



tvONE

CORIOmaster / CORIOmaster mini

Manual

Version 1.0.7



CORIOgrapher

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Part number: PDF-MANUAL-CORIOMASTER

For use with CORIOmaster and CORIOmaster mini running firmware version M307 or later.

For use with CORIOgrapher version 1.0.5 or later.

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Patent Pending

CONTACT INFORMATION

If you have any questions about this Agreement, or want to contact Licensor for any reason, please direct all correspondence to:

TV ONE Limited Legal Department

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Westwood Ind. Est,
Margate, Kent CT9 4JG

For **Customer Support** please contact:

tech.usa@tvone.com or tech.europe@tvone.com or refer to http://www.tvone.com/contact_info.shtml

Service

Your CORIOmaster or CORIOmaster mini comes with various modules installed. CORIOmaster mini modules are factory installed and cannot be replaced in the field by end users. CORIOmaster module replacement should only be carried out by an authorized installer.

Installation Information

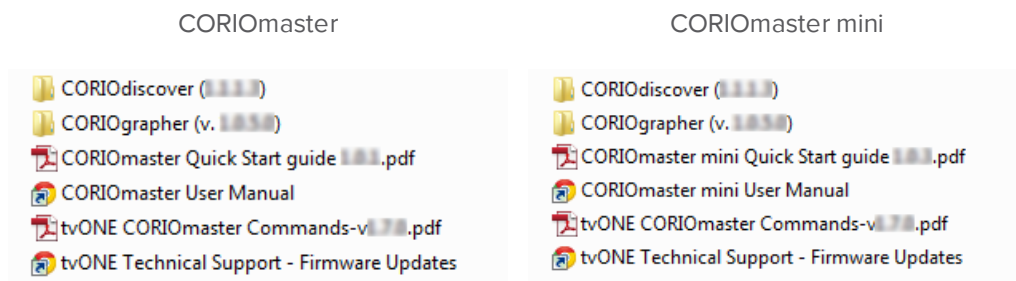
CORIOgrapher is a state-of-the-art software application made by tvONE as an enhanced way to control the tvONE CORIOmaster products. It can be installed on a PC running Windows Vista, Windows 7 or Windows 8, and it will install Windows .NET 4.5 if you do not already have it installed. The installer requires 600MB of free disk space, and the installed software is 100MB in size. We recommend that you use a display set to at least 1920 x 1080 for the optimal experience, as well as a PC with mouse/trackpad and network connection. (CORIOgrapher is designed to be installed on a PC, not on a tablet or phone, as tablets and phones do not have the necessary physical connections, processing power and display size to be able to use the software.)

To use the Preview feature, the destination PC must also have Windows Media Player installed (included by default with most installations of the Windows OS) and it must have been launched at least once in order to create the default file type associations. See "Troubleshooting No Preview Video Clips When Using Preview Icon" on page 318 for more information.

The CORIOgrapher software is not the only way to control your CORIOmaster. The CORIOmaster is controlled via a series of API commands. You can use the CORIOgrapher software as a front end to do this; you can use a third-party controller or you can use a terminal emulator such as Hyperterm or Putty. For documentation of specific command-line commands, see the tvONE CORIOmaster Commands document on the USB drive that was included in the box.

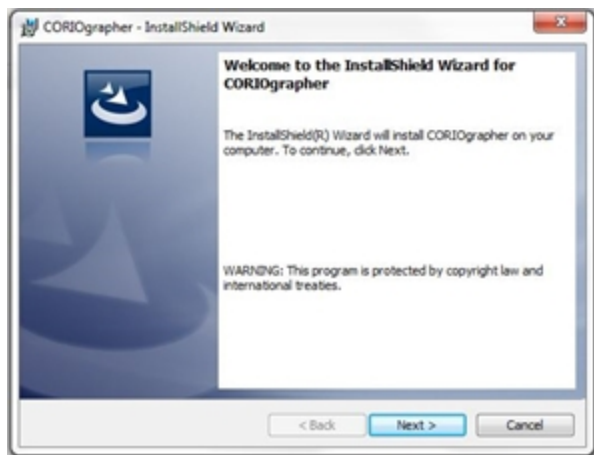
To install CORIOgrapher on your PC:

1. Connect the tvONE CORIOgrapher USB flash drive to your computer's USB port. Note that a web link to the latest firmware is included, in the event that your CORIOmaster or CORIOmaster mini needs to be upgraded. The flash drive will show the following options (version numbers may vary):



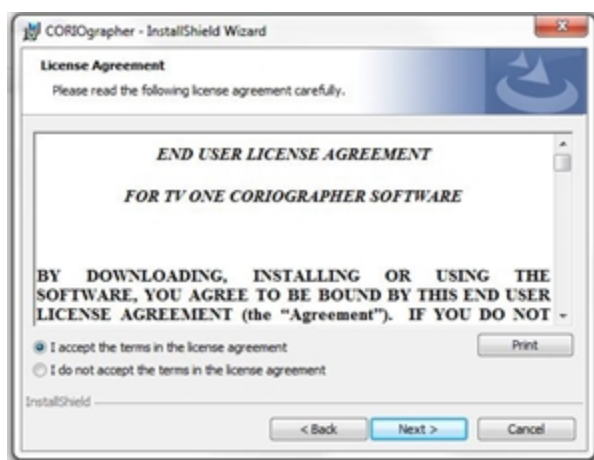
2. Open the CORIOgrapher folder which contains both the EULA and the Setup file. Double-click the Setup file to begin the installation process.

3. Agree to the InstallShield request and the first screen of the installer appears.



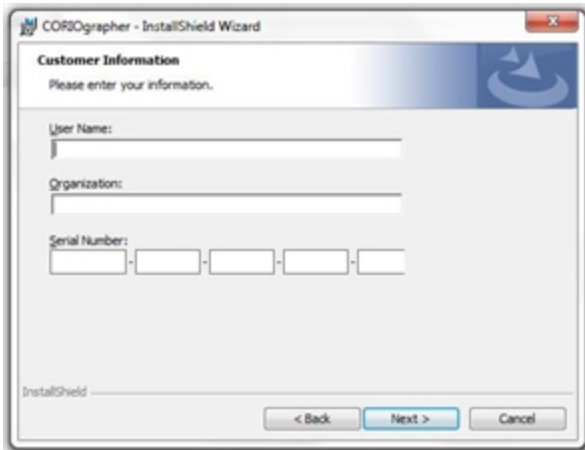
Click Next.

4. You can read or print the EULA (also available as a PDF on the install disc, in the same folder as the installer).



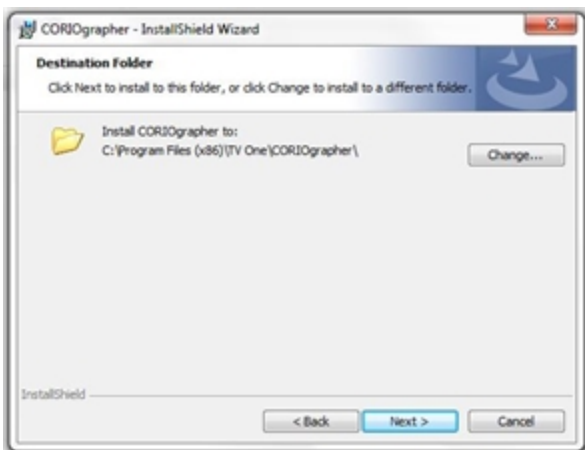
Choose to accept and click Next.

5. Enter your information and the software license key (you can find this on a sticker on the envelope the install disc came in).



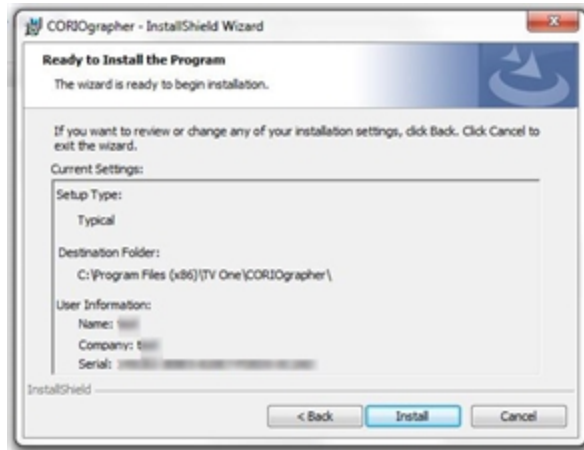
Enter the appropriate information and click Next.

6. Choose the installation location. By default, CORIOgrapher is installed in C:\Program Files (x86)\TV One\CORIOgrapher\ but you can change the location if you wish to do so.



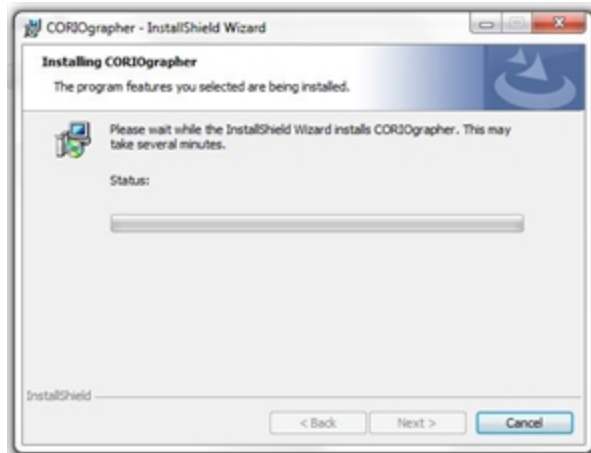
Set the location as you wish and click Next.

7. The Summary screen reflects the choices you have made to this point. Review the information and, if you need to change anything, click the Back button to go back and alter the information.



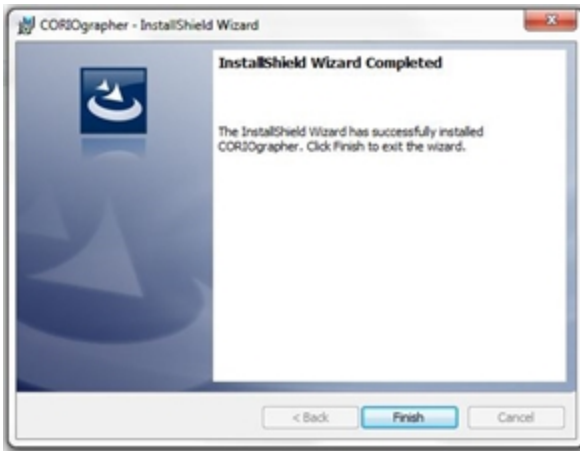
After verifying the details, click Install.

8. As the installer runs, you will see a standard install window with progress bar:



Unless you wish to cancel the installation, wait for the installation to occur.

9. When the installation is completed, the installer notifies you:



Click Finish to exit the installer.

10. Once the installer closes, the program does not automatically launch. You should be able to find and launch CORIOgrapher from your Start menu.

Connecting the PC to the CORIOmaster

The physical connection between PC and CORIOmaster is the same as with previous tvONE products. The CORIOmaster can be connected to the PC by an Ethernet network, or by a serial (RS-232) cable.

By default, a CORIOmaster running up-to-date firmware will be set to accept a DHCP-assigned IP address and will appear in CORIOgrapher to any PC on the same subnet. You can also connect using a serial cable, but as the CORIOmaster only supports one connection at a time, you cannot connect using both Ethernet and serial simultaneously.

For more information on configuring the connection, see "Configure Connection via Ethernet" on page 16 or "Configure Connection via Serial" on page 21.

Administrator Setup Information

Password Administration

The **Administrator** is the only user who can change passwords for other users. See "Changing Passwords" on page 177 for more details.

First Boot Configuration

The first time an administrator logs in to the CORIOmaster, the unit will notify you that this is the first time logging into the device. It will remind you to change the default password. (This alert will continue until you have saved settings on the device.)

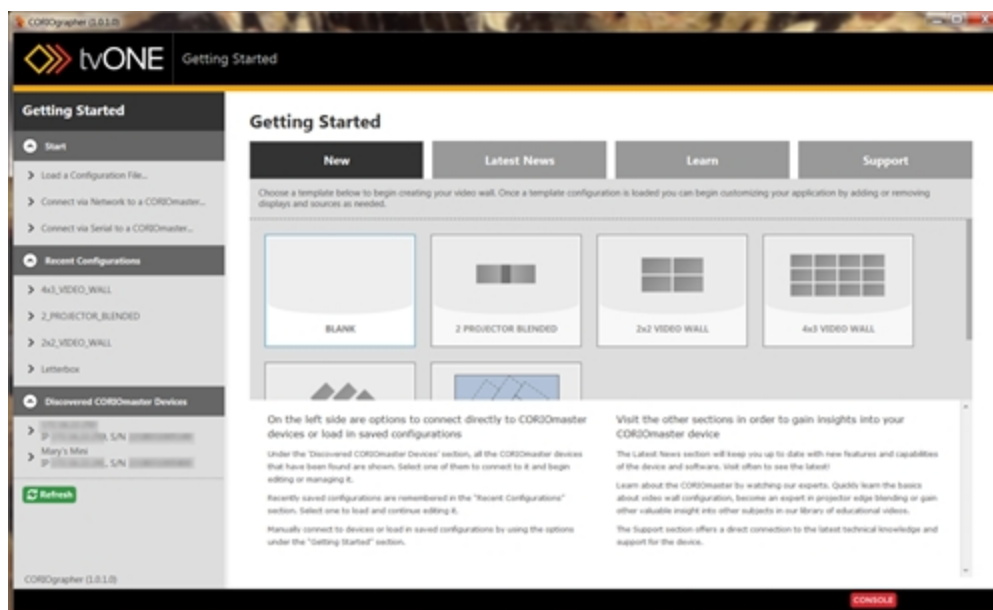
For more details, you may wish to see "Users" on page 176, "Logout" on page 22, "Changing Passwords" on page 177, and "Timeout" on page 183



Caution: Be sure to remember your administrator password. Administrators can reset user passwords, but if you forget your administrator password, you will be locked out of the system.

Getting Started

The first page you see when you launch the CORIOgrapher is a Getting Started page.



From this page, you have many options:


In the main pane, you can choose the New tab to create a new configuration, either blank or from an existing template; you can select the Latest News tab to read about what's new in the world of CORIOgrapher; you can click the Learn tab to watch some instructional videos; or you can click the Support tab to go to the tvONE support page. (Internet connection required for these tabs.)

Below the main pane is the ever-present Console button. If you press the Console button, you can access a command-line window that allows you to send text commands, if you know the appropriate syntax, or to review the commands that have been sent. For more information, see "Console" on page 156.

On the left-hand pane, you can see available devices and configurations. In the top section, labeled Start, you can select Load a Configuration File... which will open a window allowing you to select a locally-stored configuration. You can also connect to a CORIOmaster either via Network (Ethernet) or via Serial (RS-232). This is the option you use if you don't see your desired CORIOmaster already listed in the bottom section, under Discovered CORIOmaster Devices. The center section lists recent configurations you have loaded, as a way to quickly and easily open a configuration you have recently been working on.

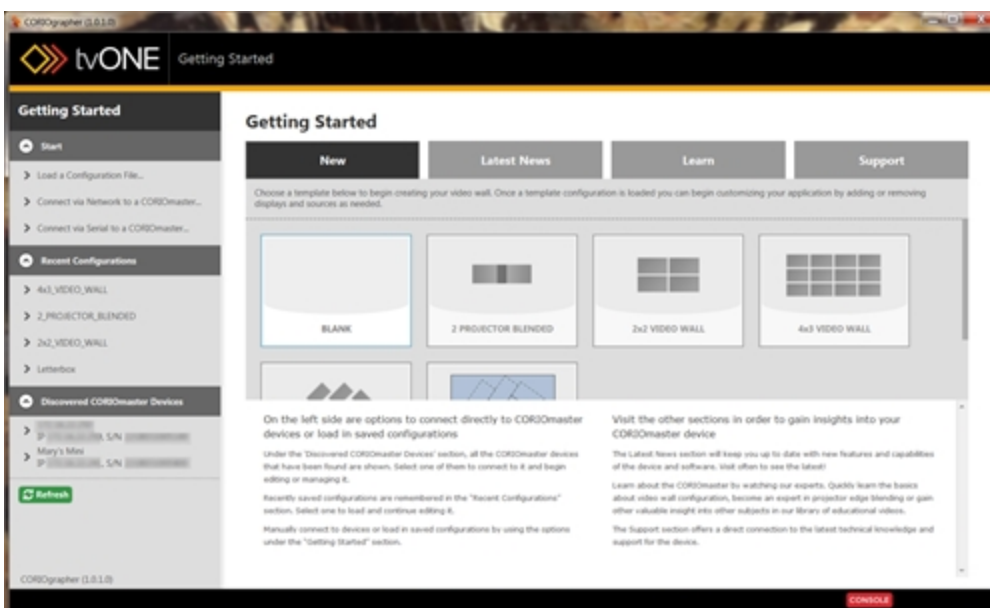
Configure Connection via Ethernet

The process to connect to a CORIOmaster using an Ethernet connection is simple, as any CORIOmaster with up-to-date firmware (M300 or later) defaults to DHCP initially, and should be discoverable on your network. tvONE recommends that you change any CORIOmaster device in a fixed networked installation to a static IP address, for simplicity in locating individual devices.

If your network does not have a DHCP router, or if you are connecting directly to the CORIOmaster using an Ethernet cable, you will need to configure the IP address before you can connect. Follow the instructions under *If the device appears under Discovered CORIOmaster Devices*, below. If the device has a self-assigned IP address, use the cog icon  in the login window to configure the IP address to an address in the same range as your PC before you can log in to the CORIOmaster.

To connect via Ethernet from a DHCP-enabled network, follow these steps.

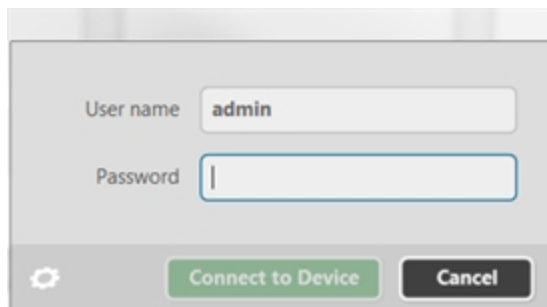
From the main screen of the CORIOgrapher, in the left-hand Getting Started toolbar, check to see if the CORIOmaster appears under Discovered CORIOmaster Devices. Proceed to the appropriate section below based on your own results.



If the device appears under Discovered CORIOmaster Devices:

1. If the device appears under the Discovered CORIOmaster Devices heading, click on the device.

2. An authentication window will pop up.



The image shows a login dialog box with a light gray background. It contains two input fields: 'User name' with the text 'admin' and 'Password' which is currently empty. Below the fields are three buttons: a gear icon on the left, a green 'Connect to Device' button in the center, and a black 'Cancel' button on the right.

Enter the appropriate username and password.

3. A cog icon appears in the bottom left corner. Click this icon to configure the device without logging in first.
4. In the resulting window, enter the desired network configuration details.



The image shows a network configuration dialog box with a light gray background. It features a 'Configuration' dropdown menu set to 'Static'. Below this are three rows of IP address fields: 'IP Address' (10.0.0.15), 'Subnet Mask' (255.255.255.0), and 'Default Gateway' (10.0.1.1). At the bottom are two buttons: a green 'Save Network Configuration' button and a black 'Cancel' button.

5. Click the **Save Network Configuration** button. The device will automatically reboot with the new settings enabled.

If the device doesn't appear in the Discovered CORIOmaster Devices section

1. If the device doesn't appear in the Discovered CORIOmaster Devices section, choose Connect via Network to a CORIOmaster... from the Start section.

2. A window will pop up with various options.



A login dialog box with a light gray background. It contains three input fields: 'IP address' with the value '10 . 0 . 0 . 15', 'User name' with the value 'admin', and 'Password' with a masked password '*****'. Below the fields are two buttons: a green 'Connect to Device' button and a gray 'Cancel' button.

Enter the appropriate IP address and log in using your username and password.

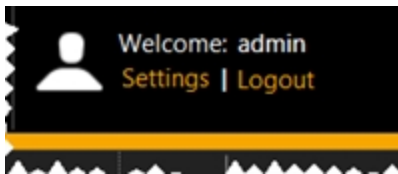
3. Click the Connect To Device button.

Once connected, if necessary, configure the CORIOmaster to the appropriate network settings:

Using DHCP

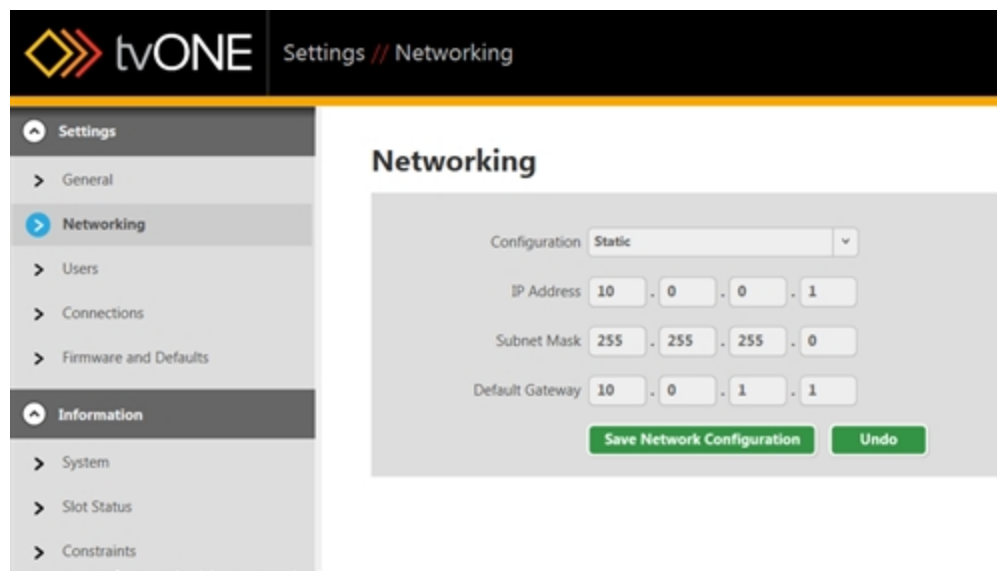
The default setting for CORIOmaster is DHCP. To verify, follow these steps:

1. Once you are connected to the unit, click the Settings button in the top right corner.



2. In the Settings window, choose Networking from the left-hand navigation pane.

3. In the Networking pane, choose DHCP from the Configuration drop-down.



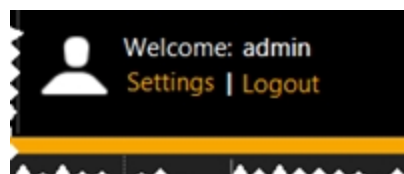
4. Enter any appropriate Subnet Mask or IP Gateway details.
5. Click the Save Network Configuration button.

You should now be able to connect to the CORIOmaster via Ethernet. You can configure the device name in the General pane of system settings in order to ensure you know what to look for when you connect via Ethernet in future.

