort connector 1 to display the picture.

[DisplayPort (Single2)]: Use DisplayPort connector 2 to display the picture.

◆ For details on the supported video signals for display, see “Signal Formats” (page 26).

[DisplayPort (Dual)]: Use two DisplayPort connectors to display pictures as large as 4K 100p/120p.

Note

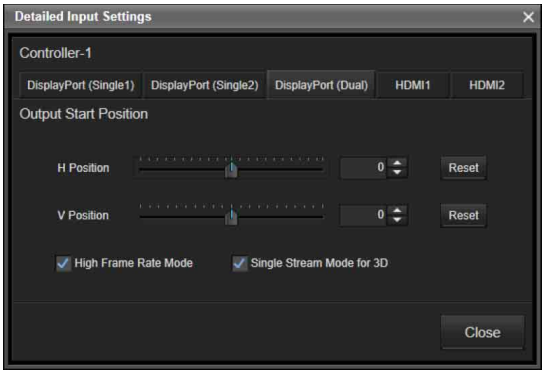
If you are only inputting single-stream signals that are 50p/60p or lower, we recommend clicking [Detailed Input Settings] and clearing the [High Frame Rate Mode] checkbox in the [Detailed Input Settings] screen.

3 **Click [OK] or [Apply] to apply the settings.**
The setting values will be registered to the Display Controller and saved to Display Control Software.

Changing the Display Starting Positions of Pictures

You can change the display positions for each picture.
For example, you can move a low-resolution picture from the top left of the screen to the center.

1 **Click [Detailed Input Settings] in the [Input Settings] screen.**
The [Detailed Input Settings] screen appears.



2 **Click the tab ([DisplayPort (Single1)], [DisplayPort (Single2)], [DisplayPort (Dual)], [HDMI1], or [HDMI2]) of the video signal for which you want to change the display starting position.**

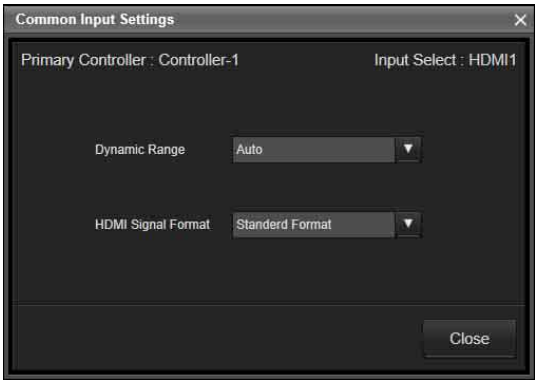
3 **Use the sliders and buttons for [H Position] and [V Position] to specify the horizontal and vertical positions.**
The settings are reflected in the picture immediately after they are configured.
For details, refer to the Installation Manual.

4 **Click [Close].**
The [Detailed Input Settings] screen closes.

Configuring the Input Level and Signal Format for HDMI Inputs

1 **Select [HDMI1] or [HDMI2] for [Input Select] in the [Input Settings] screen, and click [OK] or [Apply].**
The video input changes.

2 **Click [Common Input Settings].**
The [Common Input Settings] screen appears.
The settings configured on the primary controller will be applied to all the other Display Controllers, including the sub controllers. Sub controllers cannot be configured individually.



3 **Configure each setting.**

[Dynamic Range]: Select the video input level for HDMI connectors 1 and 2.
- [Auto]: Determine the video input level automatically.
- [Limited]: Select this when the video input level is between 16 to 235.
- [Full]: Select this when the video input level is between 0 to 255.

[HDMI Signal Format]: Select the video signal format.
- [Enhanced Format]: Display pictures in a higher definition HDMI format.
- [Standard Format]: Display pictures in a standard HDMI format.

Caution
Select [Standard Format] when an input device that does not support HDMI 2.0 is connected.

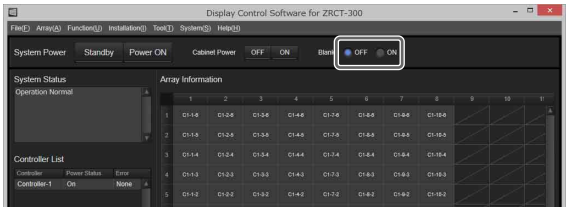
4 **When you are finished configuring settings, click [Close].**

Caution
The items in the [Common Input Settings] screen cannot be configured when an input channel other than HDMI is selected in [Input Select].

Displaying a Black Picture on the Screen

When switching the video signals, use this function when you do not want to display the image at the moment of switching. Even when displaying images from multiple Display Controllers, all images are switched at the same time.

Click [ON] in [Blank] on the main screen of Display Control Software. If [OFF] is selected, images from the video signal source will be displayed.