Using a Static IP

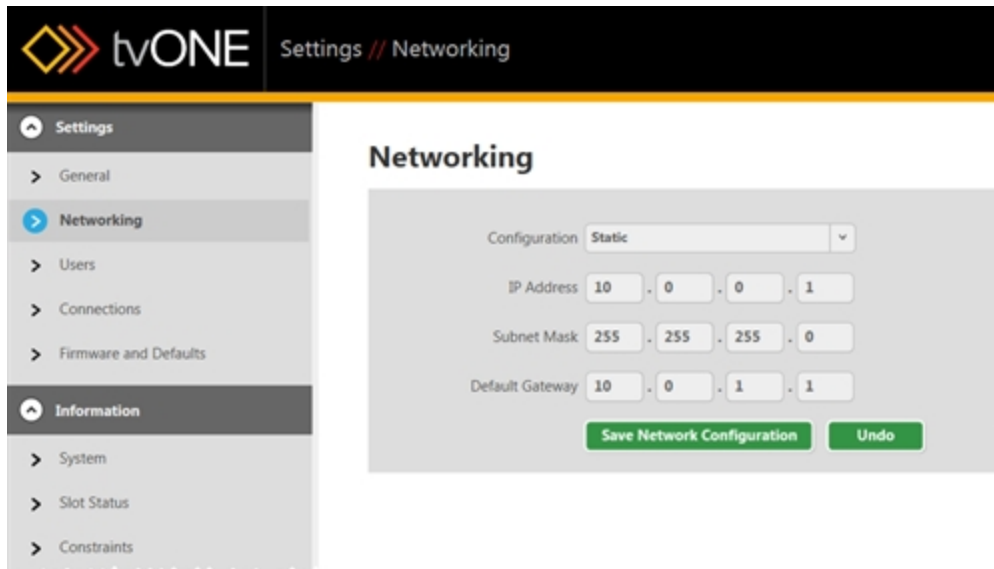
If you will be setting up a static IP address for your CORIOmaster, follow these steps:

1. Once you are connected to the unit, click the Settings button in the top right corner.



2. In the Settings window, choose Networking from the left-hand navigation pane.

3. In the Networking pane, choose Static from the Configuration drop-down.



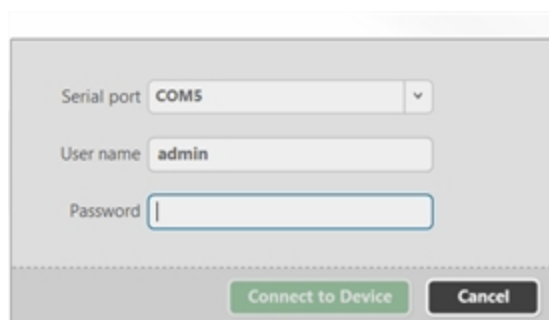
4. Enter the appropriate IP address, Subnet Mask and IP Gateway details.
5. Click the Save Network Configuration button.

You should now be able to connect to the CORIOmaster via Ethernet. You can configure any other configurable settings in this section, if you wish to do so.

Configure Connection via Serial

By default, any new CORIOmaster running firmware version M300 or later defaults to a DHCP network connection. If you wish to connect to a CORIOmaster using a serial (RS-232) connector, follow these steps.

1. From the main screen of the CORIOgrapher, in the left-hand Getting Started toolbar, choose Connect via Serial to a CORIOmaster... from the Start section.
2. A window will pop up with various options.

A screenshot of a dialog box for configuring a serial connection. It features three input fields: 'Serial port' with a dropdown menu showing 'COM5', 'User name' with the text 'admin', and 'Password' which is currently empty. At the bottom of the dialog, there are two buttons: a green 'Connect to Device' button and a black 'Cancel' button.

Select the appropriate COM port and log in using your username and password.

3. Click the Connect To Device button.

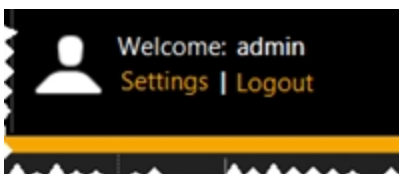
You can connect to the device using a terminal emulator such as Hyperterm or Putty. For specific command-line



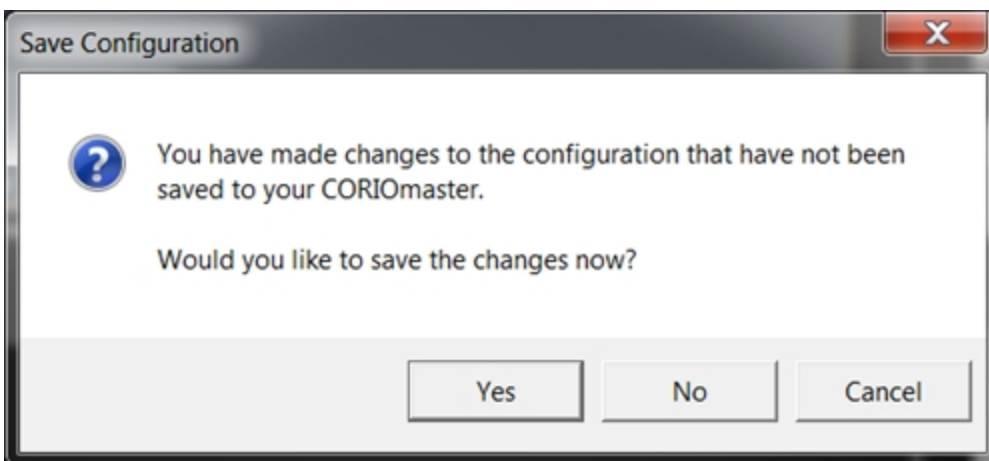
Note: Some versions of CORIOgrapher use Hardware Flow Control so please ensure that the RTC and CST lines are connected (pins 7 and 8 on the 9-way D-Type connector).

Logout

You may log out at any time. All the main screens have a button in the top right marked Logout.



When you click Logout, if you have made changes, a pop-up window offers you the chance to save the settings (Yes), discard the changes and log out (No), or cancel logout (Cancel).



If you do not actively send commands to the CORIOmaster for a certain period of time, you may be logged out due to inactivity. If this occurs, you need to log back in again if you wish to update the configuration on the CORIOmaster. If the timeout period is inconvenient, the administrator can change the length of time or disable the feature. See "Timeout" on page 183 to learn how to configure this.

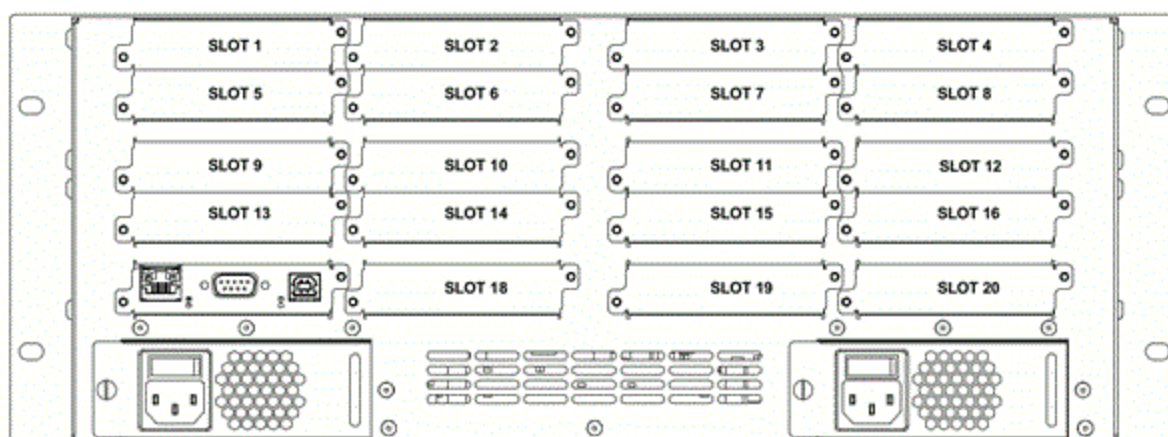
For more details, you may wish to see "Administrator Setup Information" on page 14, "Users" on page 176, and "Changing Passwords" on page 177

Input and Output Naming Convention

The CORIOmaster protocol uses a fixed naming convention. You can create aliases within the CORIOgrapher but it is helpful to understand the default naming convention.

The naming is defined by the position of modules within the CORIOmaster product. The figure below shows the unit as viewed from the rear. Each location in which a module can be placed is called a slot and each slot is numbered from the top left, going across then down.

The first slot is numbered 1; the last is 20. Slot 17 is a special slot holding the CPU card and slots 18,19 and 20 only work with data, not video signals.



The fixed label for slot 1 is `Slots.slot1`

The video modules have inputs and outputs. Most cards have two connectors per slot or per module that slides into the slot.

Inputs are addressed by `in1` and `in2`; outputs are addressed by `out1` and `out2`. HD-SDI input cards also have `in3` and `in4`.

Like the slot numbering system, they are numbered from left to right facing the rear of the CORIOmax.

The fixed label for the left-most input on slot 1 is `Slots.slot1.in1`

The fixed label for the left-most output on slot 13 is `Slots.slot13.out1`

The input numbering starts from 1 and continues to the number of inputs on that card. Likewise, the output numbering starts at 1 and continues to the number of outputs on that card. So an input card in the first slot with four connectors would be `slot1.in1`, `slot1.in2`, `slot1.in3`, and `slot1.in4`, while an output in slot 14 with two connectors would be `slot14.out1` and `slot14.out2`, labeled from left to right.

These names may also be abbreviated to the first initial, so in the examples above, the inputs could also be s1i1, s1i2, s1i3 and s1i4 while the outputs would be s14o1 and s14o2. These are the default labels in the CORIOgrapher unless you change them.

For information on renaming the slots, see "Source - Renaming Windows or Inputs" on page 139 and "Display - Renaming Output Displays" on page 115.

Configurations

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About Configurations

A configuration is a collection of all the settings for a CORIOmaster unit. A configuration on the CORIOmaster includes not just the inputs, outputs, video walls and presets but also CORIOmaster name, user accounts and passwords, and network settings. (If you create a configuration on your PC, the specific inputs and outputs, user accounts and passwords, and network settings are configured later, once the configuration is on a CORIOmaster.)

Up to twenty configurations can be stored on a CORIOmaster but only one can be active at any given time. When you connect through the CORIOgrapher to a CORIOmaster, you can access all saved configurations on that unit or upload local configurations to the unit. While you are connected to the unit, you can change which configuration is active.

In the CORIOgrapher, you can create and modify configurations even when your computer is not connected to a CORIOmaster device. You can manage a configuration in the software, save it locally, and upload it to the CORIOmaster at a more convenient time. While a CORIOmaster can only save a maximum of twenty configurations, the number of locally saved configurations is limited only by the drive space on your computer.

If you create and edit a configuration on your PC to your satisfaction, you can save it to a file or as a template locally, or upload it straight to a CORIOmaster. You need to be connected to the CORIOmaster when you assign inputs and outputs, in order to make sure that the physical connections are as expected. Network settings and user settings are also saved only on the CORIOmaster, not on a local configuration.

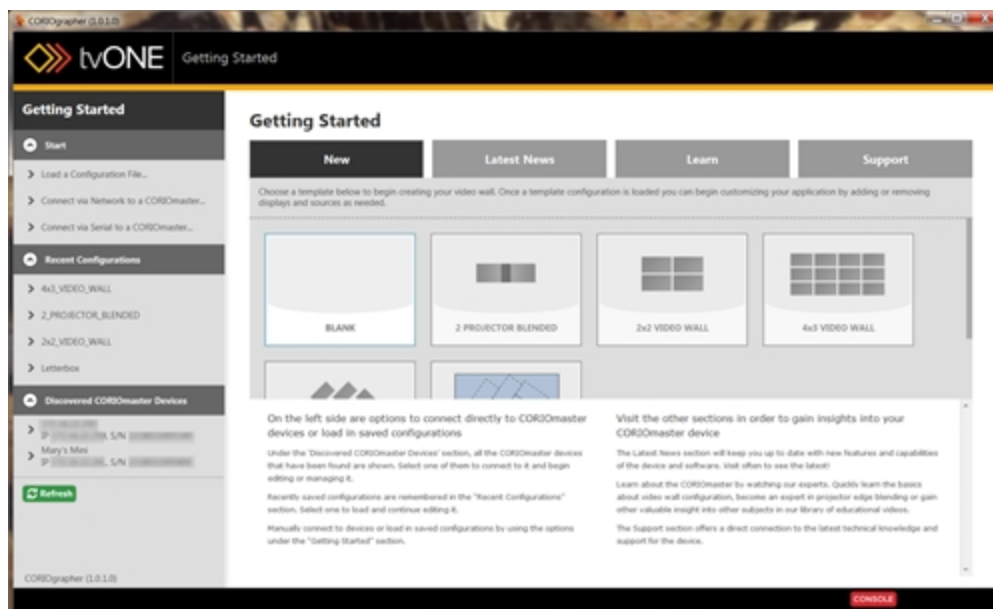


Caution: Be sure, when you load a different saved active configuration on the CORIOmaster, that you know the administrator login information. If the administrator login details are changed from the default and you are not aware of this, you may find yourself unable to access the unit.

Creating a New Configuration

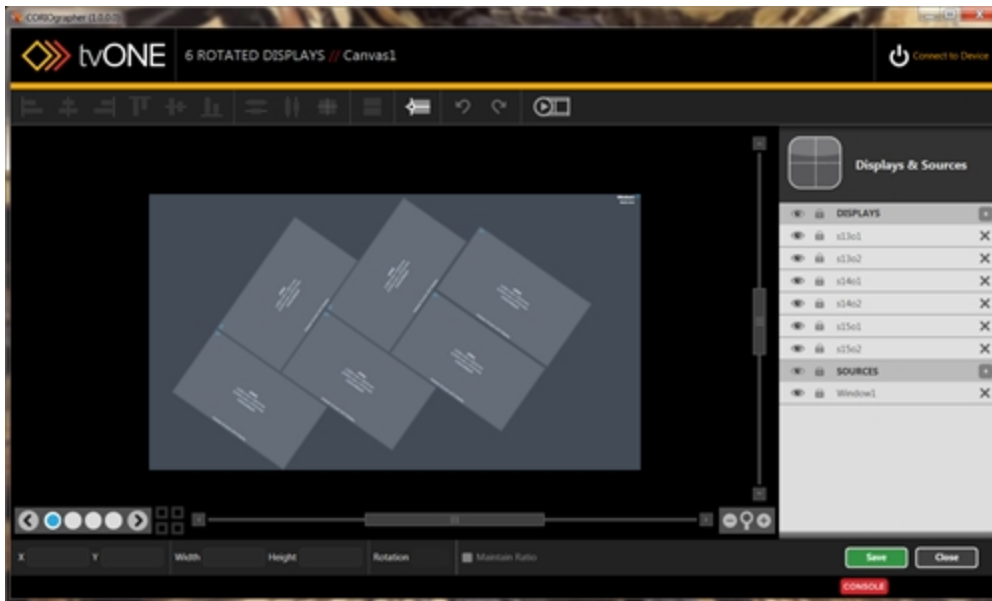
It is not necessary to have a CORIOmaster attached to your computer to create a new configuration. It is only necessary to connect to the CORIOmaster when you wish to update the configuration on the machine itself. The instructions below explain how to create a configuration in CORIOgrapher. These steps can be done regardless of whether you are connected to a CORIOmaster at the time.

1. From the main screen of the CORIOgrapher, in the main Getting Started pane, choose the New tab.



2. Several templates are available to use as a starting point, including Blank, 2 Projector Blended, 2x2 Video Wall, and others.
3. Click the template that most closely matches your desired output.

4. The resulting configuration will open in the Video Wall Editor.



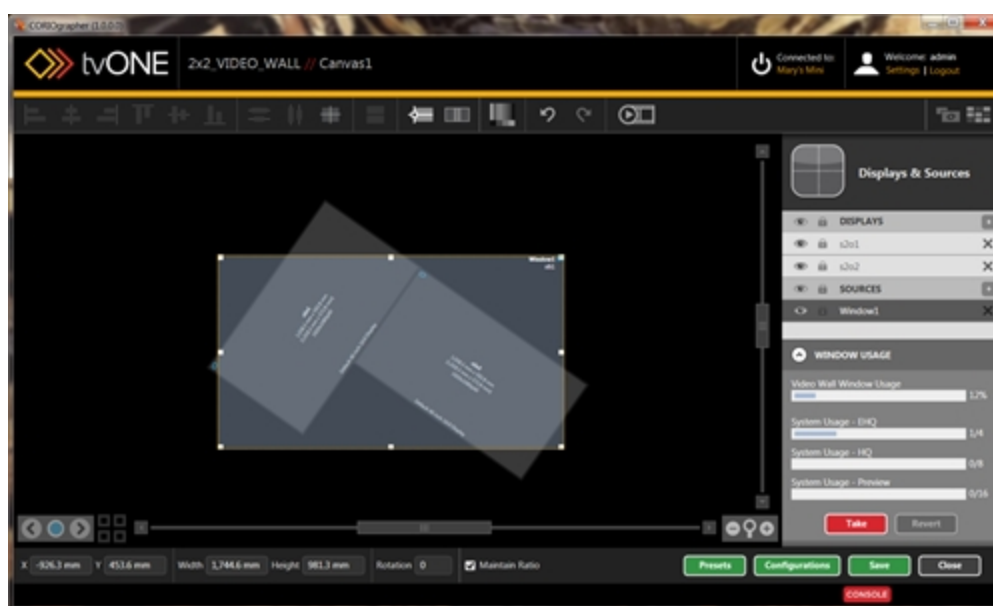
5. Edit the configuration as you wish. When you are ready to save, see "Save Configuration" on page 33 for details.

Loading an Existing Configuration

It is not necessary to have a CORIOmaster attached to your computer to load, edit, or save an existing configuration. It is only necessary to connect to the CORIOmaster when you wish to save, update, or deploy the configuration on the machine itself. The instructions below explain how to load a configuration in the CORIOgrapher, whether the configuration is local or on the CORIOmaster.

Load a Remote Configuration

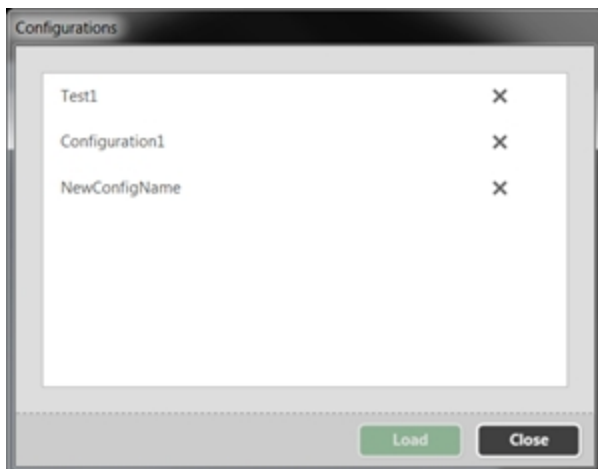
1. When you connect to the CORIOmaster as an administrator, you are taken straight to the Video Wall Editor window, with the default configuration file loaded.



Note that there are additional green buttons for Presets and Configurations at the bottom right of the screen when you are connected to a CORIOmaster.

2. From the selection of buttons at the bottom of the screen, click the Configurations button.

3. In the pop-up window, locate the configuration you wish to load on the CORIOmaster.



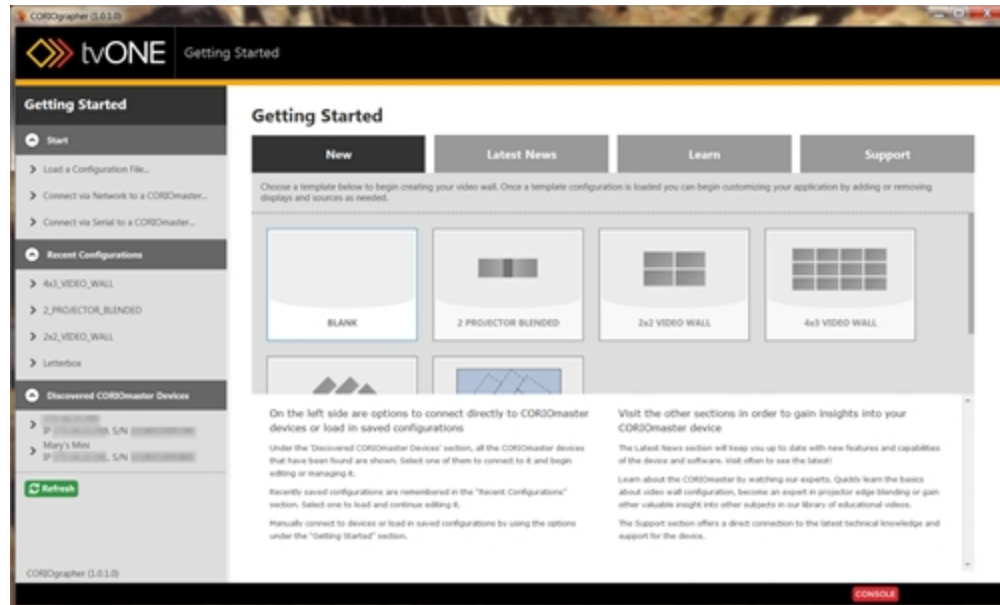
4. To load the configuration, select the appropriate row and click the Load button.
 - If you have modified the current configuration, an alert will notify you that you have made changes that have not been saved, and ask if you want to save changes to the old configuration before loading the new one. Choose Yes to save changes and continue with loading the other configuration; choose No to abandon changes and continue with loading the other configuration; and choose Cancel if you wish to return to the current configuration without loading another at this point.
5. After the new configuration has been loaded, a pop-up message says "The configuration is restored successfully. You need to reconnect to the device." Since each configuration has unique network settings, when you click OK, you will be logged out of the CORIOmaster and returned to the Getting Started page. Select the appropriate machine and reconnect to it, and the configuration you selected will be active.



Caution: Be sure, when you load a different saved active configuration on the CORIOmaster, that you know the administrator login information. If the administrator login details are changed from the default and you are not aware of this, you may find yourself unable to access the unit.

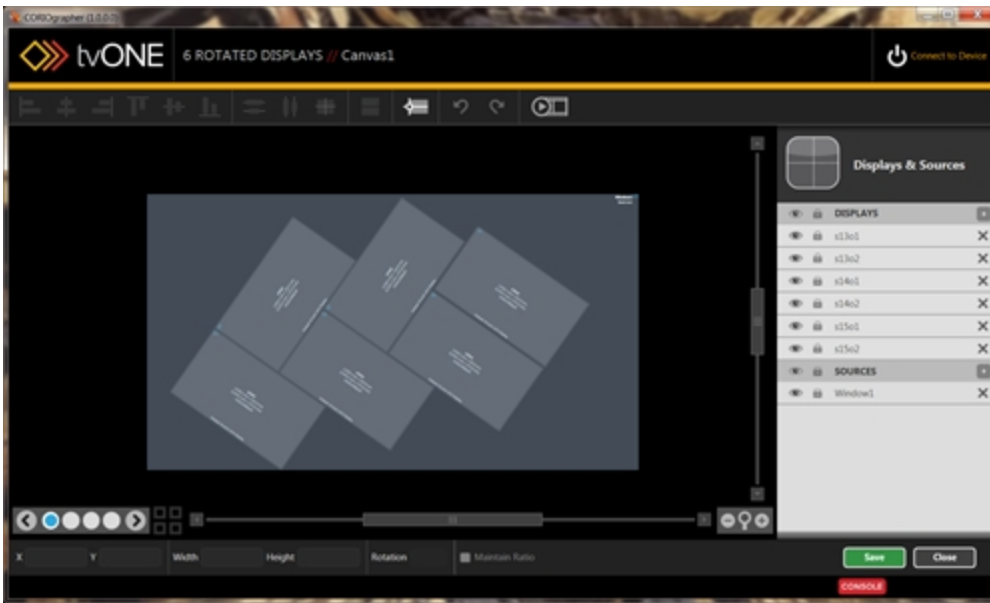
Load a Local Configuration

1. From the main screen of the CORIOgrapher, in the left-hand side pane, select the configuration from the Recent Configurations section. If the configuration does not appear in that section, choose Load a Configuration File....



2. A Windows prompt shows local files - navigate to and select the configuration file you wish to load and click the Open button. (The default save location for configuration files is your user\My Documents\CORIOgrapher\Configurations; configuration files have a .cmc

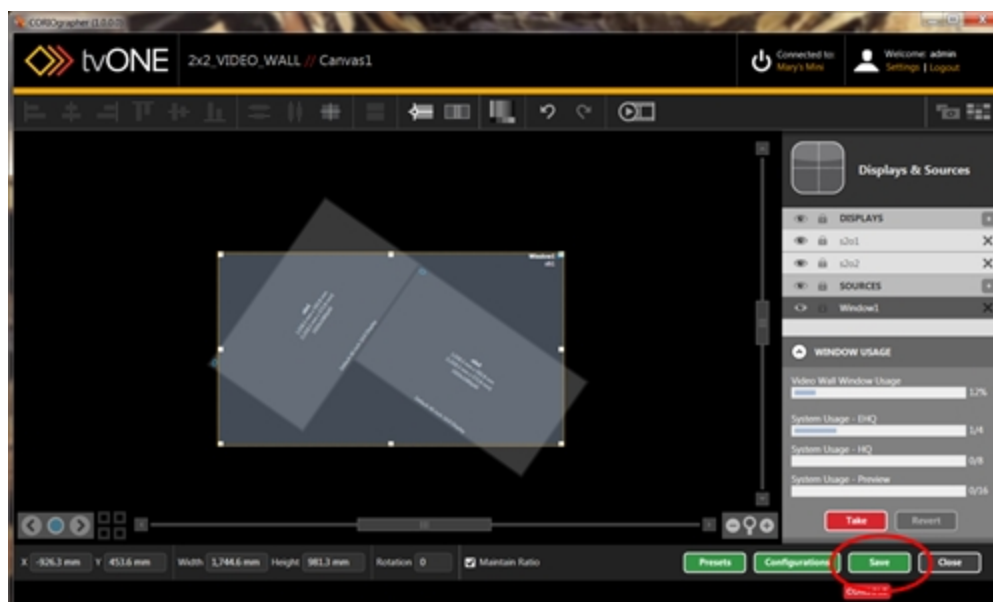
suffix.) The appropriate configuration file will appear in the Video Wall Editor.



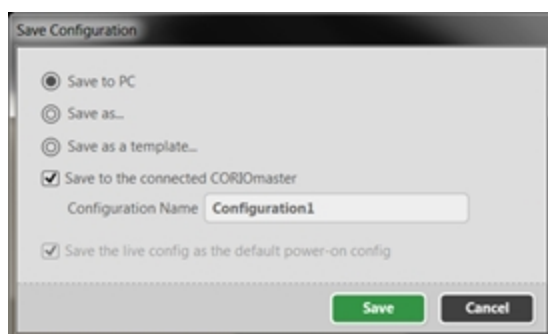
Save Configuration

It is not necessary to have a CORIOmaster attached to your computer to load, edit or save an existing configuration. It is only necessary to connect to the CORIOmaster when you wish to save/update the configuration on the machine itself. The instructions below explain how to save a configuration in the CORIOgrapher, whether the configuration is local or on the CORIOmaster.

1. This configuration being edited in the Video Wall Editor is in active memory by default - make changes as you desire, and when you are ready to do so, click the green Save button in the bottom right corner. (If you are actively connected to a CORIOmaster, there will also be two more green buttons to the left, but these are not relevant in this situation.)



2. You will be prompted to choose a location in which to save the configuration file:



- If you click Save to PC, if you haven't saved locally and given it a unique name yet, you will be prompted to choose a file name and location to save the file. (By default, it will save to your user/My Documents/CORIOgrapher/Configurations.) Configurations have a file extension of cmc. If the Configuration had previously been saved, choosing Save to PC will simply update the existing configuration of that name.
 - If you click Save as..., you will be prompted to choose a file name and location to save the file (same default location as above).
 - If you click Save as a template..., additional fields will appear for Title and Description. When you click Save, you will be prompted to choose a file name and location to save the template. (By default, it will save to your user/My Documents/CORIOgrapher/Templates.) Templates have a file extension of .cmt.
3. If you are connected to a CORIOmaster when you click save, a further two options are available in addition (you will still need to save a copy locally, but you can also choose how to save it on the CORIOmaster.):
- If you check Save to the connected CORIOmaster, you will need to enter a name in the Configuration Name field. After entering a configuration name, when you click Save, you will be prompted based on your choice of the local saving options above.
 - If you uncheck Save to the connected CORIOmaster, the last option, Save the live config as the default power-on config, becomes active. If you check this one, the current configuration will become the active configuration when the CORIOmaster is booted up. When you click Save, you will be prompted based on your choice of the local saving options. (Note that this option can be checked as well as the Save to the connected CORIOmaster option, but that option must be unchecked in order to modify this one.)

Once the configuration file is saved locally to your PC, you can re-open and modify this configuration file at any time with no need to have the PC connected to a CORIOmaster until you are ready to do so. Or, if you wish to work with the file on the CORIOmaster, you can connect to the CORIOmaster and edit the configuration as saved on the unit.

Getting Started

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From Start to Finish

Have you got the CORIOmaster installed, and CORIOgrapher running, and you just want to get started? Follow the steps here to get your first video wall up and running.

Assuming you have already configured the network and user settings and you're connected to your CORIOmaster:

1. Create or configure your Displays or outputs
See "Adding Displays" on page 38
2. Create or configure your Sources
See "Adding Sources" on page 44
3. Create Layouts in the Video Wall Editor
See "The Editor Window" on page 1
4. Create Presets / Transitions
See "About Presets" on page 200 and "Basic Transition Tutorial" on page 209
5. Return to step 3 and create more layouts to save as Presets - repeat as necessary
6. Operate the system
See "About the Dashboard" on page 190

Displays and Sources pane


When you are editing a video wall in the Editor window, you can use the Displays & Sources pane to add your inputs and outputs. See "Adding Sources" on page 44 and "Adding Displays" on the next page for instructions.

In addition to the editing that can be done in the video wall itself, the line in the Displays & Sources pane allows you to lock an item by clicking the lock icon (prevent it from being moved on the video wall), hide an item by clicking the eye icon (this is helpful if you want to reach the window behind it), edit its information by double-clicking the line, or delete it by clicking the X. See "Configuring Displays and Windows (Sources)" on page 50 for more information.


Priority

Once your displays and windows are added to the video wall, you can move them around as needed by clicking and dragging the item up or down the list in the pane. The video wall is built out of layers, with the top display in the Displays & Sources pane being at the back; the bottom window of the Displays & Sources pane being at the front.

Visibility

If you want to work with a layer behind the top layer, you can use the eye icon on the side pane () to hide that layer while you work with the bottom layer. Each input and output has its own visibility setting so you can toggle them as needed to work in the video wall.


Lock

If you have configured an item or multiple items on your video wall and don't want to risk them moving or being changed, you can lock those items to prevent accidental modification. The lock icon is on the side pane () next to the eye icon and is unique to each input and output.

Edit

You can edit the information for a display or window by double-clicking the line for that item. This will open a window of information that you can modify as you wish.

Delete

If you decide you don't want to have a certain display or window on your video wall after all, you can delete the item by clicking the X () at the far right of the line. If you change your mind, you can add it back using the plus button to the right of the header bar that says Displays or Sources.

Adding Displays

When you begin to create your video wall, you need to define the inputs and outputs that are being used. This is done in the Video Wall Editor.

To add your outputs - Displays - to your video wall, click the plus button next to Displays in the list.

A pop-up bar will show all available displays. To add a new one, click the Add Display button.

In the pop-up window, select the specific display you are using, or enter the details for your output.

When your output is specified and appears in the Displays pop-up window, simply click the appropriate Displays square and drag it onto your video wall. It will appear on the video wall, and a line for that display will appear under the Displays heading in the Displays & Sources pane.

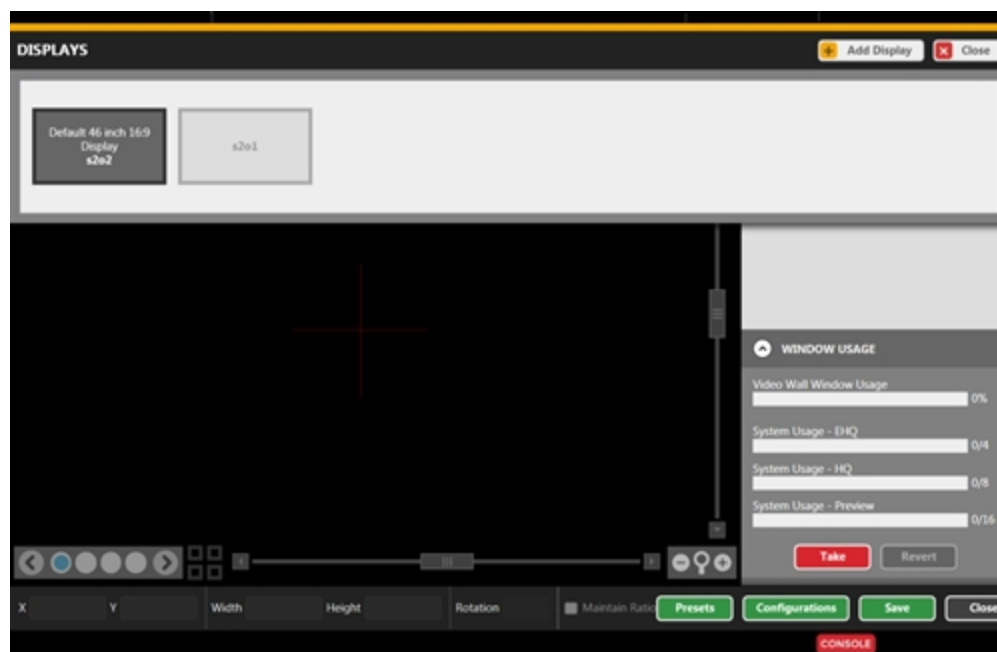
If this pop-window is empty, it means that there are no displays available or all output slots are in use by another video wall. In this case, click the Add Display button to create a new display.

To add your outputs - Displays - to your video wall:

1. Click the plus button next to Displays in the Displays & Sources pane.

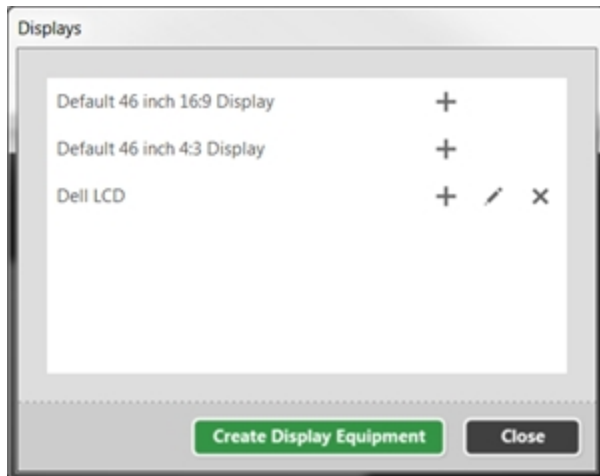


2. A pop-up bar will show all available recognized output slots, if you are actively connected to a CORIOmaster.



3. If you want to add a specific display, or if you are not currently connected to a CORIOmaster, follow the steps below. tvONE recommends that you create your displays and sources as a first step in the creative process, but if you don't want to set up output configuration data at this point, skip to the bottom of this section and you can add a default 46-inch 1920x1080p60 display, and clarify details later via the displays configuration window.
 1. Click the Add Display button.
 2. In the pop-up window, choose whether to begin with a default 46 inch 16:9 display or a default 46 inch 4:3 display (both are modifiable, they just give you a basis from which to begin) or click the Create Display Equipment button to specify further.

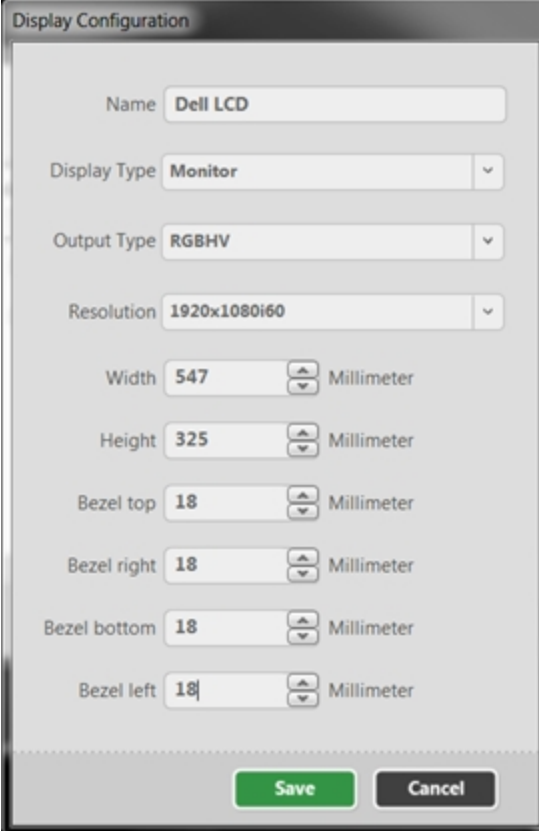
(Any displays you have previously defined from this PC also appear in this list.)



3. If you choose Create Display Equipment, a window pops up asking you some details about your output device. See "Creating Display Equipment Profiles" on page 55 for details. The more specific you can be here, the more tailored your experience in the video wall can be. Resolution and bezel details are particularly useful in this context.

Note that although inches are the default unit of measurement, you can use millimeters - see "General - Default Units" on page 166 for more information. After you have entered this information and clicked Save, you return to the window above, with the two default choices plus your newly-specified configuration. When you click Save from the Display Configuration window, you are saving the display as a template so you will not have to re-enter the information repeatedly

for any other matching displays.

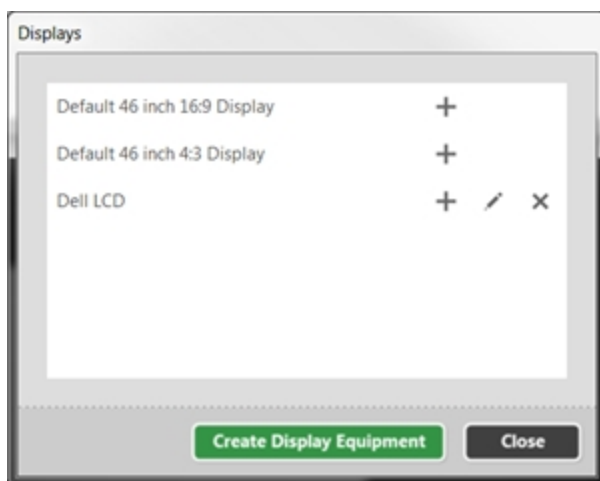


The image shows a 'Display Configuration' dialog box with the following settings:

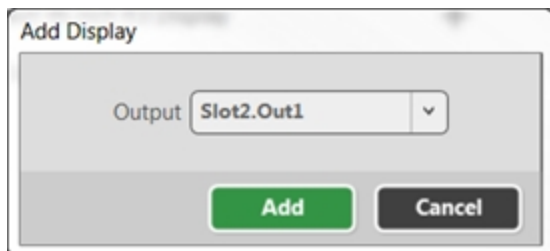
Field	Value
Name	Dell LCD
Display Type	Monitor
Output Type	RGBHV
Resolution	1920x1080i60
Width	547 Millimeter
Height	325 Millimeter
Bezel top	18 Millimeter
Bezel right	18 Millimeter
Bezel bottom	18 Millimeter
Bezel left	18 Millimeter

At the bottom of the dialog are two buttons: 'Save' (green) and 'Cancel' (black).

4. After saving the display configuration, click the plus button next to the display you wish to use.

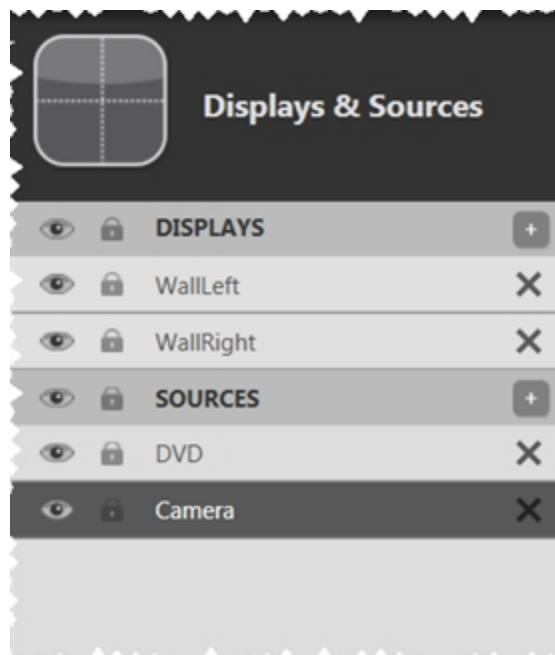


5. Another pop-up window gives you a list of output slots, to choose which slot to associate with this display profile. (If you are connected to a CORIOmaster, it checks the device to see which ports are outputs. If you are not connected to a CORIOmaster, it gives you a list of 16 slots, each with two outputs. If you specify a slot now which turns out not to be an output when you do connect to the device, you will be prompted to correct this at that point.)



6. When you have finished specifying display profiles, close the Displays pop-up window and return to the now-specified displays list.
4. Now that your display is specified and appears in the Displays bar, click the appropriate Displays rectangle or drag it onto your video wall. The display will appear on the video wall with name, size and resolution details, and a line for that display appears under the Displays heading in the Displays & Sources pane. You can rename the display on the video wall to identify it from other displays, which can be helpful when discussing the wall

layout with your creative associates or installation crew.



Note: The equipment file you create can be saved and shared with other configurations you edit on that PC. The file is not copied to the CORIOmaster but you can share the file to any other PCs that need access to the same equipment file, in order to avoid setting up the same devices repeatedly. The .xml data file is located in My Documents\CORIOgrapher\Equipment\Displays.

Adding Sources

When you begin to create your video wall, you need to define the inputs and outputs that are being used. This is done in the Video Wall Editor.

To add your inputs - Sources - to your video wall, click the plus button next to Sources in the list.

A pop-up bar will show all available sources. To add a new one, click the Add Source button.

In the pop-up window, select the specific source you are using, or enter the details for your input.

When your input is specified and appears in the Sources pop-up window, simply click the appropriate Sources square and drag it onto your video wall. It will appear on the video wall, and a line for that source will appear under the Sources heading in the Displays & Sources pane.

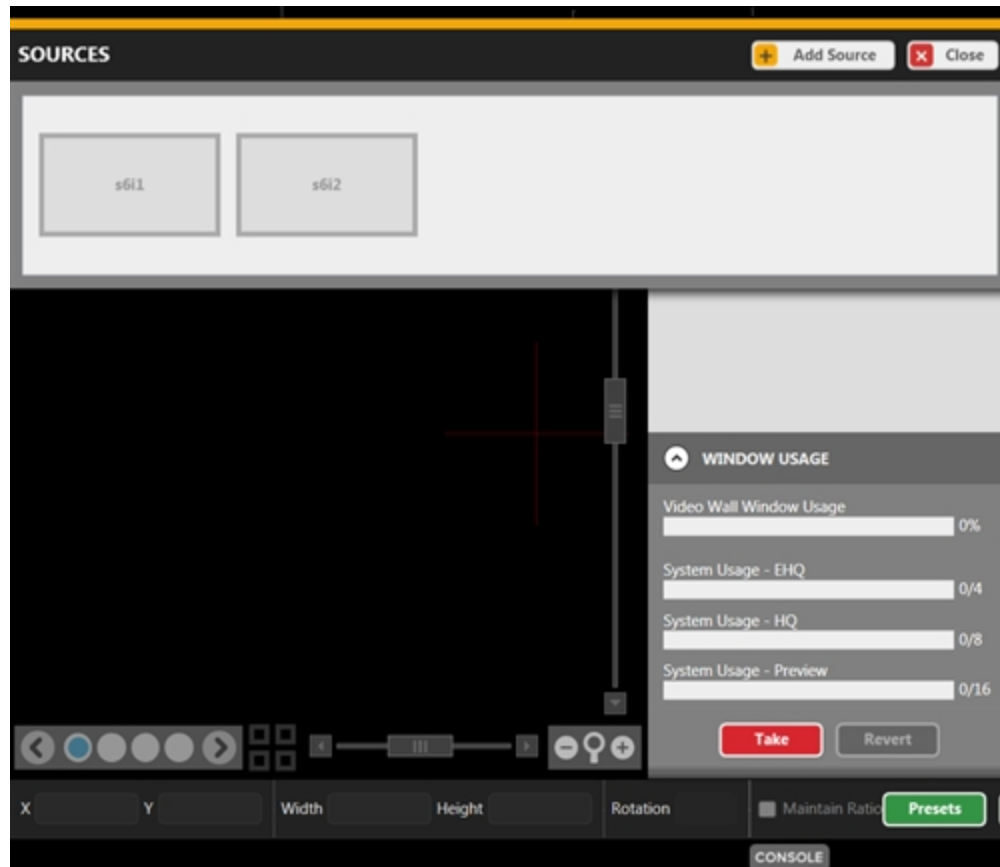
If this pop-window is empty, it means that there are no sources available or all input slots are in use by another video wall. In this case, click the Add Source button to create a new source.