Note
Set [Blank] to [ON] in standby mode, click [Power ON] to display the black picture on the screen, and start the system. After that, set [Blank] to [OFF] to display the images.

Adjusting the Picture Quality

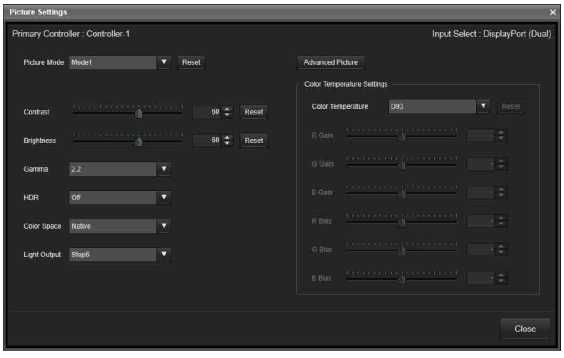
Adjust the contrast, brightness, and other picture quality settings.
The settings configured on the primary controller will be applied to all the other Display Controllers, including the sub controllers. Sub controllers cannot be configured individually.

Caution

If the a primary controller is not configured via Display Control Software or the primary controller is not turned on at the time the [Picture Settings] screen is displayed, picture quality adjustment cannot be performed. In addition, the picture quality settings will not be applied to the sub controllers if they are not turned on.

1 Select [Picture Settings] in the [Array] menu on the main screen of Display Control Software.

2 Configure each setting.
The values currently configured on the primary controller are displayed on the [Picture Settings] screen.
The settings are reflected in the picture immediately after they are configured.



[Picture Mode]: Select from [Mode1] to [Mode10] to display the setting values for [Contrast] to [Color Temperature Settings]. If necessary, change the values for [Contrast] to [Color Temperature Settings]. The setting values are identical for each mode under factory default settings.

[Contrast]: Use the slider and buttons to adjust the contrast.
Setting range: 0 to 100
Default value: 60

[Brightness]: Use the slider and buttons to adjust the brightness.
Setting range: 0 to 100
Default value: 50

[Gamma]: Select the gamma correction value.
Default value: 2.2

Caution

- This product is not a medical device. The device cannot be used for medical examinations, even when [DICOM SIM] is selected.
- The [Gamma] settings will be disabled if [HDR] is set to a setting other than [Off].

[HDR]: Select the playback mode for HDR (high dynamic range) content.
- [Off]
- [SMPTE ST 2084 (B Series)]
- [SMPTE ST 2084 (C Series)]
- [SMPTE ST 2084 (Sim.)]
- [ITU-R BT.2100 (HLG)]: Display the HLG (Hybrid Log Gamma) image specified by recommendation ITU-R BT.2100. It takes priority over the value set in [Gamma].
- [S-Log3]
- [S-Log3 (Live)]: Display the HDR image with system gamma added to the S-Log 3 input signals. It takes priority over the value set in [Gamma].

[Color Space]: Select the color space.
- [sRGB]: Display the picture using the sRGB color space standard.
- [Native]: Display the picture with the Display Cabinet's color space of the three primary color chromaticity points.
- [AdobeRGB]: Display the picture using the Adobe RGB color space standard.
- [DCI_P3]: Display the picture using the DCI color space standard.
- [BT.2020]: Display the picture using the BT.2020 color space standard.
- [S-Gamut]/[S-Gamut3]/[SGamut3.Cine]: Display the picture using the color space defined by Sony.
- [Custom9] to [Custom10]: Display pictures using a custom color space.

Caution

[AdobeRGB], [DCI_P3], and [BT.2020] do not include the entirety of the color spaces defined by their respective standards.

[Light Output]: Select the output strength to use during low light-source output. The light-source output becomes stronger in order from [Step1] to [Step6].

[Color Temperature Settings]: Select the color temperature in [Color Temperature].

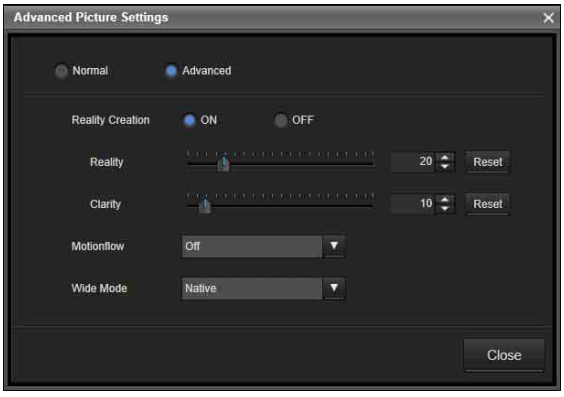
- If you selected [D93], [D65], [D50] or [DCI], proceed to step 4 .
- If you selected [D93 Custom (Offset)], [D65 Custom (Offset)], [D50 Custom (Offset)] or [DCI Custom (Offset)], proceed to step 3.