To add your Sources to your video wall:

1. Click the plus button next to Sources in the Displays & Sources pane.

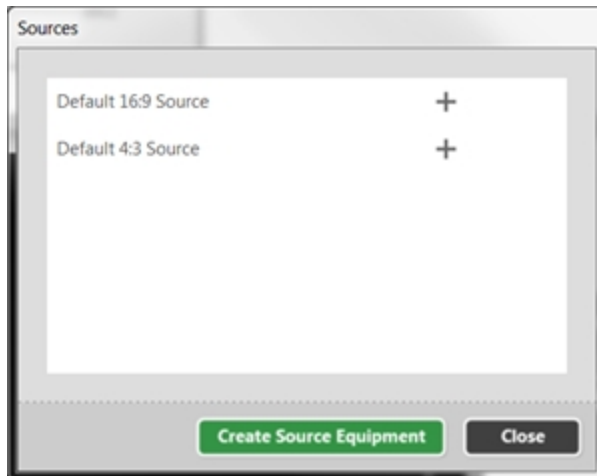


2. A pop-up bar shows all recognized Sources slots, if you are actively connected to a CORIOmaster.



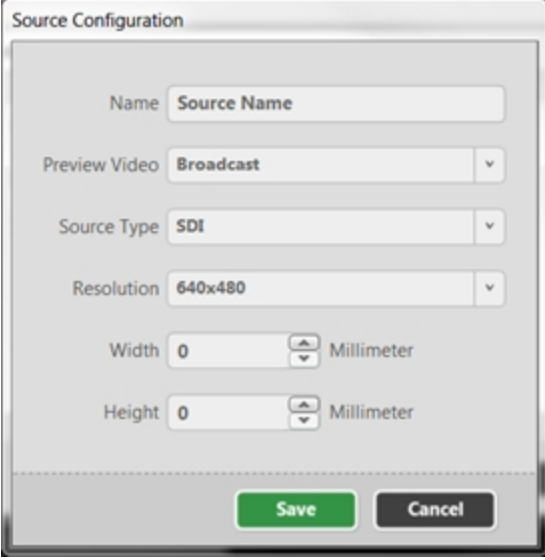
3. If you want to add a specific source, or if you are not currently connected to a CORIOmaster, follow the steps below. tvONE recommends that you create your displays and sources as a first step in the creative process, but if you don't want to set up source configuration data at this point, skip to the bottom of this section and you can add a default 16:9 input, and clarify details later via the source configuration window.
 1. Click the Add Source button.
 2. In the pop-up window, choose whether to begin with a default 16:9 source or a default 4:3 source (both are modifiable, they just give you a basis from which to begin) or click the Create Source Equipment button to specify further. (Any

sources you have previously defined from this PC also appear in this list.)



3. If you chose Create Source Equipment, a window asks you some details about your input device. See "Creating Source Equipment Profiles" on page 58 for more details. The more specific you can be here, the more tailored your experience in the video wall can be. Source type and resolution are particularly useful in this context.
After you have entered this information and clicked Save, you return to the window above, with the two default choices plus your newly-specified configuration. When you click Save from the Source Configuration window, you are saving the source as a template so you will not have to re-enter the information repeatedly

for any other matching sources.

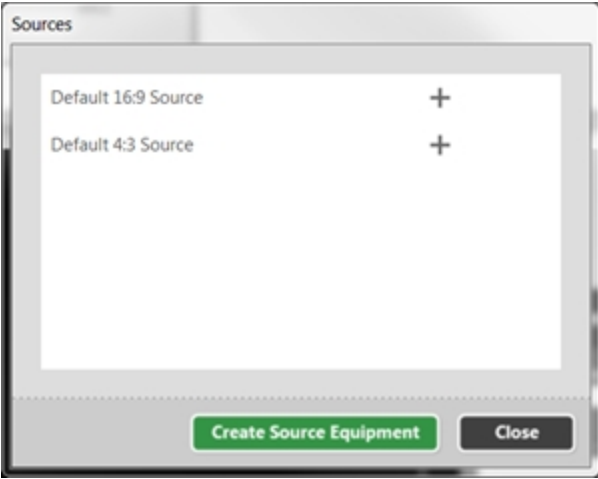


The 'Source Configuration' dialog box contains the following fields and controls:

- Name:
- Preview Video:
- Source Type:
- Resolution:
- Width: Millimeter
- Height: Millimeter

Buttons:

4. After saving the source configuration, click the plus button next to the source you wish to use.



The 'Sources' dialog box displays a list of input slots with plus buttons:

Default 16:9 Source	+
Default 4:3 Source	+

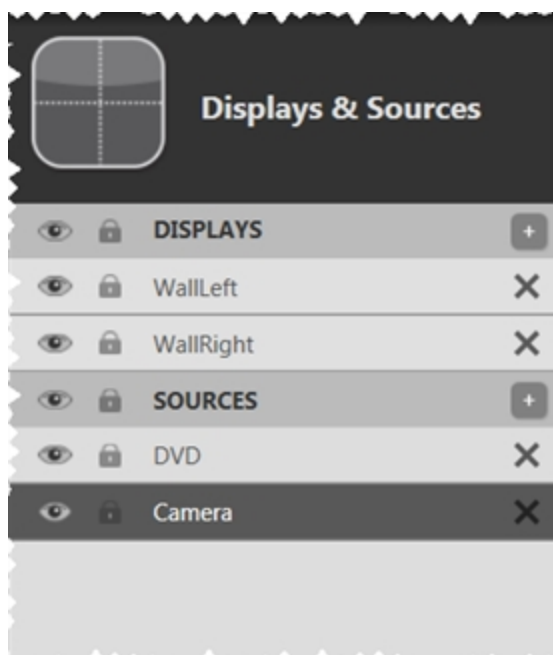
Buttons:

5. Another pop-up window gives you a list of input slots, to choose which slot to associate with this source profile. (If you are connected to a CORIOmaster, it checks the device to see which ports are inputs. If you are not connected to a CORIOmaster, it gives you a list of 16 slots, each with two inputs. If you specify a slot now which turns out not to be an input when you do connect to the device, you will be

prompted to correct this at that point.)



6. When you have finished specifying source profiles, close the Sources pop-up window and return to the now-specified source list.
4. Now that your input is specified and appears in the Sources bar, click the appropriate Sources rectangle and drag it onto your video wall canvas. It appears on the video wall, and a line for that source appears under the Sources heading in the Displays & Sources pane. You can rename the source on the video wall to identify it from other sources, which can aid in understanding what source is being displayed at any given time.



If you are in Immediate mode, the image will appear on the specified output. If you are in Synchronized mode, the image will not appear on the physical display specified until you click the Take button. (See "Immediate vs Synchronized" on page 193 for details.)

Windows

When a source is added to the video wall (which may also be referred to as the Canvas), it becomes a Window. Initially, the settings of the source are used to create the Window.


Windows are not sources, but Windows contain sources along with other data. Windows can change sources. For example, using Transitions, the source can change from Slot1.input1 to Slot1.input2. However, the dimensions and placement of the Window may not change.

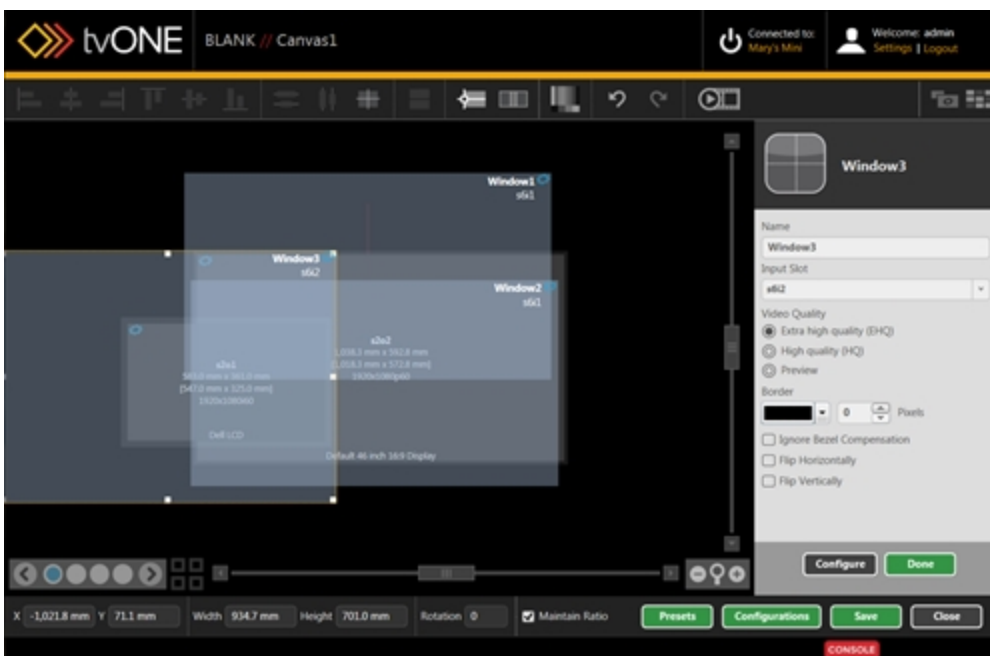


Note: The equipment file you create can be saved and shared with other configurations you edit on that PC. The file is not copied to the CORIOmaster but you can share the file to any other PCs that need access to the same equipment file, in order to avoid setting up the same devices repeatedly. The .xml data file is located in My Documents\CORIOgrapher\Equipment\Sources.

Configuring Displays and Windows (Sources)

When a display or window appears in the Displays & Sources list, you can access further details about that item by:

- double-clicking the line,
- double-clicking the item in the canvas, or
- clicking on the gear  in the top corner of the item in the canvas (top left for Displays; top right for Windows).



From this right-hand pane, you can edit a window name, change the associated input on the CORIOmaster, configure a border of any color and any number of pixels, choose the video quality of that window, flip the image horizontally or vertically, and set the configuration to ignore any bezel compensation. You can do further customization by clicking the Configure button at the bottom of the pane.

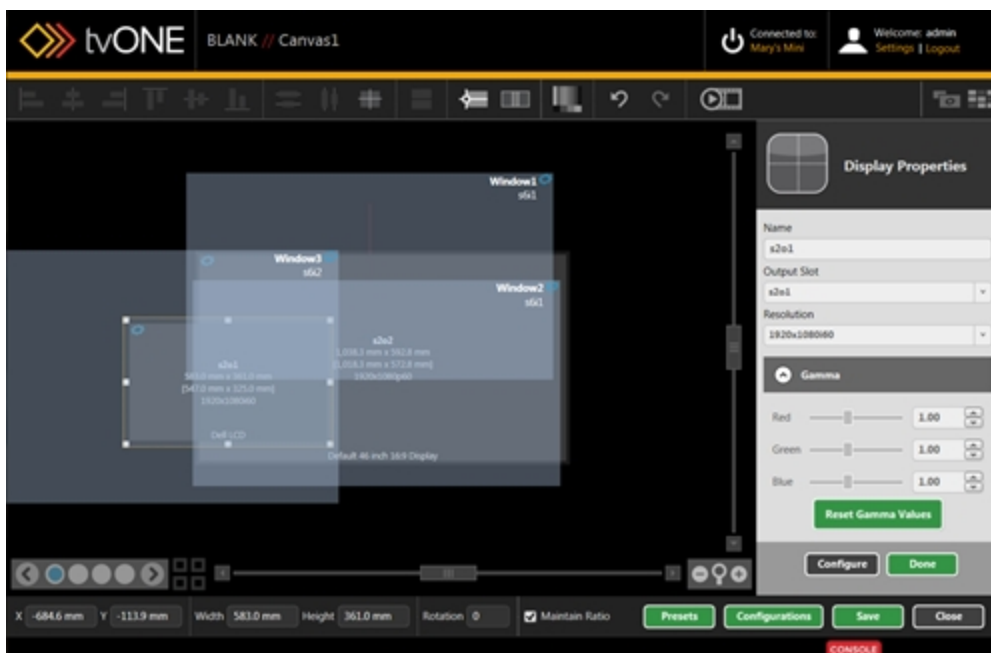
For an output, you can edit an output's name, change the associated output slot on the CORIOmaster, adjust the resolution of the output, and modify the gamma values. You can do further customization by clicking the Configure button at the bottom of the pane.

"Configuring Windows" on page 53

"Configuring Displays" on the facing page

Configuring Displays

When you have double-clicked a Display item in the Displays & Sources pane, you get a new pane from which you can make some changes.



From this pane, you can edit an output's name, change the associated output slot on the CORIO-master, adjust the resolution of the output, and modify the gamma values.



Note: The information you entered when you set up your display is shown here. You can edit these settings if something has changed in your configuration. See "Creating Display Equipment Profiles" on page 55.

If you click the Configure button at the bottom of the pane, you can access the Display Configuration.

The screenshot shows the 'Display Configuration' web interface. At the top, there is a navigation bar with the 'tvONE' logo, the current page 'Display Configuration // Slot3.Out1', and user information 'Welcome: admin' with links for 'Settings' and 'Logout'. The main content area is titled 'Display Configuration' and contains a form with the following fields:

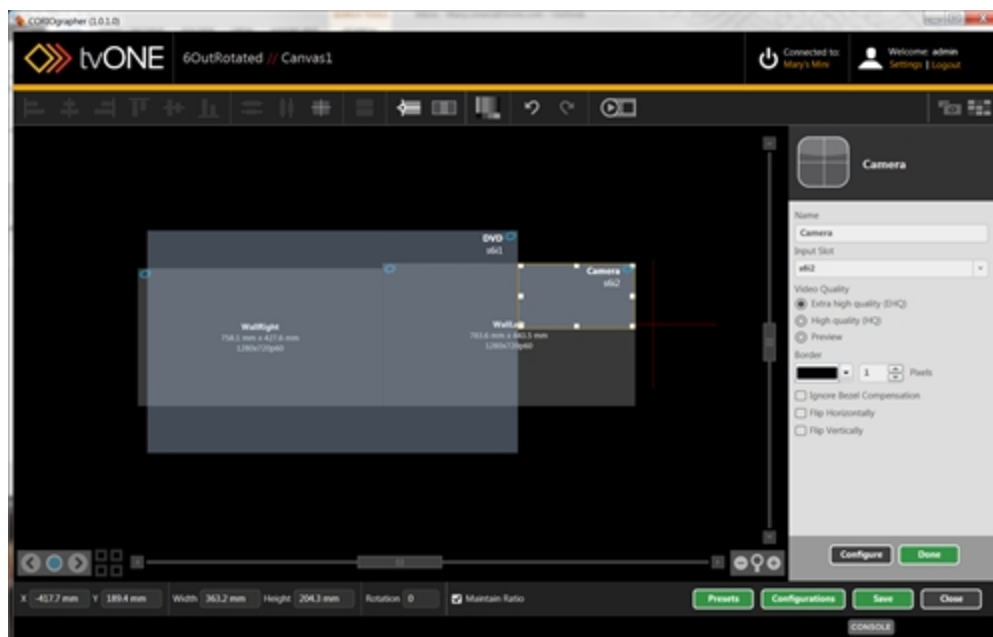
Name: TopLeftLCD	Bezel top: 10 (0 -70.1 Millimeter)
Equipment: Default 46 inch 4:3 Display	Bezel left: 10 (0 -93.47 Millimeter)
Resolution: 1920x1080@47.96	Bezel bottom: 10 (0 -70.1 Millimeter)
Colour Scale: Auto	Bezel right: 10 (0 -93.47 Millimeter)
HDCP Downstream: HDMI0a	Feed Name: Slot3.Out1
Output Type: RGBHV	Slot Card Type: DVI_U 2-out
Display Type: Monitor	HDMI: Not_Found
Lock Mode: Off	HDCP Status: Off
Lock Reference: NULL	Lock Status:

At the bottom of the form, there is a green 'Done' button and a red 'CONSOLE' button.

From the Display Configuration window, you can again "Display - Renaming Output Displays" on page 115 or resolution, but you can also specify Equipment, change the Color Scale, identify a "Genlock/Framelock" on page 71 Source, enable "HDCP" on page 73, identify the output type, set the display type, "Display - Defining Bezel" on page 109, and view other settings.

Configuring Windows

When you have double-clicked a Window item in the Displays & Sources pane, you get a new pane from which you can make some changes.



For an input, you can make various changes:

- Rename input windows ("Source - Renaming Windows or Inputs" on page 139)
- Change the input ("Source - Changing Input Slot" on page 127)
- Adjust the video quality of the window ("Source - Adjust Video Quality" on page 148)
- Add a window border to the input ("Source - Adjusting a Window Border" on page 124)
- Add any of several transition effects including Fade Through Black, Horizontal Shrink, Vertical Shrink and Spin ("About Transitions" on page 208)
- Ignore bezel compensation ("Source - Ignore Bezel Compensation" on page 138)
- Flip the window horizontally ("Source - Flip Horizontally or Vertically" on page 137)
- Flip the window vertically ("Source - Flip Vertically" on page 1)

If you click the Configure button at the bottom of the pane, you can access the Source Configuration.

From the Source Configuration window, you can again configure settings for the window:

- Rename input windows ("Source - Renaming Windows or Inputs" on page 139)
- Specify equipment ("Source - Specify Equipment" on page 144)
- Define source type ("Source - Defining Source Type" on page 1)
- Modify color scale ("Source - Color Scale" on page 129)
- Adjust brightness and contrast ("Source - Adjusting Brightness and Contrast" on page 125)
- Define a color to show in the event that there is no source signal ("Source - Defining Source Loss Window Color" on page 133)
- Enable HDCP settings ("Source - Enable HDCP" on page 135)
- Choose from a selection of preview video types ("Source - Set Preview Video" on page 141)
- Crop inputs to remove lines or rows from the edge of the image ("Source - Cropping inputs" on page 131)

Creating Display Equipment Profiles

If you have certain equipment that you use regularly, you can set each display up as a piece of equipment, which is essentially a saved "template" of common details for that display - display type, output type, physical size and bezel size. You can store the profile for each piece of equipment, so when you create new configurations, you don't have to set up all the same details over and over. If you have one projector that you tend to use frequently and three types of display on your video wall, you can set each one up as an item of equipment, and when you build your video wall you simply select the appropriate piece of equipment to avoid having to configure the details each time you set up a new configuration.

The equipment file is kept on your PC, not on the CORIOmaster, but you can transfer the file to another PC if you want to use it in more than one location. The file is saved to your user-`\Documents\CORIOgrapher\Equipment\Displays` and the filename is the display's name in CORIOgrapher, with the extension `.xml`.

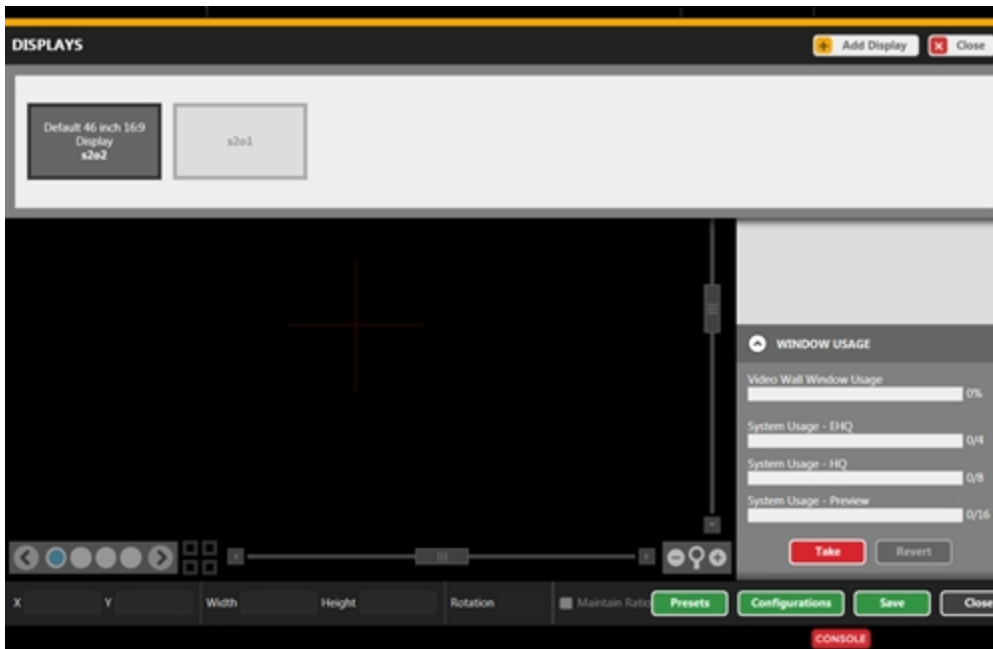
To create a display equipment profile:

1. Click the plus button next to Displays in the Displays & Sources pane.

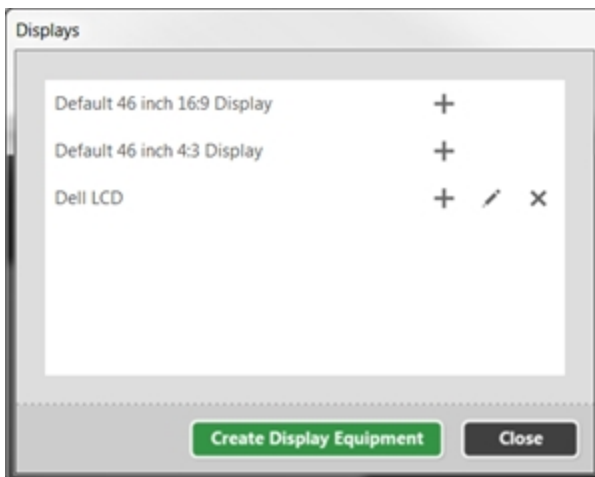


2. A pop-up bar will show all recognized unassigned output slots, if you are actively connected to a CORIOmaster. If you are not actively connected or if all display slots are

already assigned (even in other video walls), nothing will appear in the Displays pane.



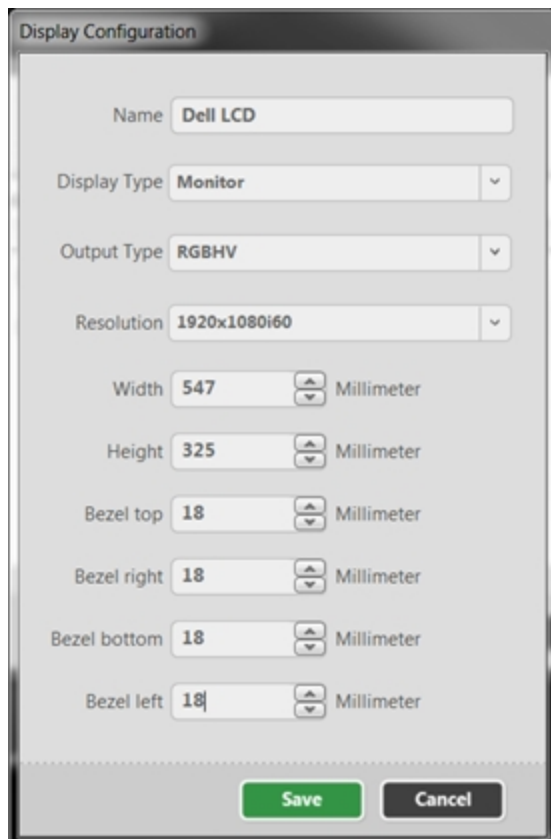
3. Click the Add Display button to open a pop-up window.



In this pop-up window, click the Create Display Equipment button.

4. A window pops up asking you to enter details about your output device. The more specific you can be here, the fewer details you will need to enter in the Configuration

window each time you use the equipment.



The screenshot shows a 'Display Configuration' dialog box with the following fields and values:

- Name: Dell LCD
- Display Type: Monitor
- Output Type: RGBHV
- Resolution: 1920x1080i60
- Width: 547 Millimeter
- Height: 325 Millimeter
- Bezel top: 18 Millimeter
- Bezel right: 18 Millimeter
- Bezel bottom: 18 Millimeter
- Bezel left: 18 Millimeter

At the bottom of the dialog are 'Save' and 'Cancel' buttons.

After you have entered this information, click Save to return to the Displays window. It shows the default choices plus your newly-specified configuration.

5. If you want to create another Equipment profile, click the Create Display Equipment button again, and enter the information for the second piece of display equipment. Repeat these steps as many times as you need until your equipment details are saved.
6. When you have finished creating display profiles, close the Displays pop-up window if you do not wish to create a display in your video wall right now. (If you do, follow the steps in "Adding Displays" on page 38).

Creating Source Equipment Profiles

If you have certain equipment that you use regularly, you can set each source up as a piece of equipment, which is essentially a saved "template" of common details for that window - preferred preview video type, source type, input resolution, and physical size. You can store the profile for each piece of equipment, so when you create new configurations, you don't have to set up all the same details over and over. If you have one projector that you tend to use frequently and three types of display on your video wall, you can set each one up as an item of equipment, and when you build your video wall you simply select the appropriate piece of equipment to avoid having to configure the details each time you set up a new configuration.

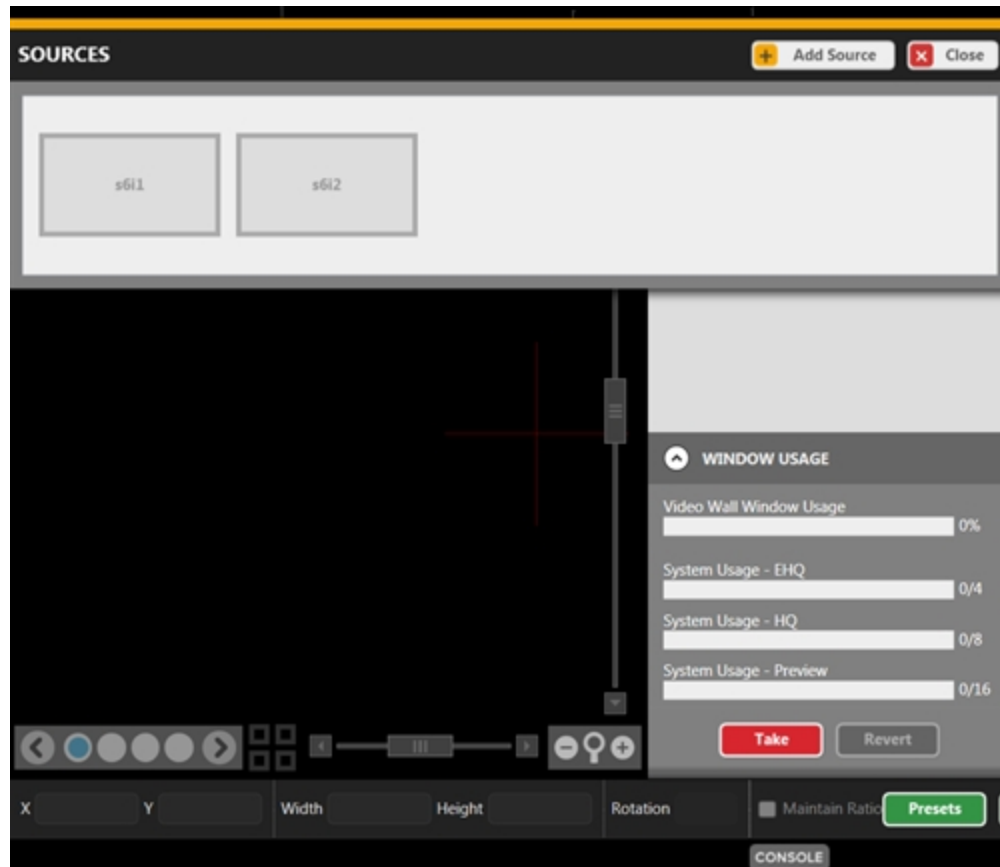
The equipment file is kept on your PC, not on the CORIOmaster, but you can transfer the file to another PC if you want to use it in more than one location. The file is saved to your user-`\Documents\CORIOgrapher\Equipment\Sources` and the filename is the source's name in CORIOgrapher, with the extension `.xml`.

To create a source equipment profile:

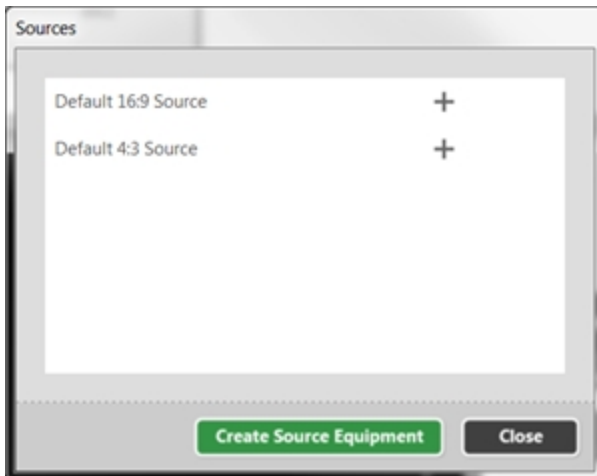
1. Click the plus button next to Sources in the Displays & Sources pane.



2. A pop-up bar will show all recognized input slots, if you are actively connected to a CORIOmaster.

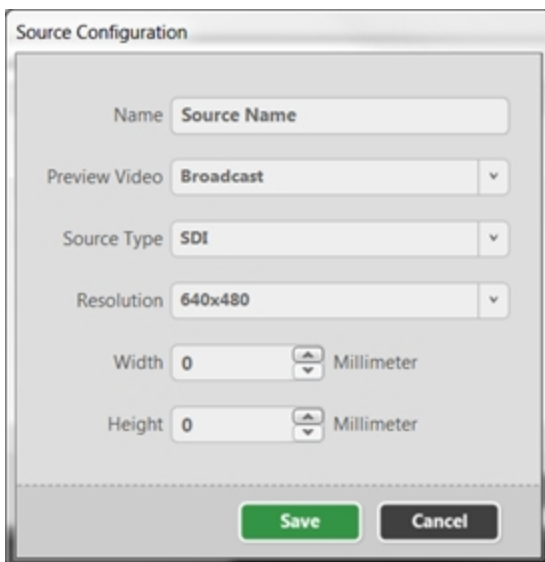


3. Click the Add Source button to open a pop-up window.



In this pop-up window, click the Create Source Equipment button.

4. A window pops up asking you to enter details about your input device. The more specific you can be here, the fewer details you will need to enter in the Configuration window each time you use the equipment.



After you have entered this information, click Save to return to the Sources window. It shows the default choices plus your newly-specified configuration.

5. If you want to create another Equipment profile, click the Create Source Equipment button again, and enter the information for the second piece of source equipment. Repeat these steps as many times as you need until your equipment details are saved.
6. When you have finished creating source profiles, close the Sources pop-up window if you do not wish to create a window in your video wall right now. (If you do, follow the steps in "Adding Displays" on page 38).

Displays and Sources pane


When you are editing a video wall in the Editor window, you can use the Displays & Sources pane to add your inputs and outputs. See "Adding Sources" on page 44 and "Adding Displays" on page 38 for instructions.

In addition to the editing that can be done in the video wall itself, the line in the Displays & Sources pane allows you to lock an item by clicking the lock icon (prevent it from being moved on the video wall), hide an item by clicking the eye icon (this is helpful if you want to reach the window behind it), edit its information by double-clicking the line, or delete it by clicking the X. See "Configuring Displays and Windows (Sources)" on page 50 for more information.


Priority

Once your displays and windows are added to the video wall, you can move them around as needed by clicking and dragging the item up or down the list in the pane. The video wall is built out of layers, with the top display in the Displays & Sources pane being at the back; the bottom window of the Displays & Sources pane being at the front.

Visibility

If you want to work with a layer behind the top layer, you can use the eye icon on the side pane () to hide that layer while you work with the bottom layer. Each input and output has its own visibility setting so you can toggle them as needed to work in the video wall.


Lock

If you have configured an item or multiple items on your video wall and don't want to risk them moving or being changed, you can lock those items to prevent accidental modification. The lock icon is on the side pane () next to the eye icon and is unique to each input and output.

Edit

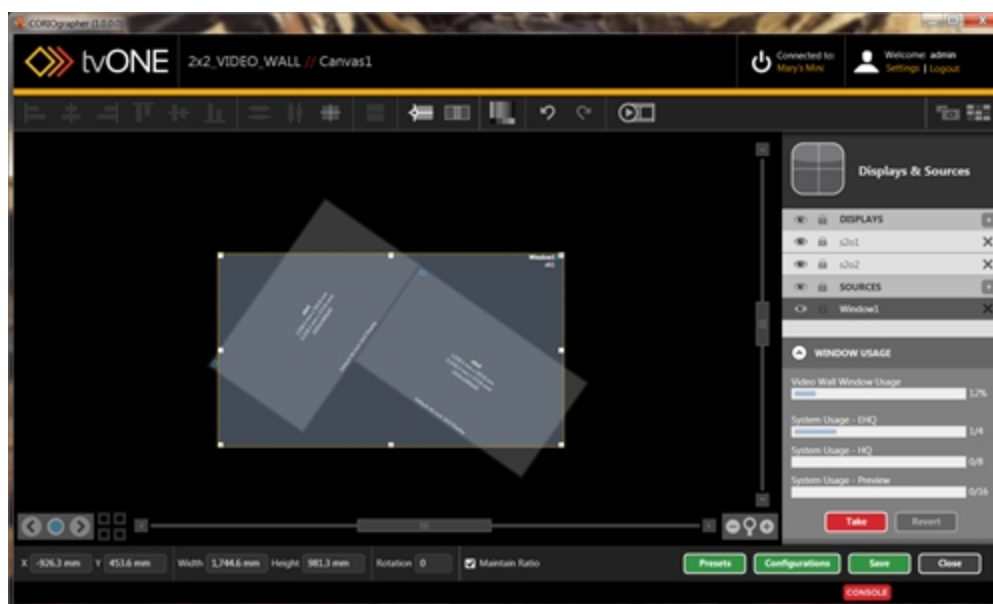
You can edit the information for a display or window by double-clicking the line for that item. This will open a window of information that you can modify as you wish.

Delete

If you decide you don't want to have a certain display or window on your video wall after all, you can delete the item by clicking the X () at the far right of the line. If you change your mind, you can add it back using the plus button to the right of the header bar that says Displays or Sources.


Working in the Video Wall

The video wall, in the Editor window, is the main black area where you can move and adjust your windows and displays to build a virtual representation of your physical video wall.



For information on adding windows and outputs to the video wall and using the visibility and locking features, see the instructions on using the "Displays and Sources pane" on the previous page

In addition to being able to hide layers and lock layers, the video wall itself has extensive functionality. You can drag-and-drop all input and output layers to your preferred location, and if you prefer to use grid co-ordinates, you can use the X and Y fields in the bottom left to define a screen position for the selected item. The width and height are also modifiable from the controls at the bottom of the window.

The Video Wall canvas itself can be navigated by using the elevator bars at the bottom and right of the canvas to move around. The magnifying glass icon  will automatically fit to zoom, while

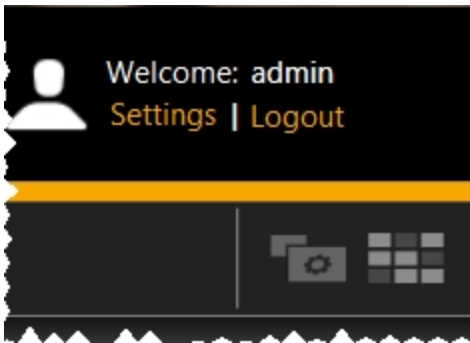
the plus and minus on each side will zoom in and out. You can also zoom using the control button along with scrolling the mouse wheel.

Video Wall

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Video Wall - Editor / Dashboard Buttons

If you are logged in as an Administrator or Power User, at the far right of the button bar, you can see two buttons that allow you to toggle between the Video Wall Editor and the Dashboard.



The leftmost button takes you to the Video Wall Editor, where you can arrange your inputs and outputs into the desired configuration.

Once a canvas is saved as you like it, click the rightmost button to go to the Dashboard to be able to choose between your saved canvases, choose presets, and redefine source inputs as needed. The Dashboard allows you to switch presets in a live environment, and change window inputs on-the-fly.


Moving between Video Walls

When you are working in the Editor with video walls, a CORIOmaster has four video walls per configuration; a CORIOmaster mini used to only have one video wall per configuration, but in early 2015, firmware version M307 increased this to four per configuration. You can swap between them in the Editor or from the Video Wall Overview page.

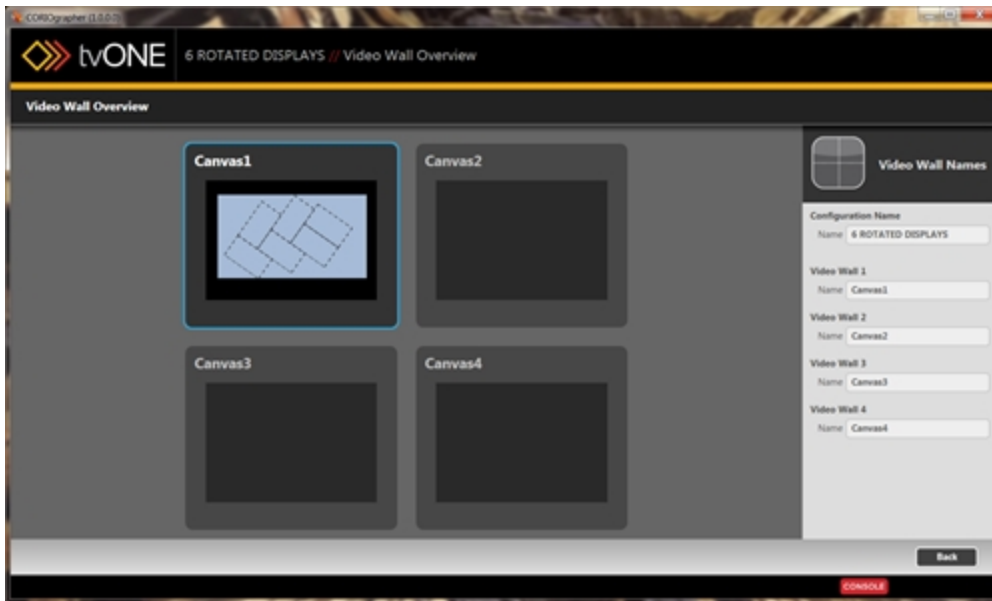
To move between video walls:

- In the Editor, at the bottom left of the page (above the X and Y coordinates), there are four dots between two arrows.



- The four squares on the right are the Video Wall Overview button . If you click the the Video Wall Overview button , the Video Wall Overview page will open. You can see a preview of the video walls available in this configuration. Click one of the video wall previews to go to the Editor with that video wall loaded, or edit the name of it here. The

video walls are named "Canvas1" through "Canvas4" by default.

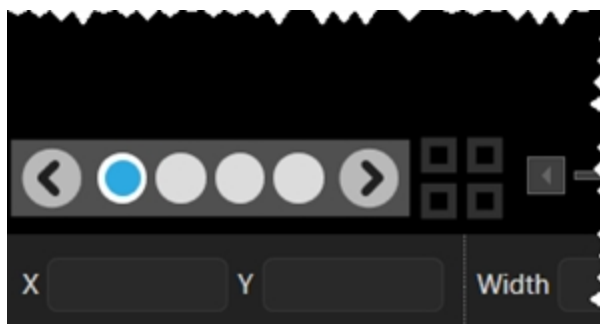


Renaming Video Wall

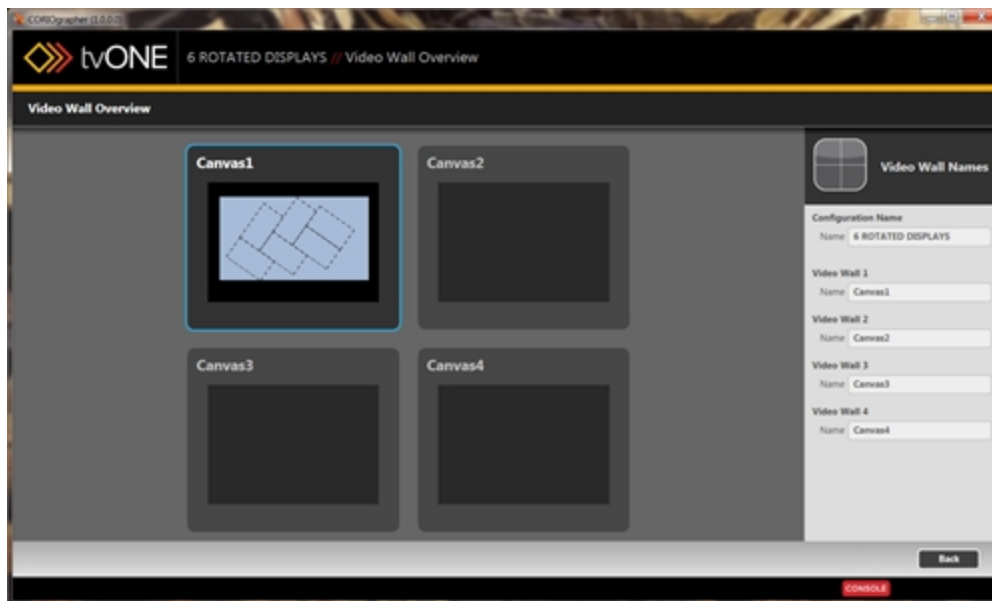
When you are working in the Editor with video walls, in addition to renaming sources and displays, you can rename the entire video wall to a more memorable name.

To rename your video wall:

1. In the Editor, at the bottom left of the page (above the X and Y coordinates), click the Video Wall Overview button.



2. In the Video Wall Overview page, you will see the canvases (video walls) available in this configuration.



3. In the right-hand pane, you can change the Configuration Name or the video wall name. Type your desired name into the appropriate field. The name must be a maximum of 19

characters, start with a letter, not contain any spaces, and be alphanumeric (underscore is also allowed).

4. Press Return or Enter to save the new name.

Genlock/Framelock

For each output, you can configure Genlock or Framelock, on the "Slot Status" on page 179 page. You can also configure a Genlock or Framelock for a specific output by going to the Configure settings for that output. See "Display - Lock Mode (Genlock, Framelock)" on page 107 for more information.

The screenshot shows the tvONE Settings // System interface. The left sidebar contains a navigation menu with categories: Settings (General, Networking, Users, Connections, Firmware and Defaults), Information (System, Slot Status, Constraints), and Slot Status. The main content area is divided into two sections: Input Slots and Output Slots.

Input Slots Table:

Slot	Name	Status	Card Type	HDMI	HDCP	Measured Resolution	Type
Slot2.In1	s2i1	INVALID	SDI_3G 2-in	Not_Found			SDI
Slot2.In2	s2i2	INVALID	SDI_3G 2-in	Not_Found			SDI
Slot3.In1	s3i1	INVALID	DVI_U 2-in	Not_Found	Off		DVI (HDMI)
Slot3.In2	s3i2	INVALID	DVI_U 2-in	Not_Found	Off		DVI (HDMI)
Slot4.In1	s4i1	INVALID	DVI_U 2-in	Not_Found	Off		DVI (HDMI)
Slot4.In2	s4i2	INVALID	DVI_U 2-in	Not_Found	Off		DVI (HDMI)

Output Slots Table:

Slot	Name	Card Type	HDMI	HDCP Active	Lock Mode	Lock Status	Lock Reference
Slot1.Out1	TopLeftLCD	DVI_U 2-out	Not_Found	Off	Framelock	Unlocked	s2i1
Slot1.Out2	s1o2	DVI_U 2-out	Not_Found	Off	Off		NULL

The Lock Mode for each Output is Off by default. To start Genlock or Framelock, select the appropriate input from the drop-down list under Lock Reference. Repeat this for all outputs that you wish to Genlock or Framelock.

What is Genlock?

Each output will normally free run at the chosen output resolution. In many situations, though, you may want to have these outputs co-timed (such as when each output is a part of a video wall). Genlock permits the width, height and frame rate of an output to be locked to match an input. Once you configure your inputs and outputs with the same resolution settings, you can lock them from this screen. (You may need to configure the second input or output on the same card to the same resolution, even if it is not being used, for Genlock to be available.)

What is Framelock?

Distinct from Genlock, Framelock uses the frame rate to lock images together. Framelock permits both the output and input to be set to a user-defined resolution and frame rate which must exactly match each other. (60 and 59.94 are not close enough for Framelock.) As with

Genlock, the second output on the same card needs to be set to the same resolution and frame rate.

SD-SDI input cards cannot be used as reference signals at some resolutions - see "Troubleshooting Framelock or Genlock with SDI Input Modules" on page 316 for more information.

HDCP

The dual-link Integrated DVI (DVI-I)¹ inputs and outputs on a CORIOmaster are fully compliant with HDCP (High-bandwidth Digital Content Protection). This can, however, cause serious operational issues.

HDCP settings can be adjusted in the configuration page for each input or output.

On each DVI Input you have a checkbox to enable HDCP communications with the source. tvONE strongly recommend that you disable HDCP when you are connecting to a computer that has HDCP capability but will not be playing out protected material. Otherwise the channel will become encrypted and limit system functionality. For instructions on configuring HDCP for a source, see "Source - Enable HDCP" on page 135

On Outputs you can configure the HDCP Downstream setting to HoldOn, KeepOff, or FollowSources. KeepOff disables HDCP key transfer and is recommended for non-compliant displays. HoldOn is used for compliant monitors and projectors. FollowSources turns HDCP on or off depending on the settings of the input. For instructions on configuring HDCP Downstream for a display, see Display - Configure HDCP.



Note: For correct operation with an HDCP source, ALL outputs connected to that source must be HDCP Compliant. In the case of the CORIOmaster, if one or more windows used on a video wall comes from an HDCP-encrypted source then all outputs linked to the video wall must be HDCP compliant. If not, then no output image will occur.



Note: In the event that you want to use YC or CV analog video, a card with Universal DVI (DVI-U) ports is available from tvONE. These DVI-U ports can use adapters (available from tvONE) to attach composite video or analog signals to the DVI-U connector.

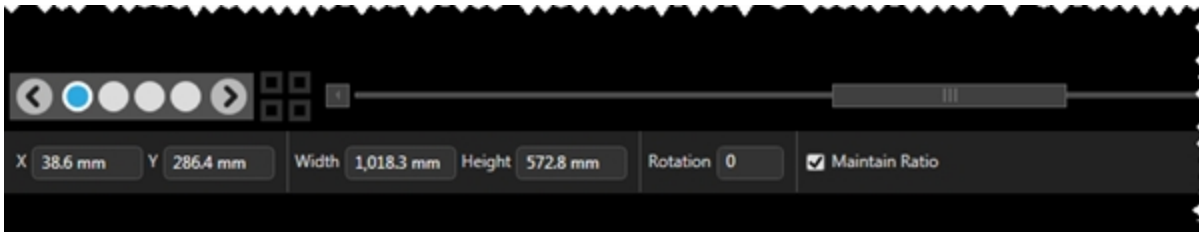
¹Beginning with firmware version M307, CORIOmaster and CORIOmaster mini units were redesigned to use DVI-I cards by default. Prior to this date, DVI-U connectors were default. If your CORIOmaster has DVI-I cards, be sure to use appropriate (M307 or later) firmware.