3 Configure the offset values.

These settings can only be configured when [Color Temperature Settings] is set to "Custom (Offset)" in step 2.
Use the slider and ▲▼ buttons to adjust the contrast.
Setting range: –128 to +127
Default value: 0

4 Set the Advanced Picture function.

Select [Advanced Picture] to display the [Advanced Picture Settings] screen.



[Normal]: Display the picture faithfully according to the input signal.

[Advanced]: Change the settings of the Reality Creation, Motionflow, and Wide Mode functions.

Caution

Depending on input signal, the system may operate using the Normal picture setting.

[Reality Creation]: Adjust the definition and noise processing. (Super resolution function)

- [ON]: Change the settings of the Reality Creation function to improve the texture and sense of detail.
  [Reality]: Use the slide lever and ▲▼ to adjust the definition.
  [Clarity]: Use the slide lever and ▲▼ to adjust the noise processing.
- [OFF]: Turn off the Reality Creation function.

[Motionflow]

- [OFF]: Turn off the Motionflow function.
- [1] to [5]: The larger the setting value, the smoother the motion.

Caution

Depending on the picture, changing the settings may have no effect.

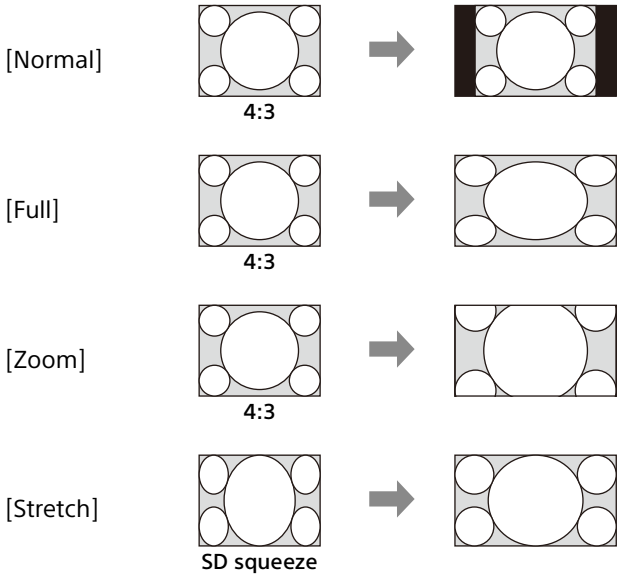
[Wide Mode]

- [Normal]: Fit an image into the screen size without being cut off while its aspect ratio is maintained.
- [Full]: Fit an image into the screen size without being cut off by changing its aspect ratio.
- [Zoom]: Cut off an image to fit into the screen size with its aspect ratio maintained.
- [Stretch]: Display standard TV signals (SD signals) in a 16:9 aspect ratio. For signals other than standard TV signals, the display will be the same as Normal.
- [Native]: Display the input image in dot-by-dot format.

Caution

- Squeezed standard TV signals are displayed properly when set to [Stretch].
- Note that compressing or stretching the screen using the Wide Mode function, etc., for purposes of profit or public viewing may infringe on the rights of authors protected under copyright law.

Display example



5 When you are finished configuring settings, click [Close].

Displaying 3D Video

Note

In this document, the signals for the left and right eyes are referred to as the L and R signals respectively.
For details, refer to the Installation Manual.

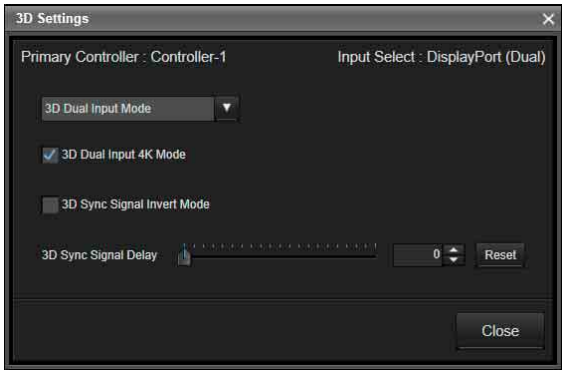
Caution

3D video display is not supported for HDMI signals.

3D frame sequential mode:
This mode alternately inputs the two video signals (L signal and R signal) to the DisplayPort connector and outputs the 3D image from the Display Cabinet.
Generated 3D sync signals based on 3D sync signal inputs from the 3D SYNC IN connector are output from the 3D SYNC OUT connector according to the picture output's timing.