Video Wall Navigation

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Video Wall- Editing Object Location

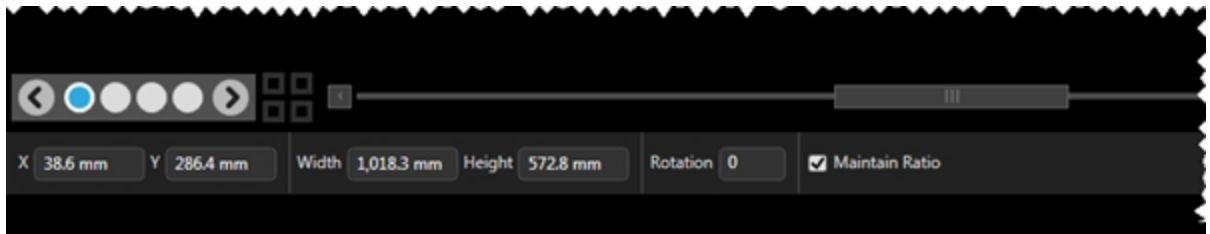
When you select a window or display in the video wall by clicking on it, some text fields below the video wall will auto-populate the window or display's saved settings. Size, rotation, and location on the video wall can be edited here.



There are three ways to adjust the location of a selected item on the video wall. You can physically move the window by dragging with the left mouse button to the desired location, or for fine tuning, you can select the window and adjust its location using the arrow keys on the keyboard or you can enter the X and Y coordinates for the top left corner of the window. The center of the video wall is 0, 0; the X axis runs horizontally and the Y axis runs vertically with positive values going up and right of the center.

Video Wall - Editing Object Rotation

When you select a window or display in the video wall by clicking on it, some text fields below the video wall will auto-populate the window or display's saved settings. Size, rotation, and location on the video wall can be edited here.

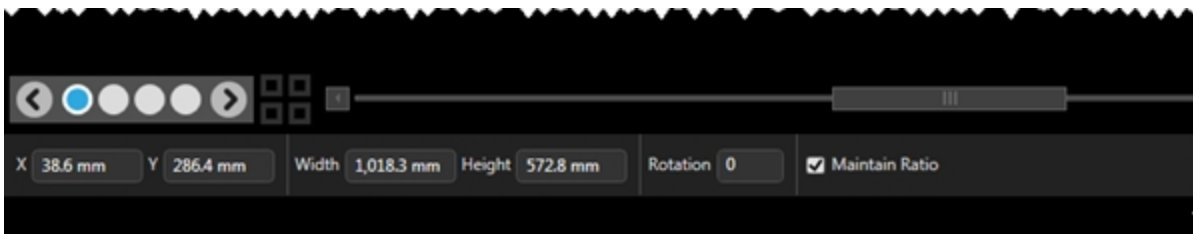


There are two ways to adjust the rotation of a selected item on the video wall. You can physically rotate the window with the mouse by control-clicking the bottom right corner and dragging the window to the proper angle, or you can enter the rotation value, in degrees, in the Rotation field below the video wall.

The default, not rotated, is 0; rotated right is 90 (or -270); rotated left is 270 (or -90). The field accepts values from -359 to 359. If you enter a negative value, it will be converted to the positive number for the same angle.

Video Wall - Editing Object Size

When you select a window or display in the video wall by clicking on it, some text fields below the video wall will auto-populate the window or display's saved settings. Size, rotation, and location on the video wall can be edited here.

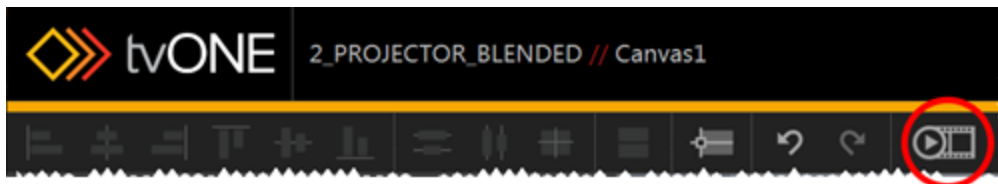


The system uses the width and height specified when you configured the equipment. This is the horizontal width and height, in canvas grid points, that the display or window is expected to fill. You can re-size a selected input or output by clicking and dragging a corner of the window or display, or you can type specific values into the width and height text fields. Note the check box for Maintain Ratio - if you wish to keep the aspect ratio consistent, leave this box checked. If you wish to widen or narrow the object, uncheck the box.

If you wish to crop a window to remove the edge, see "Source - Cropping inputs" on page 131.

Video Wall - Preview Mode

To help you construct video walls, a number of extra support buttons have been added to the top of the video wall.

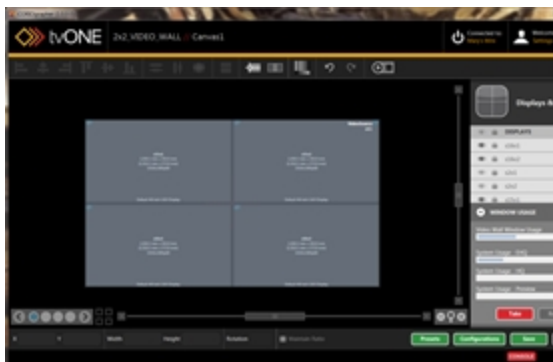


The Preview Mode button, the furthest right of the video wall button pane, is primarily intended as an offline tool, which allows you to see your inputs in the designated locations and verify the configuration you've just built.

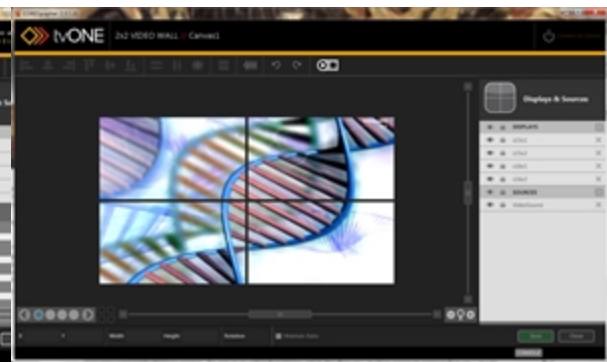
When you click the Preview button, the Source windows show a sample video clip, selected in the Source Configuration ("Source - Set Preview Video" on page 141). The Preview button takes into account any changes such as stretching, clipping, or flipping that may have been done to the video signal, although any borders will not appear on the video wall as they are not reflected on the video wall and only appear on the physical display.

While you are in Preview mode, it is not possible to move objects on the video wall. You can toggle between Editor mode and Preview mode, in order to verify changes you make in Editor mode, but while you are in Preview mode, there are no other functions (other than the Console button) available. To return to other functions, click the Preview button again to cancel Preview mode.

Editor mode:

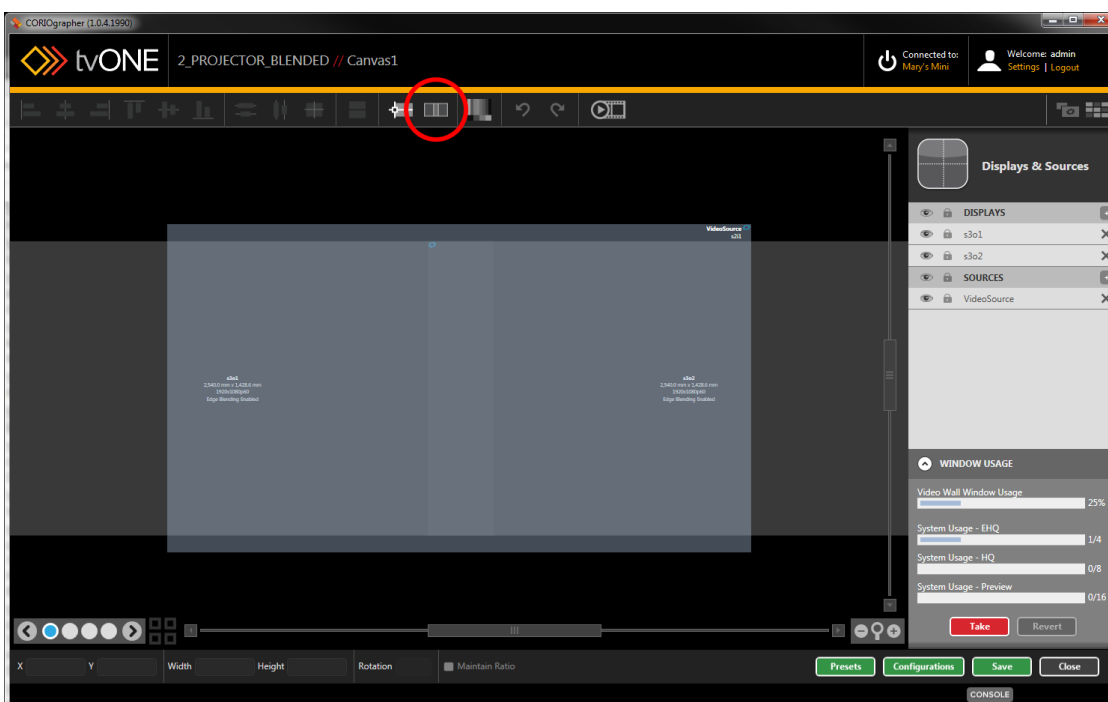


Preview mode:



Video Wall Aids - Align Projector

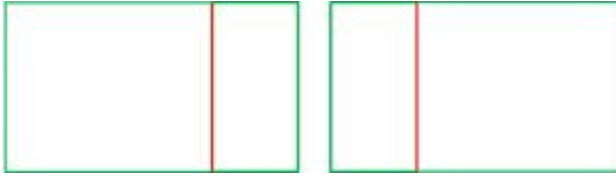
To help you construct layouts a number of extra support buttons have been added to the top of the video wall. The Align Projector button helps you configure edge blending and align projectors accurately so you can project a large image across multiple projectors.



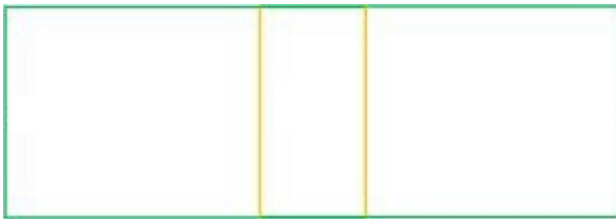
If your outputs are configured as projectors rather than display screens, you will want to use edge blending and align the projectors so that the image is consistent and clear across multiple projectors. To assist in configuring this, you can use the Align Projector button in the row of buttons above the video wall.

If you click the Align Projector button, you are prompted to select two projectors to configure alignment and Gamma correction, SCurve and Black Level Boost. If you select just one projector, you can adjust the Gamma correction, SCurve and Black Level Boost for that single output.

When you have clicked the Align Projector button and selected two projectors, the projected images show a red and green image that allow you to align them accurately, using fine tuning in the Align Projector pane to nudge the images in the video wall into the right position, so you can align the projected images in real time, from this:



to this:



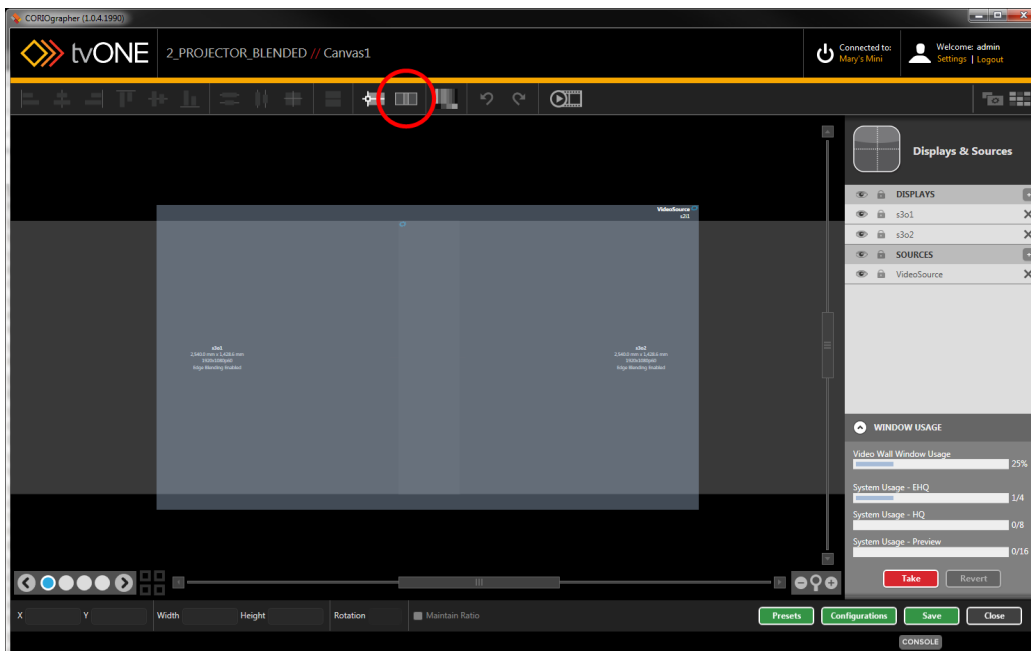
The location of the red guide lines is dependent on how much overlap you indicate on your video wall. tvONE recommends that you overlap the projectors enough to allow SCurve adjustments to be effective, but that the overlap be no more than 500 pixels or 50% of the width, whichever is less. Be sure the window or windows being output to the projectors is EHQ, for maximum clarity of the blended area.

From this location, you can also adjust color, SCurve and black level projection. For more information, see "Edge Blending Tutorial" on page 119.

Video Wall Aids - Align Projector - Gamma

When you are aligning projectors ("Edge Blending Tutorial" on page 119) there are a number of options you can configure, including Gamma correction settings.

1. Select ONE projector output (be sure the outputs are defined as projectors - see "Display - Defining Display Type" on page 111) and click the Align Projector button in the top bar:



2. The Align Projector pane appears in the right hand side of the Video Wall, with various configurable options, including RGB values, SCurve, Black Level Boost, and a button to

reset the edge blending settings.



3. Adjust the Red, Green and Blue gamma correction settings up or down to optimize the luminance of your projectors. The goal is to have matched the luminance and colors as much as possible using the manufacturer's settings initially, but any further discrepancies can be adjusted here.
4. Click the Done button when you have finished configuring the projector, and be sure to Save your settings.

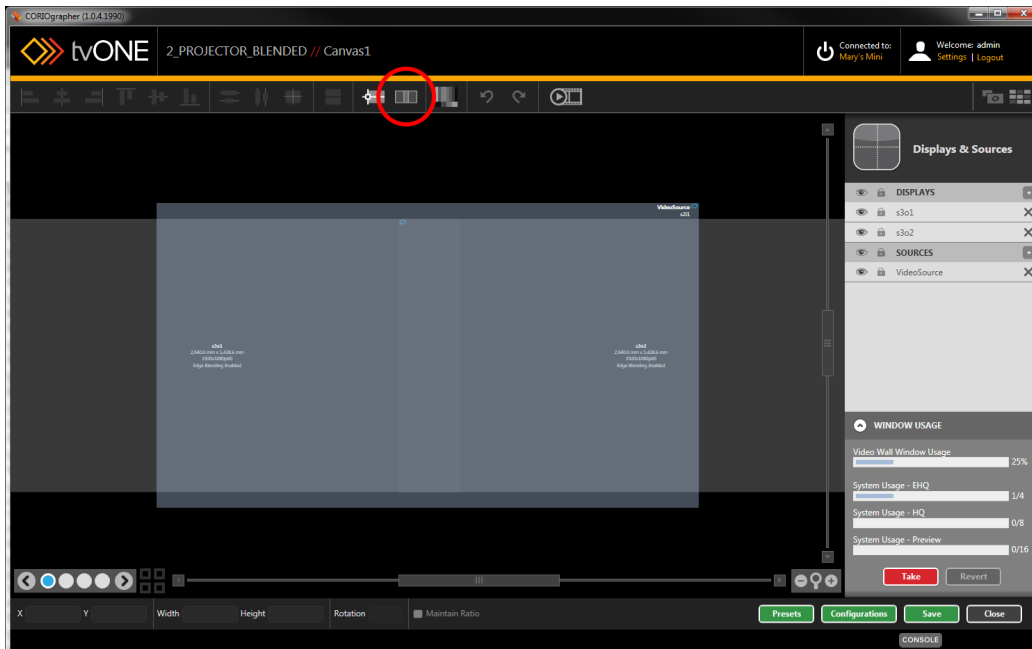


Note: It is possible to adjust these settings when you have both projectors selected; however, you will not see desired results as settings are being changed on both projectors simultaneously, which does not resolve any luminance discrepancies between the two projectors. Be sure you are adjusting the gamma for one projector at a time, by only selecting one projector in step 1.

Video Wall Aids - Align Projector - SCurve

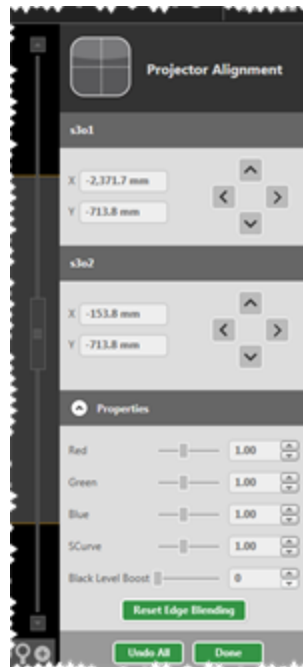
When you are aligning projectors ("Edge Blending Tutorial" on page 119) there are a number of options you can configure, including SCurve settings.

1. Select two projector outputs (be sure they are defined as projectors - see "Display - Defining Display Type" on page 111) and click the Align Projector button in the top bar:



2. The Align Projector pane appears in the right hand side of the Video Wall, with various configurable options, including RGB values, SCurve, Black Level Boost, and a button to

reset the edge blending settings.



3. Adjust the S-Curve settings up or down to optimize the luminance of your projectors. The goal is to have matched the luminance and colors as much as possible using the manufacturer's settings initially, and the S-Curve settings adjust the brightness of the blending edges.
4. Click the Done button when you have finished configuring the projectors, and be sure to Save your settings.

S-Curve adjusts the brightness of the image at the blending edge, in order to try to match brightness at the point of overlap. Two examples below show excessive dimness at the edge of the image (left), resulting in a black edge in the center of the image, and correctly-adjusted brightness, resulting in a consistency of brightness across the full image (right).

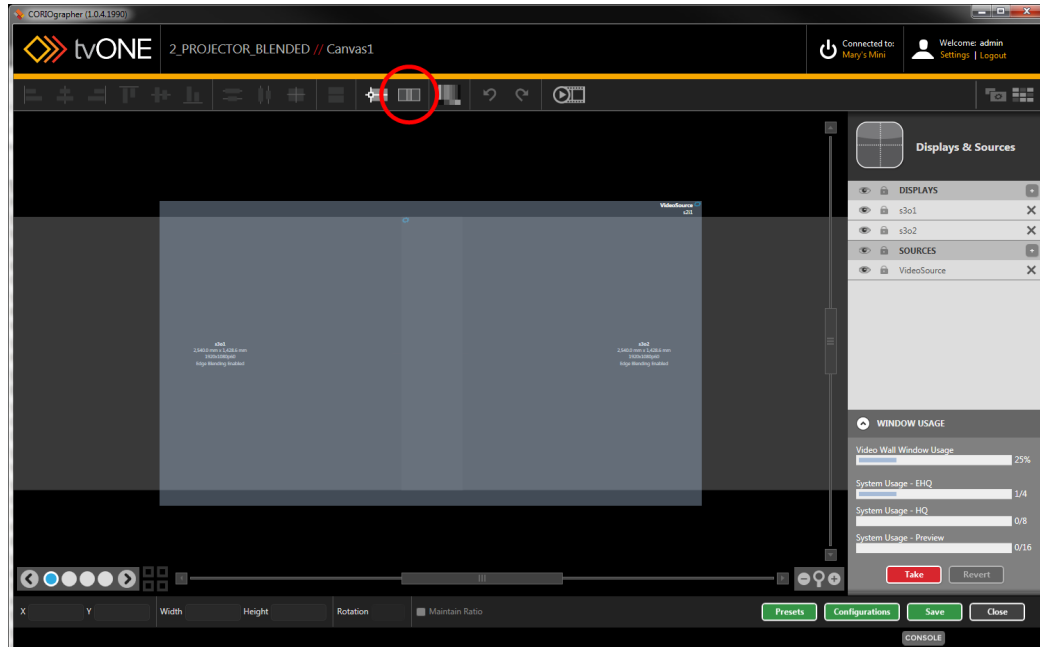




Video Wall Aids - Align Projector - Black Level Boost

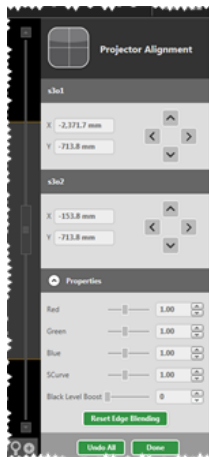
When you are aligning projectors ("Edge Blending Tutorial" on page 119) there are a number of options you can configure, including Black Level Boost settings.

1. Select two projector outputs (be sure they are defined as projectors - see "Display - Defining Display Type" on page 111) and click the Align Projector button in the top bar:



2. The Align Projector pane appears in the right hand side of the Video Wall, with various configurable options, including RGB values, SCurve, Black Level Boost, and a button to

reset the edge blending settings.

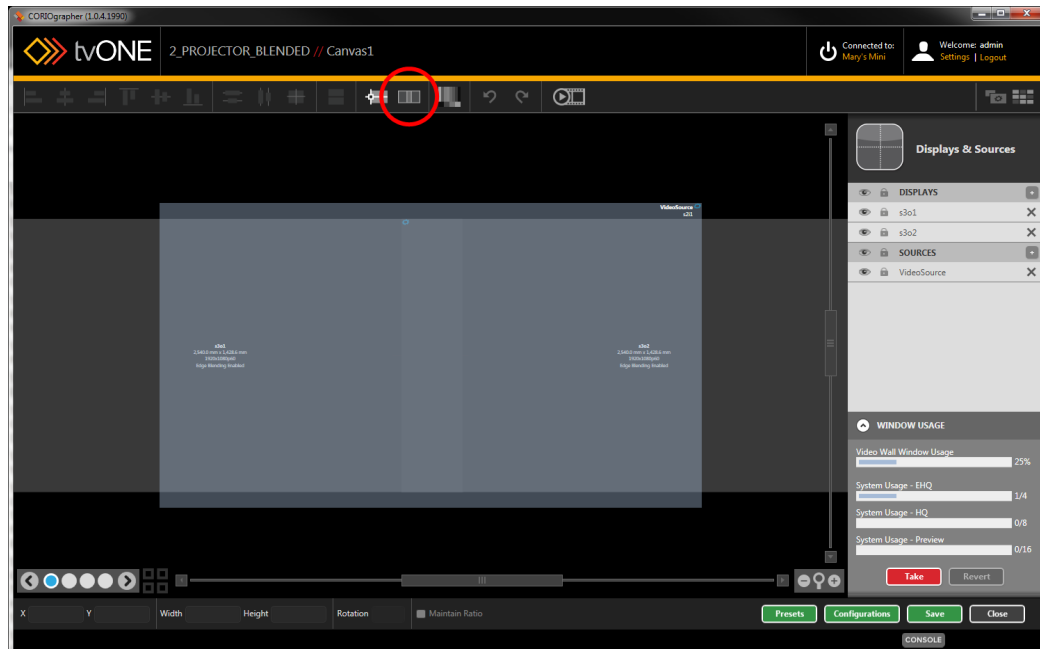


3. Adjust the Black Level Boost settings to optimize the luminance of your projectors. The goal is to have matched the luminance and colors as much as possible using the manufacturer's settings initially, but from here you can adjust the brightness of the black sections of the image on both projectors, to avoid dips, dots, or bright spots. If there is a discrepancy between the black level on the two projectors, be sure to select and adjust one projector at a time; if you adjust settings on both projectors you will not resolve the discrepancy.
4. Click the Done button when you have finished configuring the projectors, and be sure to Save your settings.