3D dual input mode:
This mode simultaneously inputs the two video signals (L signal and R signal) to the DisplayPort connector and outputs 3D images from the Display Cabinet.
Internally generated 3D sync signals are output from the 3D SYNC OUT connector according to the picture output's timing.

Select [3D Settings] in the [Array] menu on the main screen of Display Control Software to display the [3D Settings] screen.



3D Format: Select from the drop-down list.
[3D Dual Input 4K Mode]: Clear this checkbox for 3D video other than 4K. It works only if [3D Dual Input Mode] is set.
[3D Sync Signal Invert Mode]: Select this checkbox to invert the L and R signals.

[3D Sync Signal Delay]: Use the slider or buttons to adjust the phase (when 3D video is not displayed properly). Moving the slider also changes the number value. Clicking [Reset] restores the default value.

Note

Inversion and phase adjustments can be configured for both mixed L/R and separated L/R. The settings are reflected in the picture immediately after they are configured.

Synchronizing with External Sync Signals

Inputting External Sync Signals

Input the external sync signal to the REF IN (external sync signals input) connector on the primary controller via a BNC cable.

Note

The following external sync signals are supported.

- HD tri-level sync (0.6 Vp-p/75Ω/negative sync)
- SD black burst/composite sync (0.286 Vp-p/75Ω/negative sync)

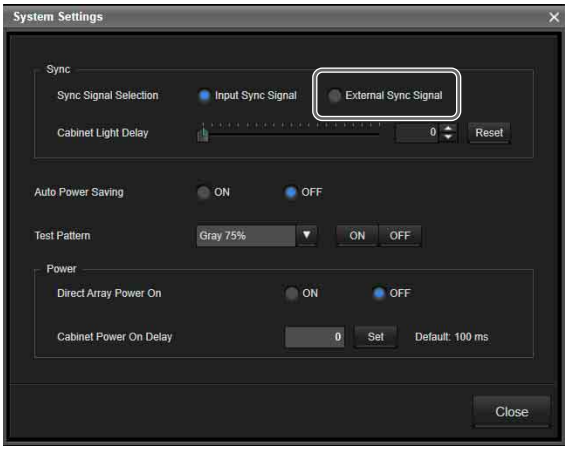
Enabling External Synchronization

Caution

If a primary controller is not configured with Display Control Software or the primary controller is not turned on, the external synchronization cannot be enabled.

1 **Select [Function] in the main screen of Display Control Software, and then select [System Settings].**

2 **Select [External Sync Signal] in [Sync Signal Selection] under [Sync] in the [System Settings] screen.**
External synchronization is enabled immediately.



Adjusting the light-up delay time for Display Cabinets

Use the slider and ▲▼ buttons for [Cabinet Light Delay] under [Sync] to specify the light-up delay time (0 to 4000).

Using Network Features

Connection to the network allows you to operate the following features:

- Changing the password.
- Setting the ADCP protocol.
- Setting the support network monitoring protocol (SNMP).

Notes

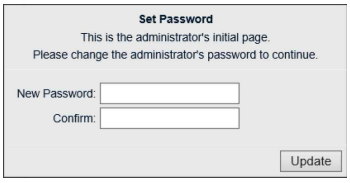
- When connecting the Display Controller with the network, consult with the network administrator. The network must be secured.
- When connecting the Display Controller to a network, use a network that is built to control and regulate access from the Internet, such as a LAN. Direct connection from the Internet increases security risk.
- SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND RESULTING FROM A FAILURE TO IMPLEMENT PROPER SECURITY MEASURES ON TRANSMISSION DEVICES, UNAVOIDABLE DATA LEAKS RESULTING FROM TRANSMISSION SPECIFICATIONS, OR SECURITY PROBLEMS OF ANY KIND.
- Depending on the operating environment, unauthorized third parties on the network may be able to access the unit. When connecting the unit to the network, be sure to confirm that the network is protected securely.
- When using the Display Controller connected with the network, access the control window via a Web browser. It is recommended to change the password regularly.
- When the setting on the Web browser is completed, close the Web browser to log out.
- The menu displays used for the explanation below may be different depending on the model you are using.
- Supported Web browsers are Internet Explorer 11, Microsoft Edge (Chromium), Google Chrome, Safari.
- The menu displays only English.
- If the browser of your computer is set to [Use a proxy server] when you have access to the Display Controller from your computer, click the check mark to set accessing without using a proxy server.
- IPv6 is not supported.