Video Wall Aids - Align Projector - Reset Edge Blending

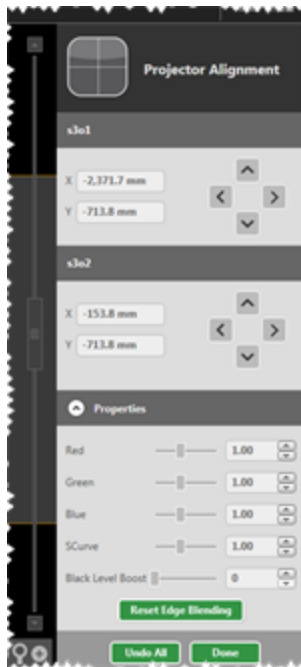
When you are aligning projectors ("Edge Blending Tutorial" on page 119) there are a number of options you can configure, including resetting all edge blending settings.

1. Select two projector outputs (be sure they are defined as projectors - see "Display - Defining Display Type" on page 111) and click the Align Projector button in the top bar:



2. The Align Projector pane appears in the right hand side of the Video Wall, with various configurable options, including RGB values, SCurve, Black Level Boost, and a button to

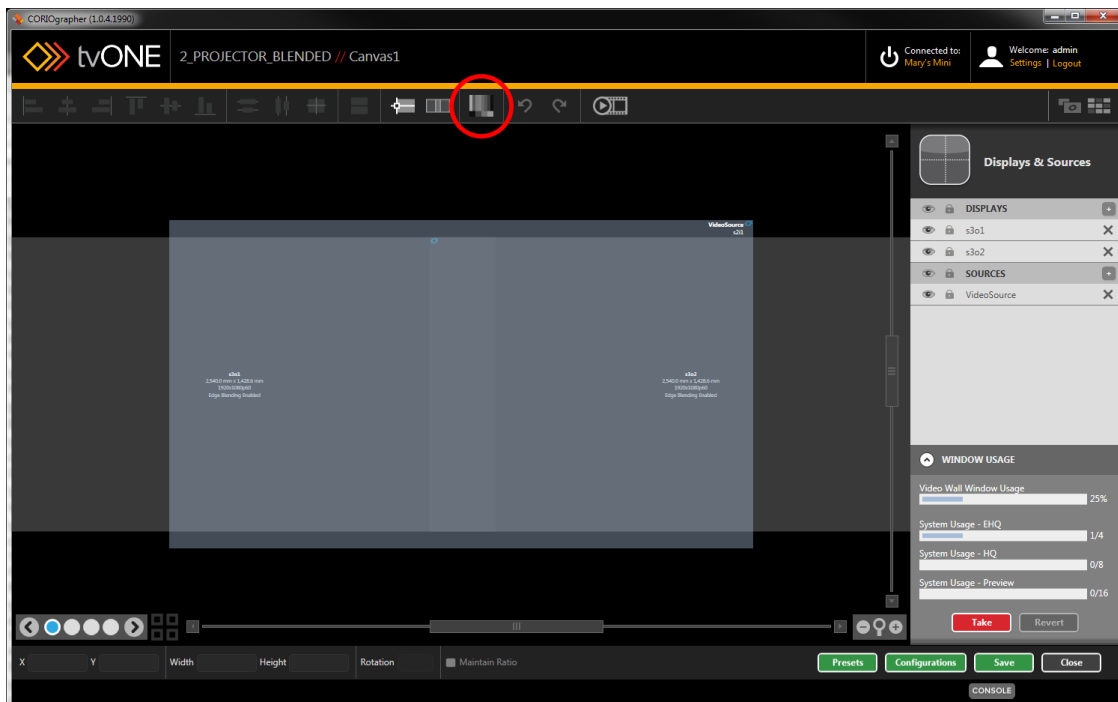
reset the edge blending settings.



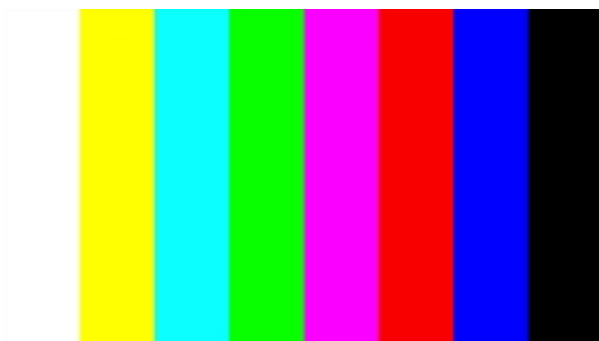
3. If you have modified the settings in such a way that you want to undo your changes and reset the projectors to the default setting, press the Reset Edge Blending button.
4. Click the Done button when you have finished configuring the projectors, and be sure to Save your settings.

Video Wall Aids - Test Pattern

To help you construct layouts a number of extra support buttons have been added to the top of the video wall. The Test Pattern button helps you configure your displays by replacing all input signals with a test pattern.



When you click the Test Pattern button, all input signals are replaced with a default test pattern. Any outputs on that Canvas that are configured to use an input will display the following image:



With this image showing, you can fine-tune your colors and vertical alignment of displays. See "Display - Adjusting Color Scale" on page 100 or "Display - Changing Gamma Values" on page 102 for details on tuning the color settings of the display.

Video Wall Aids - Alignment

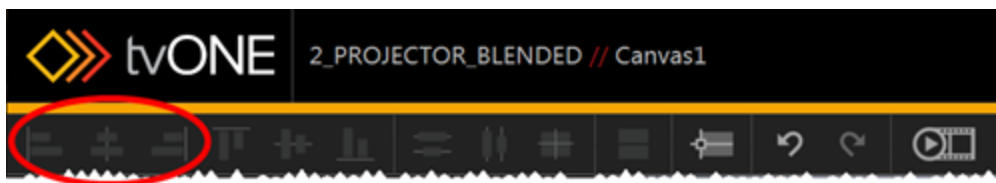
To make alignment of objects easier, a set of buttons are available to help you adjust two or more items to align a certain aspect.

There are six buttons - three for horizontal alignment (left, center, and right) and three for vertical alignment (top, middle, and bottom). Each button aligns the appropriate part of the item to save you from having to do careful measurements.

To use the buttons, first select the item you want the others to line up with. Then hold down the Control key and select any other items that you wish to align with the first. When all items are selected, release the Control key and click the Align button. Each item will retain its previous position for the other axis but change alignment so the relevant edges (or centers, for center-/middle alignment) are aligned.

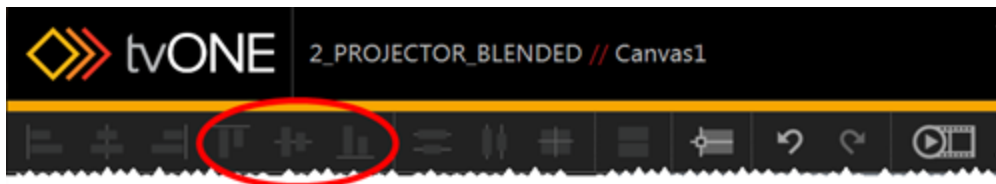
Horizontal Alignment

The three horizontal alignment buttons - Align Left, Align Center, Align Right.



Vertical Alignment

The three vertical alignment buttons - Align Top, Align Middle, Align Bottom.



Video Wall Aids - Distribution

To make alignment of objects easier, a pair of buttons are available to help you adjust two or more same-sized objects to create equal spacing.

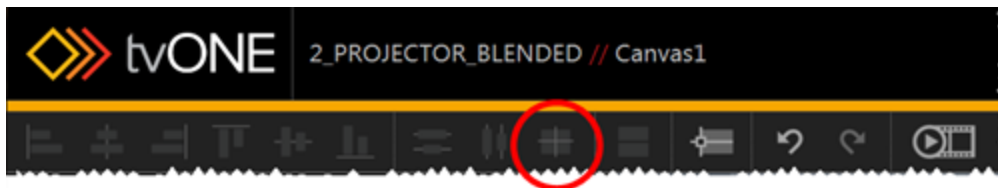


If you want three windows where the height difference between the top of the first and second is the same as the height difference between the top of the second and third, you would use the Distribute Vertically button. Similarly, the Distribute Horizontally button separates three windows equidistant from each other on the X axis.

To use the button, hold down the Control key and select the three items that you wish to distribute. The distribute button will move the middle item to be exactly halfway between the outer items, so make sure the outer two items are in the correct position. When all items are selected, release the Control key and click the Distribute Vertically or Distribute Horizontally button. The outer items will stay put and the middle item will retain its previous position in the other axis but change alignment so it is exactly halfway between the other two items.

Video Wall Aids - Move Object to Center

To help you construct video walls a number of extra support buttons have been added to the top of the video wall.



The ninth button, Move objects to center, moves any selected windows to the exact center of the video wall. It calculates the center point of the window (both horizontally and vertically) and puts the center point of the window or display at the center of the video wall.

To use the button, select the item that you wish to center. If you wish to center multiple items, hold down the Control button in order to select multiple items (or use the Center button repeatedly for each window - the result is the same). After selecting the item or items, click the Center button and the item or items will relocate to the center of the video wall, under the red cross-hairs.

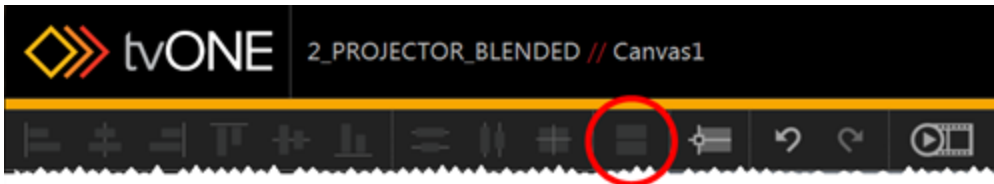
If you have moved multiple items, be aware that the lowest item in the list on the right is the topmost layer; the items higher in the list are layered behind.



Note: The window or display reference point is calculated from the top left corner, so the (X,Y) coordinates when centered on the video wall will not be (0,0) but will be offset relative to the top left corner of the window or display.

Video Wall Aids - Resize Objects

To help you construct video walls a number of extra support buttons have been added to the top of the video wall.

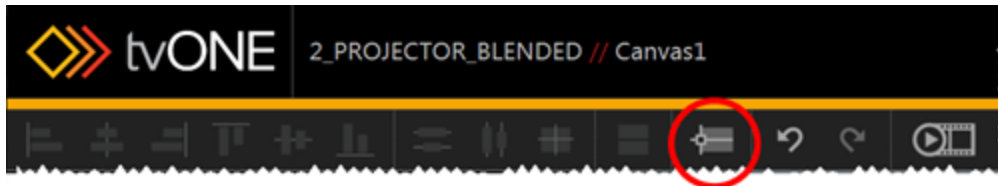


The resize button is provided to easily copy dimensions from one object to others. The resulting objects may not be the same size in actual (inches/millimeters) measurement, but this is to take a bezel into account. (Two displays of the same size and resolution may appear to be different sizes due to bezel; a display with lower resolution may also appear a different size from a higher resolution display.)

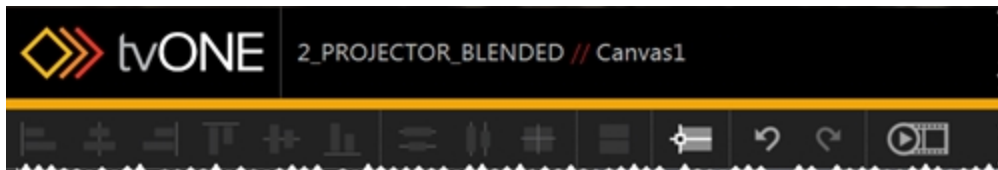
To resize objects, use the Resize button. To use the button, hold down the Control key and select the item that you wish others to match. Then select the other item(s) that you wish to match the size of the first. When all items are selected, release the Control key and click the Resize button. The subsequent items will adjust dimensions to match the first, while retaining the same center point on the video wall.

Video Wall Aids - Snap to Objects

To help you construct video walls a number of extra support buttons have been added to the top of the video wall.



The eleventh button, Snap to Objects, works differently from the other buttons. If you toggle the Snap to Objects button on, you will see it highlighted brighter than the surrounding buttons. If this feature is enabled, then the items will automatically snap to the edges of other objects, to simplify the process of alignment. The image above shows the Snap to Objects button gray and disabled; the image below shows the button bright and enabled.

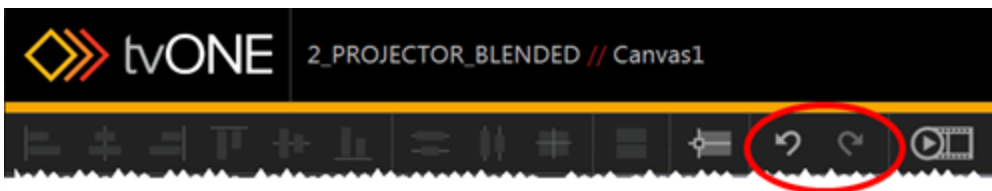


To use the button, simply click the Snap to Objects button so that it is brighter than the surrounding buttons. While the feature is enabled and you move an object on the video wall, when it approaches the edge of another object, it will gravitate towards that edge in an attempt to align. (This will not work if you are moving a group of objects.)

If you don't like this feature and wish to do your alignment manually, be sure the Snap to Objects button is disabled. You may find that you want to disable this feature as you are fine-tuning the placement of your windows and displays. In manual mode (with Snap to Objects disabled), you can use the arrow keys to nudge windows and displays around the video wall.

Video Wall Aids - Undo and Redo

To help you construct video walls a number of extra support buttons have been added to the top of the video wall.



The undo and redo buttons work the same as they do in any program. As is standard, you can use Control-Z and Control-Y as keyboard versions of these buttons.

The Undo button (or Control-Z) will step backwards through changes you've made, until it reaches the last saved state. If there are no changes available to undo, the arrow will be dark gray, indicating unavailability. You can undo changes back to the last saved state (saved either by clicking Save or Take).

The Redo button (or Control-Y) will step forwards again through changes you've made, if you've used the Undo button too many times and want to redo the changes. If you use the Undo button to step back and then make a new change, the Redo feature will no longer be available and will be dark gray.

Display Configuration

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Display - Adjusting Color Scale

When you have added displays to your video wall, you may find that you want to configure the color scale for an individual display. (Color scale can be adjusted on each input as well - for instructions, see "Source - Color Scale" on page 129.) To configure outputs for color scale, follow these steps:

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the display, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values. There is also a Configure button to access further settings - click the Configure button.



3. On the Display Configuration page that appears, there are a variety of customization options.

The screenshot shows the 'Display Configuration' page for 'Slot3.Out1'. The interface includes a header with the tvONE logo and navigation links. The main content area contains a form with the following fields:

Name: TopLeFLCD	Bezel top: 10 (0 -70.1 Millimeter)
Equipment: Default 46 inch 4:3 Display	Bezel left: 10 (0 -93.47 Millimeter)
Resolution: 1520x1080@3.96	Bezel bottom: 10 (0 -70.1 Millimeter)
Colour Scale: Auto	Bezel right: 10 (0 -93.47 Millimeter)
HDCP Downstream: HbA00s	Feed Name: Slot3.Out1
Output Type: RGBHV	Slot Card Type: DVLU_2-out
Display Type: Monitor	HDMI: Not_Found
Lock Mode: Off	HDCP Status: Off
Lock Reference: NULL	Lock Status:

A 'Done' button is located at the bottom right of the configuration area.

To configure the color scale, choose your preferred option from the drop-down menu next to the words Colour Scale. Choices include Auto (which auto-senses as best it can), Black, YUV, RGB, YUV_601, or YUV_709.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Display - Changing Gamma Values

When you have added outputs to your video wall, you may find that you want to change the Gamma settings for a given output. To do this, follow these steps:

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the display, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values.



3. To modify the Gamma, be sure you are connected to the CORIOmaster as Gamma cannot be set if you are not actively connected. If the option is minimized, it looks like this:



In that case, click the down arrow button to expand the Gamma settings.

4. In the Gamma settings area, there are three sliders with accompanying text boxes and arrows; one each for red, green, and blue. Adjust each slider as you wish. Drag the slider for large changes and use the arrows to nudge for minor changes, or if you have a

specific numerical value in mind, type it into the text box. Each scale defaults to a value of 1.00, with a functional range of 0.30 to 2.00.

5. If you have changed the values and wish to reset all Gamma values to 1.00, press the green Reset Gamma Values button, which will return all three settings to the default 1.00.
6. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.



Caution: Note that if you subsequently change the Equipment in the Display Configuration page, the Gamma values will reset to default. tvONE recommends that you configure the Gamma values last, after you have made all other configurations to the display.

Display - Changing Output Slot

When you have added outputs to your video wall, you may find that you want to change the slot that is assigned to a given output. To do this, follow these steps:

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the display, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values.



3. To change the output slot, choose the appropriate slot from the drop-down list under Output Slot. If your CORIOgrapher is actively connected to a CORIOmaster, the list will show any unassigned outputs available. Note that you cannot assign two different displays to the same physical slot. Verify that the slot you want has not been assigned to a different video wall.
4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Display - Changing Resolution

When you have added outputs to your video wall, you may find that you want to change the resolution of a given output. There are various ways to do this, depending on where you are in the application:

From Video Wall

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the display, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values.



3. To change the resolution, choose the appropriate line from the drop-down list under Resolution.
4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

From Display Configuration page

1. On the Display Configuration page that appears when you click Configure in the Displays & Sources pane, there are a variety of customization options.

The screenshot shows the 'Display Configuration' page for 'Slot3.Out1'. The page has a header with the 'tvONE' logo and 'Display Configuration // Slot3.Out1'. On the right, it shows 'Connected to: [device name]' and 'Welcome: admin' with 'Settings' and 'Logout' links. The main content area is titled 'Display Configuration' and contains two columns of settings. The first column includes: Name (TopLeFLCD), Equipment (Default 46 inch 4:3 Display), Resolution (1520x1080@3.96), Colour Scale (Auto), HDCP Downstream (Hdmi2), Output Type (RGBHV), Display Type (Monitor), Lock Mode (Off), and Lock Reference (NULL). The second column includes: Bezel top (10), Bezel left (10), Bezel bottom (10), Bezel right (10), Feed Name (Slot3.Out1), Slot Card Type (DVI_U_2-out), HDMI (Not_Found), HDCP Status (Off), and Lock Status. A green 'Done' button is located at the bottom right of the configuration area.

- In the first column, choose the appropriate line from the drop-down list under Resolution.
2. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Display - Lock Mode (Genlock, Framelock)

When you have added displays to your video wall, you may find that you want to configure Genlock or Framelock for an individual display. (To configure Genlock or Framelock for all displays at once, you can set it up via the Slot Status page in Settings - see "Slot Status" on page 179 and "Genlock/Framelock" on page 71.) To configure Genlock or Framelock for one display, follow these steps:

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the display, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values. There is also a Configure button to access further settings - click the Configure button.



3. On the Display Configuration page that appears, there are a variety of customization options.

The screenshot shows the 'Display Configuration' page for 'Slot3.Out1'. The page has a dark header with the 'tvONE' logo and navigation links. The main content area is a light gray form with the following fields:

- Name: TopLeftLCD
- Equipment: Default 46 inch 4:3 Display
- Resolution: 1920x1080@3.96
- Colour Scale: Auto
- HDCP Downstream: Hdb80c
- Output Type: RGBHV
- Display Type: Monitor
- Lock Mode: Off
- Lock Reference: NULL
- Bezel top: 10 (-70.1 Millimeter)
- Bezel left: 10 (-93.47 Millimeter)
- Bezel bottom: 10 (-70.1 Millimeter)
- Bezel right: 10 (-93.47 Millimeter)
- Feed Name: Slot3.Out1
- Slot Card Type: DVLU 2-out
- HDMI: Not Found
- HDCP Status: Off
- Lock Status: (empty)

At the bottom right of the form is a green 'Done' button. Below the form is a dark gray bar with a red 'CONSOLE' button.

To set up a Genlock or Framelock source, go to the Lock Mode drop-down menu. By default, it is set to Off but if you click the menu, you can select Framelock or Genlock.

- If you have enabled Lock Mode, the option below it, Lock Reference, becomes available. Click this drop-down menu to select a configured input. Depending on the resolution of the source and output, you may see a triangular yellow icon and an alert to caution you that Framelock or Genlock is not available.
- Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

What is Genlock?

Each output will normally free run at the chosen output resolution. In many situations, though, you may want to have these outputs co-timed (such as when each output is a part of a video wall). Genlock permits the width, height and frame rate of an output to be locked to match an input.

What is Framelock?

Distinct from Genlock, Framelock permits both the output to be set to a user-defined resolution which must exactly match the frame rate of the background source.

Display - Defining Bezel

When you have added displays to your video wall, you may find that you want to account for a bezel. To do this, follow these steps:

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the window, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values. There is also a Configure button to access further settings - click the Configure button.



3. On the Display Configuration page that appears, there are a variety of customization options.

The screenshot shows the 'Display Configuration' page for 'Slot3.Out1'. The interface includes a header with the tvONE logo and user information. The main content area contains two columns of settings:

Setting	Value
Name	TopLeftLCD
Equipment	Default 46 inch 4:3 Display
Resolution	1520x1080@3.96
Colour Scale	Auto
HDCP Downstream	Hdmi0a
Output Type	RGBHV
Display Type	Monitor
Lock Mode	Off
Lock Reference	NULL
Bezel top	10 (0 - 70.1 Millimeter)
Bezel left	10 (0 - 93.47 Millimeter)
Bezel bottom	10 (0 - 70.1 Millimeter)
Bezel right	10 (0 - 93.47 Millimeter)
Feed Name	Slot3.Out1
Slot Card Type	DVI_U_2-out
HDMI	Not_Found
HDCP Status	Off
Lock Status	

A 'Done' button is located at the bottom right of the configuration area.

To account for a bezel, adjust the Bezel top, Bezel left, Bezel bottom and Bezel right boxes up or down to indicate the size of the bezel in millimeters or inches. The number to the right shows the minimum and maximum bezel sizes possible (these sizes are a factor of the screen size - larger displays can have larger bezels).