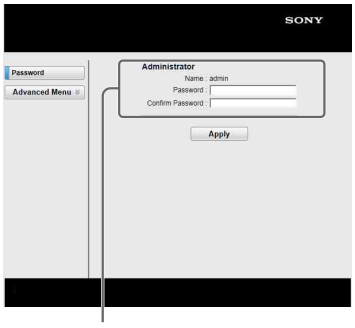
Displaying the Control Window of the Display Controller with a Web Browser

1 Connect the LAN cable.

2 Start a web browser on the computer, enter the following in the address field, then press the Enter key on your computer.
http://xxx.xxx.xxx.xxx
(xxx.xxx.xxx.xxx: IP address for the Display Controller)

When you access the Web page for the first time, input “admin” as the user name and “Adm1nS0ny” as the password in the authentication dialog.
When you log in for the first time, the window that prompts you to change the password is displayed. Follow the instructions on the screen to change the password.
The name of the administrator is preset to “admin.”





Entry area for [Administrator]

The password can be changed in the Password page. When you change the password, input a new password.
The password of the administrator and user should be 8 to 16 characters that includes both alphabet and numeric characters. Alphabet is case-sensitive.
The default password “Adm1nS0ny” cannot be set as a new password.

Note

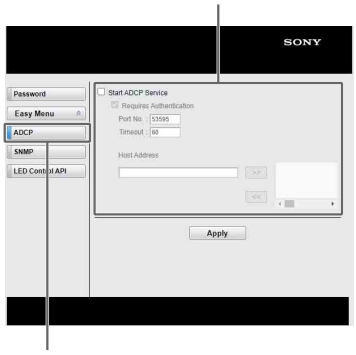
If you forget your password, consult with qualified Sony personnel.
At that time, we may contact you with a special password to reset your password. (However, since the password is for reconfiguration, the available range is limited.)

Setting the Control Protocol of the Display Controller

Change the settings for the control protocol on the Advanced Menu. Entered values will not be applied unless you click on [Apply].

1 Set ADCP.

ADCP Service setting area



ADCP button

Start ADCP Service: Set ADCP to enabled or disabled. Items for ADCP are enabled only when this function is enabled.

-Requires Authentication: Set the authentication for ADCP to enabled or disabled. The password is the same as that of the Web page administrator.

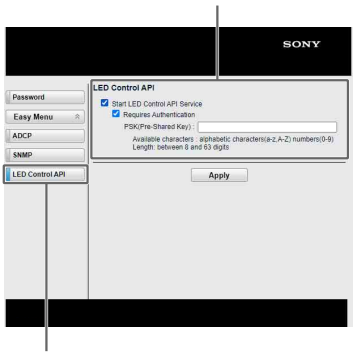
-Port No.: Input the server port of ADCP. The factory default setting is “53595.”

-TimeOut: Input the time (seconds) until ADCP communication is terminated in case it is disconnected. The factory default setting is “60.”

-Host Address: Input the IP address that the ADCP server is allowed to receive. If no IP address is input, receiving commands will be allowed from any IP address. From the moment the IP address is input, access will be allowed only from that input IP address. For security reasons, it is recommended to input an IP address to restrict access.

2 Press the LED Control API button to open the LED Control API page.

LED Control API Service setting area



LED Control API button

Start LED Control API Service: Set the LED Control API function on or off. The factory default setting is off.

Requires Authentication: Set the LED Control API authentication function on or off.

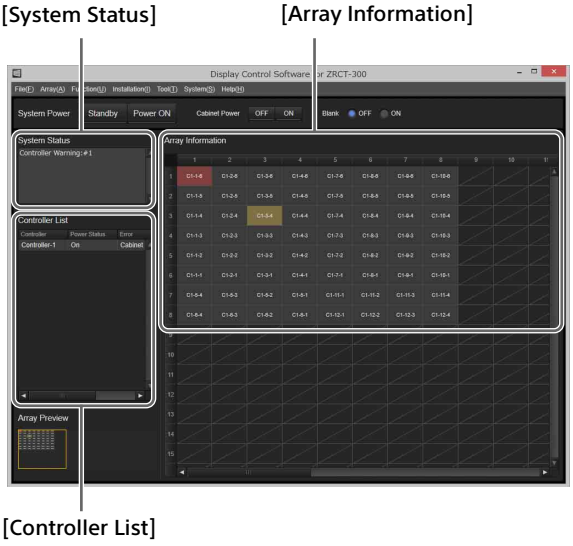
PSK (Pre-Shared Key) (for authentication): Enter the PSK (Pre-Shared Key). Only a string alphanumeric characters with a length of 8 to 63 characters can be entered.

Troubleshooting

Be sure to conduct a check before requesting assistance. If the problem persists, contact your local Sony representative.

Checking the status of the system and devices

You can check the status of the system, Display Controllers, Display Cabinets, and other devices in the main screen.



[System Status]
Displays the status of the system and Display Controllers.

- [Operation Normal]: Operation is normal.
- [Controller Error]: Device operation has stopped due to an error. The Display Controllers and Display Cabinets have entered standby mode, and picture display has stopped.
  For details on the error, check the [Error] column under [Controller List].
- [Controller Warning]: Device operation continues but a warning (fan error, picture sync error, etc.) has occurred.
  Check the details of the warning, and resolve the problem as soon as possible.
  For details on the warning, check the [Error] column under [Controller List].

[Controller List]
Displays the status of each Display Controller.

[Power Status]: "-" indicates that communication with the Display Controller is not possible.

[Error]: "None" indicates that there are no errors or warning.
If an error or warning occurs, see "Error Codes" (page 24), and resolve the problem as soon as possible.

Note

You can view information on a Display Controller by double-clicking its controller number or by right-clicking it and selecting [Controller Info.].

[Array Information]
Displays the status of each Display Cabinet.

- (gray): The Display Cabinet is turned on.
- (black): The Display Cabinet is turned off.
- (maroon): An error has occurred on the Display Cabinet.
- (ocher): A warning has occurred on the Display Cabinet.
- (black): A Display Cabinet does not exist.

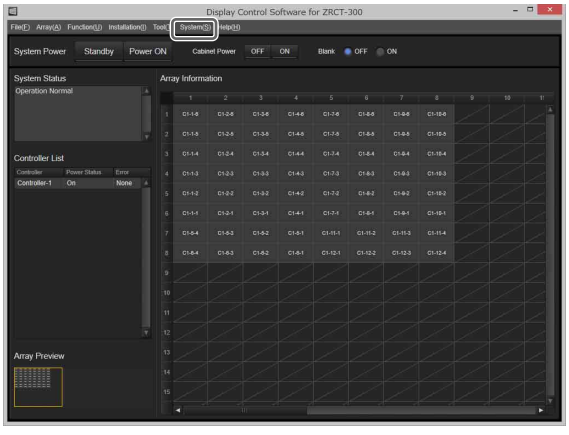
Note

You can view information on a Display Cabinet by double-clicking within its frame or by right-clicking it and selecting [Cabinet Info.].

If the controller PC is slow

By suspending the connection to the Display Controllers, you can avoid slow communication responses that may occur when using other applications, for example.

Select [Disconnect] in the [System] menu on the main screen of Display Control Software to suspend communication with the Display Controllers.



The following dialog box is displayed while communication is suspended.

To reestablish connection
Close the dialog box.

Entering the forced standby mode
If the controller PC hangs, for example, you can force Display Controllers and Display Cabinets into standby mode.

1 **Press and hold the power switch on the Display Controller for at least 5 seconds.**
The forced standby mode is entered, and the POWER indicator lights red.

2 **Press and hold the power switch again for about 2 seconds.**
After the POWER indicator blinks red/orange, the normal standby mode is entered.
The Display Cabinets will also enter the normal standby mode.

Error Codes

When a system error or warning occurs, verify the error code as follows.

For Display Cabinets:

Under [Array Information] in the main screen, double-click within the frame of the Display Cabinet or right-click it and select [Cabinet Info.] to display the [Cabinet Information] screen and the error code.

For Display Controllers:

Under [Controller List] in the main screen, double-click the Display Controller number or right-click it and select [Controller Info.] to display the [Controller Information] screen and the error code.

Display Cabinets

Errors

Error code	Category	Definition	Solution
100	Power	AC Power Supply/HUB Board/RCS Board	Contact your local Sony representative.
111	Temperature	Temperature (RCS)	Check the device environment and remove any obstructions from the intake vent. If the problem persists, contact your local Sony representative.
113		Temperature (Module_1~Module_8)	
150	System	Update (Cabinet FPGA)	Perform update again. If the problem persists, contact your local Sony representative.

Warnings

Warning code	Category	Definition	Solution
311	Temperature	Temperature (RCS)	Check the device environment and remove any obstructions from the intake vent. If the problem persists, contact your local Sony representative.
313		Temperature (Module_1~Module_8)	
321	Board	RCS Board	Turn the power off and turn it on again. If the problem persists, contact your local Sony representative.
330	Connection	Connection (Module_1~Module_8)	Contact your local Sony representative.
331	Communication	Communication (Video Input Signal/ RS485)	Check that all cables are properly connected. If the problem persists, contact your local Sony representative.

Display Controllers

Errors

Error code	Category	Description	Solution
001	Power	CPU power supply error	Contact your local Sony representative.
002		VIF power supply error	
003		PIF power supply error	
012	Temperature	VIF temperature error	Check the device environment and remove any obstructions from the fan and intake vent. If the problem persists, contact your local Sony representative.
013		PIF temperature error	
023	Board determination	PIF determination error	Contact your local Sony representative.
050	System	System version error	

Warnings

Warning code	Category	Description	Solution
212	VIF	Temperature warning	Check the device environment and remove any obstructions from the fan and intake vent. If the problem persists, contact your local Sony representative.
213	PIF		
214	PS		
215	Fan (Front)	Rotation stop warning / speed warning	Check the device environment and remove any foreign objects that may be obstructing the fan. If the problem persists, contact your local Sony representative.
216	Fan (Rear)		
230	System	Controller configuration data mismatch warning	Check the LED pitch size of the display cabinet, the installation conditions and wiring conditions including the model names, and the settings of the Display Control Software. If there is no problem, turn the power back on. If the problem persists, contact your local Sony representative.
233	PIF	VIF signal connection warning / Link connection warning / Sync connection warning	
240	System	Update warning (CPU / VIF / PIF)	Perform update again. If the problem persists, contact your local Sony representative.
401	Auto Power Saving	Auto power saving warning	Input a signal to the selected input, or set [System Setting] - [Auto Power Saving] to [OFF] in Display Control Software (without a signal, the unit will automatically be in standby mode to save power).

Cleaning and Storage

Display Cabinets

Caution

Do not wet the surface of the Display Cabinets.

Daily cleaning

- Use a soft anti-static cloth that does not produce lint when cleaning the surface of the Display Cabinets. (Recommended cloth: savina MX wiping cloth made by KB SEIREN, LTD.)
- Use ethyl alcohol (near 100%) to clean stubborn stains on the surface. Do not use any other solvents.
- Use commercially available anti-static dust blowers to clean joints.

Storage (for transportation)

- Make sure the Display Cabinets are completely dry before packing them.
- Store the Display Cabinets in dry, well-ventilated environments.

Display Controllers

Daily cleaning

- Use a cloth that has been dampened with a neutral detergent and thoroughly wrung out to wipe the device clean. Never use solvents, such as benzene and thinners.

Storage

- Do not store in environments where condensation may occur inside the device.

Signal Formats

The system supports the following video signals.

2D Inputs

DisplayPort (Single Input)

Resolution	Input frame rate [1)]	Input bit length	Input color sampling
3840 × 2160 [2)]	60p/50p/30p/25p/24p	8-/10-bit	RGB 4:4:4
2560 × 1440	60p	8-/10-bit	RGB 4:4:4
1920 × 2160	120p [2)]/100p [2)]/60p/30p/25p [2)]/24p [2)]	8-/10-bit	RGB 4:4:4
1920 × 1080	120p/100p/60p/50p	8-/10-bit	RGB 4:4:4

DisplayPort (Dual Input)

Resolution	Input frame rate [1)]	Input bit length	Input color sampling
3840 × 2160 [2)]	120p/100p	8-/10-bit	RGB 4:4:4

HDMI port [3)]

Resolution	Input frame rate [4)]	Input bit length	Input color sampling
4096 × 2160	60p/50p/30p/25p/24p	12-bit	YCbCr 4:2:2
3840 × 2160	60p/50p	8-bit	RGB 4:4:4 [5)]/ YCbCr 4:4:4 [5)]/ YCbCr 4:2:0
3840 × 2160	60p/50p	10-/12-bit	YCbCr 4:2:2 [5)]
3840 × 2160	30p/25p/24p	10-/12-bit	RGB 4:4:4 [5) 6)]/ YCbCr 4:4:4 [5) 6)]
3840 × 2160	30p/25p/24p	8-bit	RGB 4:4:4/ YCbCr 4:4:4
3840 × 2160	30p/25p/24p	12-bit	YCbCr 4:2:2
1920 × 1080	60p/50p	8-/10-/12-bit	RGB 4:4:4/ YCbCr 4:4:4
1920 × 1080	60p/50p	12-bit	YCbCr 4:2:2
1920 × 1080	30p/25p/24p	8-/10-/12-bit	RGB 4:4:4/ YCbCr 4:4:4
1920 × 1080	30p/25p/24p	12-bit	YCbCr 4:2:2
1280 × 720	60p/50p	8-/10-/12-bit	RGB 4:4:4/ YCbCr 4:4:4
1280 × 720	60p/50p	12-bit	YCbCr 4:2:2
1024 × 768	60p	8-/10-/12-bit	RGB 4:4:4/ YCbCr 4:4:4
1024 × 768	60p	12-bit	YCbCr 4:2:2
800 × 600	60p	8-/10-/12-bit	RGB 4:4:4/ YCbCr 4:4:4
800 × 600	60p	12-bit	YCbCr 4:2:2
720 × 480	60p	8-/10-/12-bit	RGB 4:4:4/ YCbCr 4:4:4
720 × 480	60p	12-bit	YCbCr 4:2:2
720 × 576	50p	8-/10-/12-bit	RGB 4:4:4/ YCbCr 4:4:4
720 × 576	50p	12-bit	YCbCr 4:2:2
640 × 480	60p	8-/10-/12-bit	RGB 4:4:4/ YCbCr 4:4:4
640 × 480	60p	12-bit	YCbCr 4:2:2

*1 1,000/1,001 frame rate is also supported for 120p/60p/30p/24p.

*2 Refer to the Installation Manual for details on input signals and settings.

*3 Converted to RGB 4:4:4, 8-/10-bit for display (8-bit is displayed for 8-bit inputs only).

*4 1,000/1,001 frame rate is also supported for 60p/30p/24p.

*5 Use a Premium High Speed HDMI cable when using this input signal.

*6 Converted to YCbCr 4:2:2, 10-/12-bit first, and then converted to RGB 4:4:4, 10-bit for display.

3D Inputs

Frame sequential mode

DisplayPort (Single Input)

Resolution	Input frame rate [1)]	Input bit length	Input color sampling
3840 × 2160	60p [2)]	8-/10-bit	RGB 4:4:4
1920 × 2160	120p [2)]/ 100p [2)]/60p	8-/10-bit	RGB 4:4:4
1920 × 1080	120p/100p/60p	8-/10-bit	RGB 4:4:4

DisplayPort (Dual Input)

Resolution	Input frame rate [1)]	Input bit length	Input color sampling
3840 × 2160 [2)]	120p/100p	8-/10-bit	RGB 4:4:4

3D dual input mode

DisplayPort (Dual Input)

Resolution	Input frame rate [1)]	Input bit length	Input color sampling
3840 × 2160 [2)]	60p/50p	8-/10-bit	RGB 4:4:4
1920 × 2160	60p/50p	8-/10-bit	RGB 4:4:4
1920 × 1080	60p/50p	8-/10-bit	RGB 4:4:4

*1 1,000/1,001 frame rate is also supported for 120p/60p/30p/24p.

*2 Refer to the Installation Manual for details on input signals and settings.

Supported Signal Formats for a Single Controller

Resolution	Frequency	Color sampling	DisplayPort input			
			Single Input		Dual Input	
			DP1 or DP2		DP1 and DP2	
			SST	MST	SST	MST
3840 × 2160	120/119.88	RGB 4:4:4	–	–	–	8-/10-bit (Square Division)
	100	RGB 4:4:4	–	–	–	8-/10-bit (Square Division)
	60/59.94	RGB 4:4:4	–	8-/10-bit (V split)	8-/10-bit (V split)	8-/10-bit (Square Division)
	50	RGB 4:4:4	–	8-/10-bit (V split)	8-/10-bit (V split)	8-/10-bit (Square Division)
	30	–	8-/10-bit	8-/10-bit (V split)	8-/10-bit (V split)	8-/10-bit (Square Division)
	29.97	–	–	8-/10-bit (V split)	8-/10-bit (V split)	8-/10-bit (Square Division)
	25	RGB 4:4:4	–	8-/10-bit (V split)	8-/10-bit (V split)	–
	24/23.98	RGB 4:4:4	–	8-/10-bit (V split)	8-/10-bit (V split)	–
2560 × 1440	60	RGB 4:4:4	8-/10-bit	–	–	–
1920 × 1080	120/119.88	RGB 4:4:4	8-/10-bit	–	–	–
	100	RGB 4:4:4	8-/10-bit	–	–	–
	60/59.94	RGB 4:4:4	8-/10-bit	–	–	–
	50	RGB 4:4:4	8-/10-bit	–	–	–
	30/29.97	RGB 4:4:4	–	–	–	–
	25	RGB 4:4:4	–	–	–	–
	24/23.98	RGB 4:4:4	–	–	–	–

Resolution	Frequency	Color sampling	HDMI input
			Single input
			HDMI1 or HDMI2
3840 × 2160	60/59.94	RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:0	8-bit
		YCbCr 4:2:2	12-bit
	50	RGB 4:4:4/YCbCr 4:4:4/YCbCr 4:2:0	8-bit
		YCbCr 4:2:2	12-bit
	30/29.97	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
	25	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
	24/23.98	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
1920 × 1080	60/59.94	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
	50	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
	30/29.97	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
	25	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
	24/23.98	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
1280 × 720	60/59.94	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
	50	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
1024 × 768	60/59.94	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
800 × 600	60/59.94	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
720 × 480	60/59.94	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
720 × 576	50	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit
640 × 480	60/59.94	RGB 4:4:4/YCbCr 4:4:4	8-/10-/12-bit
		YCbCr 4:2:2	12-bit

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