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Display - Defining Display Type

When you have added displays to your video wall, you may find that you want to define the type of display it is. To do this, follow these steps:

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the display, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values. There is also a Configure button to access further settings - click the Configure button.



3. On the Display Configuration page that appears, there are a variety of customization options.

The screenshot shows the 'Display Configuration' page for 'Slot3.Out1'. The page has a dark header with the 'tvONE' logo and 'Display Configuration // Slot3.Out1'. On the right, there are status indicators: 'Connected to: [Device Name]', 'Welcome: admin', and 'Settings | Logout'. The main content area is titled 'Display Configuration' and contains a form with two columns of settings. The first column includes: Name (TopLeftLCD), Equipment (Default 46 inch 4:3 Display), Resolution (1920x1080@3.96), Colour Scale (Auto), HDCP Downstream (Hdmi0a), Output Type (RGBHV), Display Type (Monitor), Lock Mode (Off), and Lock Reference (NULL). The second column includes: Bezel top (10 -70.1 Millimeter), Bezel left (10 -93.47 Millimeter), Bezel bottom (10 -70.1 Millimeter), Bezel right (10 -93.47 Millimeter), Feed Name (Slot3.Out1), Slot Card Type (DVI_U_2-out), HDMI (Not_Found), HDCP Status (Off), and Lock Status. A green 'Done' button is located at the bottom right of the form area.

In the first column, the last item is a drop-down list labeled Display Type. If you click the drop-down menu, it shows a list of types of displays, such as Monitor, Projector, and None (if you wish to specify that the output is not used). If you had previously configured the display from the Equipment list, it may be pre-configured, but you may want to verify or configure it manually.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Display - Defining Output Type

When you have added displays to your video wall, you may find that you want to define the type of output connector it uses. To do this, follow these steps:

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the display, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values. There is also a Configure button to access further settings - click the Configure button.



3. On the Display Configuration page that appears, there are a variety of customization options.

The screenshot shows the 'Display Configuration' page for 'Slot3.Out1'. The interface is organized into two columns of settings. The left column includes: Name (TopLeFLCD), Equipment (Default 46 inch 4:3 Display), Resolution (1920x1080@3.96), Colour Scale (Auto), HDCP Downstream (Hdmi0a), Output Type (RGBHV), Display Type (Monitor), Lock Mode (Off), and Lock Reference (NULL). The right column includes: Bezel top (10 mm), Bezel left (10 mm), Bezel bottom (10 mm), Bezel right (10 mm), Feed Name (Slot3.Out1), Slot Card Type (DVI_U_2-out), HDMI (Not_Found), HDCP Status (Off), and Lock Status. A 'Done' button is located at the bottom right of the configuration area.

In the first column, one of the last items is a drop-down list labeled Output Type. If you click the drop-down menu, it shows a list of types of outputs that may be used, such as RGBHV, RGBS, RGsB, and YCbCr/YPbPr. If you had previously configured the display from the Equipment list, it may be pre-configured, but you may want to verify or configure it manually.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Display - Renaming Output Displays

When you have added outputs to your video wall, you may find that you want to give an output a name that is meaningful to you. There are various ways to do this, depending on where you are in the application:

From Video Wall

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the display, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values.



3. To rename the output, click into the Name field and type a new name. The name can be up to 19 alphanumeric characters (no spaces).
4. Press Return or Enter to commit the change.
5. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

From Display Configuration page

1. On the Display Configuration page that appears when you click Configure in the Displays & Sources pane, there are a variety of customization options.

The screenshot shows the 'Display Configuration' page for 'Slot3.Out1'. The page has a header with the 'tvONE' logo and 'Display Configuration // Slot3.Out1'. On the right, there are status indicators: 'Connected to: [Device Name]', 'Welcome: admin', and links for 'Settings' and 'Logout'. The main content area is titled 'Display Configuration' and contains two columns of settings. The left column includes: Name (text input with 'TopLeFLCD'), Equipment (dropdown: 'Default 46 inch 4:3 Display'), Resolution (dropdown: '1520x1080@3.96'), Colour Scale (dropdown: 'Auto'), HDCP Downstream (dropdown: 'HdmiOn'), Output Type (dropdown: 'RGBHV'), Display Type (dropdown: 'Monitor'), Lock Mode (dropdown: 'Off'), and Lock Reference (dropdown: 'NULL'). The right column includes: Bezel top (spinners: '10', '-70.1 Millimeter'), Bezel left (spinners: '10', '-93.47 Millimeter'), Bezel bottom (spinners: '10', '-70.1 Millimeter'), Bezel right (spinners: '10', '-93.47 Millimeter'), Feed Name (text input: 'Slot3.Out1'), Slot Card Type (text input: 'DVI_U_2-out'), HDMI (text input: 'Not_Found'), HDCP Status (dropdown: 'Off'), and Lock Status (text input). At the bottom right, there is a green 'Done' button and a red 'CONSOLE' button.

In the first column, click into the Name field and type a new name. The name can be up to 19 alphanumeric characters (no spaces).

2. Press Return or Enter to commit the change.
3. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Display - Specify Equipment

When you have added displays to your video wall, you may find that you want to allocate or re-allocate the equipment or display type you previously defined. (To learn how to create Equipment profiles, see "Creating Display Equipment Profiles" on page 55.) To allocate or re-allocate a pre-defined piece of equipment to a display, follow these steps:

1. In the video wall, double-click the item you would like to modify, or double-click the line for that output in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the display. You can rename the display, change output slot, or adjust resolution. If you are connected to a CORIOmaster, you can also set gamma values. There is also a Configure button to access further settings - click the Configure button.



3. On the Display Configuration page that appears, there are a variety of customization options.

The screenshot shows the 'Display Configuration' page for 'Slot3.Out1'. The page has a dark header with the tvONE logo and navigation links. The main content area is a light gray form with the following fields:

- Name: TopLeftLCD
- Equipment: Default 46 inch 4:3 Display
- Resolution: 1520x1080@3.96
- Colour Scale: Auto
- HDCP Downstream: HdbDts
- Output Type: RGBHV
- Display Type: Monitor
- Lock Mode: Off
- Lock Reference: NULL
- Bezel top: 10 (-70.1 Millimeter)
- Bezel left: 10 (-93.47 Millimeter)
- Bezel bottom: 10 (-70.1 Millimeter)
- Bezel right: 10 (-93.47 Millimeter)
- Feed Name: Slot3.Out1
- Slot Card Type: DVI_U_2-out
- HDMI: Not_Found
- HDCP Status: Off
- Lock Status: (empty)

At the bottom right of the form is a green 'Done' button. Below the form is a dark gray bar with a red 'CONSOLE' button.

To allocate a given piece of equipment to this display, choose your preferred option from the drop-down menu next to the word Equipment. Choices include any unallocated equipment you have defined plus the default equipment settings. Once you choose the item you want, any settings that were specified in that equipment file (such as bezel or output type) are auto-populated on this Display Configuration page for your convenience.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.



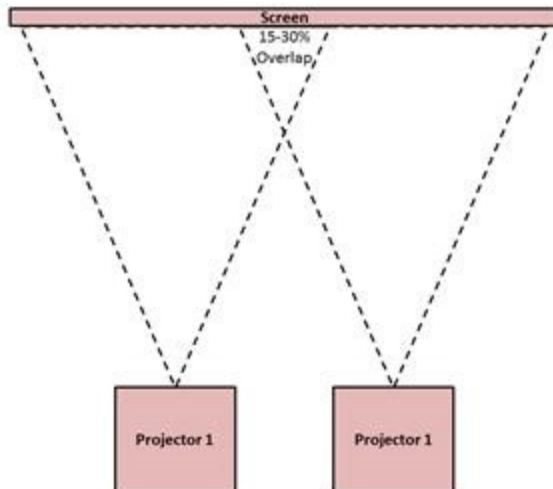
Note: Note that any changes you make to the equipment configuration here - changing the resolution, for example - will NOT be saved to the equipment file and will be a local change only. If you want to change the default values for the equipment, modify the Display Equipment file itself. For instructions, see "Creating Display Equipment Profiles" on page 55.

Edge Blending Tutorial

Edge blending is a method whereby two or more video/data projectors are used together with part of their images overlapping, thereby creating a wider (or taller) display more suitable for showing wide-screen video images. The term "edge blending" relates to the fact that the overlap needs to be carefully handled to prevent the overlap causing blurriness or image brightness problems. Follow the instructions here to set up two projectors using the Align Projectors button available in the CORIOgrapher software.

When you have configured Edge Blending, be sure to avoid moving the two projectors as the configuration is specific to a physical arrangement - if the two projectors are moved even slightly, the blending will need to be reconfigured.

In this arrangement, we are assuming that the two projectors are installed to be parallel to each other and perpendicular to the screen, and as level with each other as possible. Ideally you want to have approximately 15% of the viewable image overlapping.

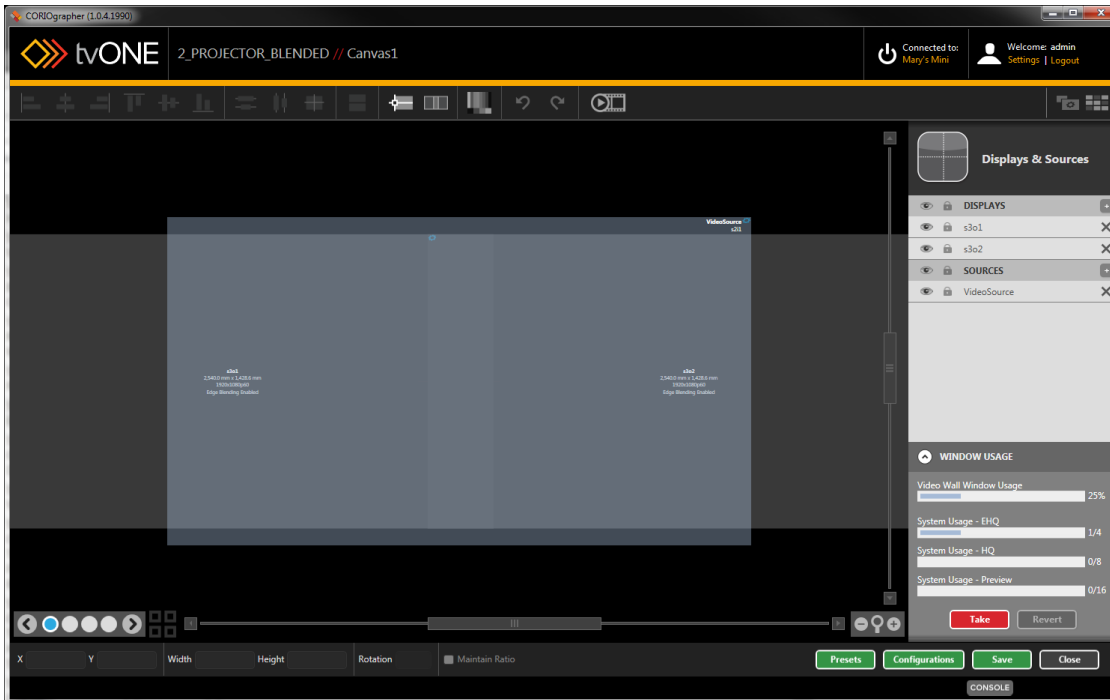


The resulting screen shows a combination of both images:



As much as possible, use the projectors' own settings to match hue, position and brightness before using the CORIOgrapher software to fine-tune the configuration.

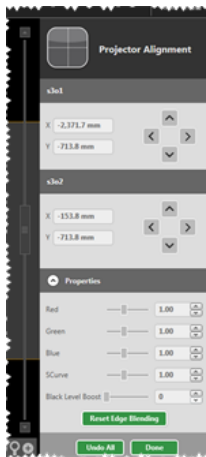
Start with the 2 PROJECTOR BLENDED template and save it to your CORIOmaster:



Make sure both projectors are configured as projectors in CORIOgrapher ("Display - Defining Display Type" on page 111).

When you select both projectors (press Control while clicking to select multiple items) and click the Align Projector button, a Projector Alignment pane appears on the far right of the Video

Wall:



Meanwhile, the software sends an Edge Blending test image to each of your projectors, with red and green vertical lines:



To blend the image accurately, adjust the alignment of each output - both physically moving the projectors, and in the Projector Alignment pane. First, use the up and down arrows to adjust the Y axis - line up the top and bottom horizontal lines until both images are vertically even. Then use the left and right arrows to adjust the X axis - horizontally align the two outputs such that the red line of one projector is exactly aligned with the green line of the other projector, and your screen shows two parallel yellow lines (formed by the red line of one projector and the green line of another) in the section where the images overlap:



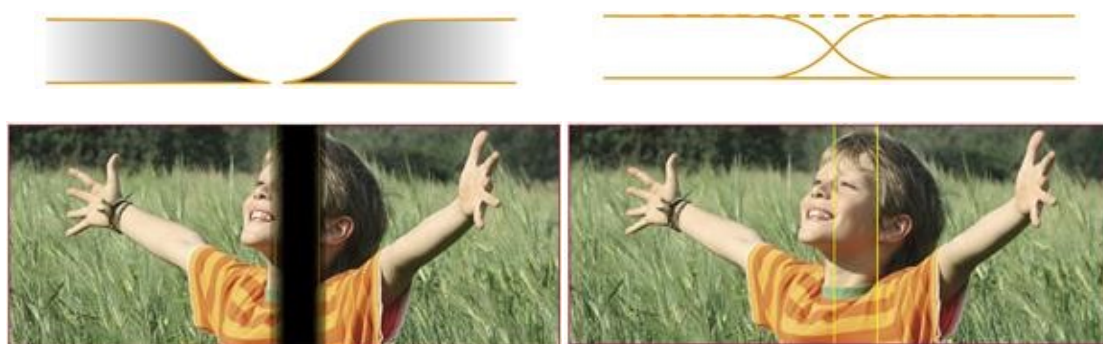
At this point, your image is now correctly aligned, but the blend between the two images needs adjusting. Ideally, both projectors will be identical with matching outputs, but if you find that one projector has different hues, you can adjust the Gammas for each projector individually. See

"Display - Changing Gamma Values" on page 102 for details, or use the Align Projector button with only one projector selected.

If both projectors have matching outputs, you can use the Properties section of the Projector Alignment tab to fine-tune the overlapping section of the image.

Red, Green and Blue adjust the colors for both projectors at once, just as they do for individual outputs.

SCurve adjusts the brightness of the image at the blending edge, in order to try to match brightness at the point of overlap. Two examples below show excessive dimness at the edge of the image (left), resulting in a black edge in the center of the image, and correctly-adjusted brightness, resulting in a consistency of brightness across the full image (right).



The last control, Black Level Boost, can raise the black level to match the lighting in the room.

Once you have configured both projectors to optimally blend and align the images, click the Done button at the bottom right corner of the Projector Alignment pane. Be sure to save your configuration by pressing the Save button at the bottom of the Video Wall.

Source Configuration

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Source - Adjusting a Window Border

When you have added inputs to your video wall, you may find that you want to add a border to a given window, of any desired thickness or color. To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality.



3. To add a border, select the color from the drop-down list or click Advanced for more options. (The default border color is black.) In the box to the right of the color-picker, type in the number of pixels you would like the border to be or use the arrows to increase or decrease the number. (All sides have equal border; default border size is one pixel.)
4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.



Note: It is recommended that if you are using the rotation feature on a window, maintain at least a one-pixel border in order to maintain optimal video quality.

Source - Adjusting Brightness and Contrast

When you have added inputs to your video wall, you may find that you want to adjust the brightness and contrast on an window. To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. There is also a Configure button to access further settings - click the Configure button.



3. On the Source Configuration page that appears, there are a variety of customization options.

Source Configuration

Name	s3i1	Preview Video	Broadcast
Equipment		Top input crop	0
Source Type	DVI (HDMI)	Left input crop	0
H Phase		Bottom input crop	0
Colour Scale	Auto	Right input crop	0
Brightness	0	Status	OK
Contrast	100	Fixed Name	Slot3.In1
Source Loss Color	Blue	Slot Card Type	DVI_U 2-in
HDCP Enabled	<input checked="" type="checkbox"/>	Resolution	640x480p60
HDCP	Off	EDID Filename	s3i1.edd

In the first column are two text fields labeled Brightness and Contrast. Each has arrows to increment up or down on the right. Adjust the brightness and contrast for your source as you wish.

The default value for brightness is 0 and the available range is -30 to 30. For contrast, the default value is 100 and the available range is 30 to 130.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Source - Changing Input Slot

When you have added windows to your video wall, you may find that you want to change the slot or source that is assigned to a given window. To do this, there are various methods. Follow your choice of these steps:

From Displays & Sources pane

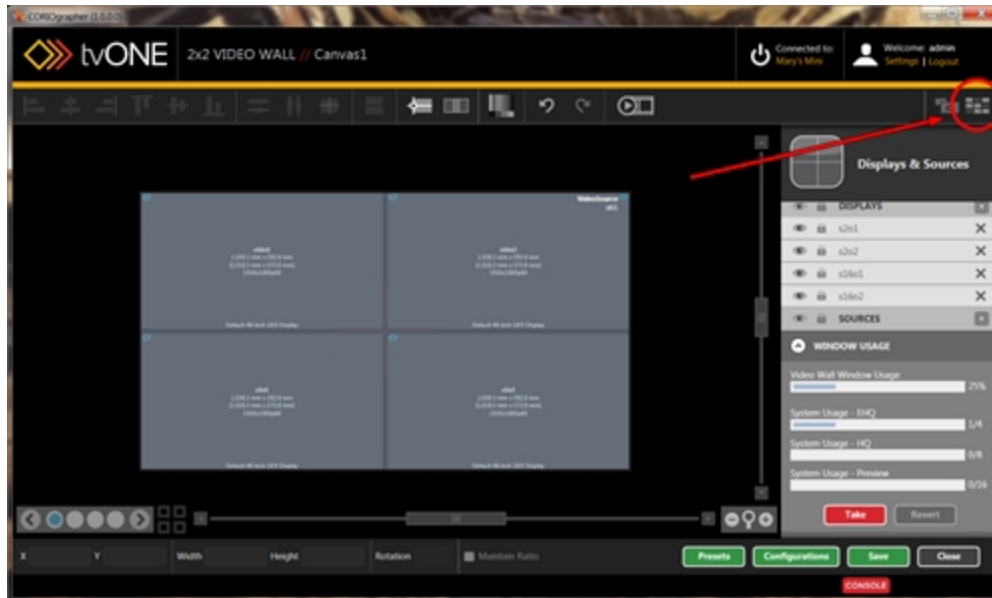
1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality.



3. To change the input source for this window, choose the appropriate input from the drop-down list under Input Slot.
4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

From Window Source in Dashboard

1. While connected to a CORIOmaster, click the Dashboard icon in the top right corner of the video wall.



2. In the Dashboard window, you can switch between source inputs for a given window, on-the-fly. Next to each window, all available inputs are shown as buttons. The currently-used input is shown in blue; an available input is shown in gray. If you are in Synchronized mode (see "Immediate vs Synchronized" on page 193 for an explanation of the difference between the two modes), you can select a new input but it will not become the active input until you click Take. Until you click Take, the queued input button is black.



Source - Color Scale

When you have added inputs to your video wall, you may find that you want to change the color scale on an individual window. (Color scale can be adjusted on each output as well - for instructions, see "Display - Adjusting Color Scale" on page 100.) To configure windows for color scale, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. There is also a Configure button to access further settings - click the Configure button.



3. On the Source Configuration page that appears, there are a variety of customization options.

Source Configuration

Name	s3i1	Preview Video	Broadcast
Equipment		Top input crop	0
Source Type	DVI (HDMI)	Left input crop	0
H Phase		Bottom input crop	0
Colour Scale	Auto	Right input crop	0
Brightness	0	Status	OK
Contrast	100	Fixed Name	Slot3.In1
Source Loss Color	Blue	Slot Card Type	DVI_U 2-in
HDCP Enabled	<input checked="" type="checkbox"/>	Resolution	640x480p60
HDCP	Off	EDID Filename	s3i1.edd

In the first column, a drop-down list labeled Colour Scale allows you to select your preferred setting. Choices include Auto (the default), Black, YUV, RGB, YUV_601 and YUV_709.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

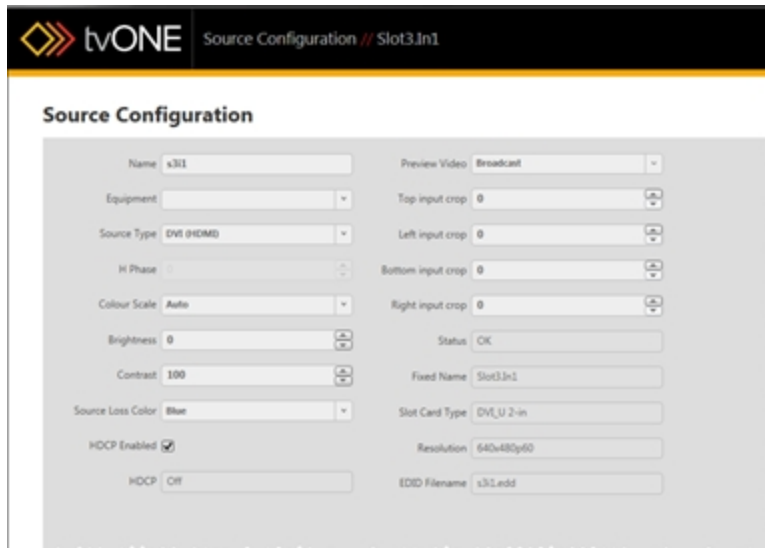
Source - Cropping inputs

When you are adding inputs to your video wall, you may find that a video source does not have clean edges. To help this, the inputs can be lightly cropped to remove the edge pixels and lines. To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. There is also a Configure button to access further settings - click the Configure button.



3. On the Source Configuration page that appears, there are a variety of customization options.



Source Configuration

Name: s31	Preview Video: Broadcast
Equipment:	Top input crop: 0
Source Type: DVI (HDMI)	Left input crop: 0
H Phase:	Bottom input crop: 0
Colour Scale: Auto	Right input crop: 0
Brightness: 0	Status: OK
Contrast: 100	Fixed Name: Slot3.In1
Source Loss Color: Blue	Slot Card Type: DVI_U 2-in
HDCP Enabled: <input checked="" type="checkbox"/>	Resolution: 640x480p60
HDCP: Off	EDID Filename: s31.edd

In the second column, you can set the input crop individually for each of the four sides. Type the number of pixels you would like cropped from each side, or use the arrow buttons to increase and decrease the number.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.



Note: The cropping adjustment is tied to the physical connection to the unit. Cropping the input source will be reflected in any window where this source is applied on the video wall.

Source - Defining Source Loss Window Color

If a video source is lost when feeding a window, a color will be displayed in the window position. The default color is blue but you may change the color. To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. There is also a Configure button to access further settings - click the Configure button.



3. On the Source Configuration page that appears, there are a variety of customization options.

tvONE Source Configuration // Slot3.In1

Source Configuration

Name: s3i1	Preview Video: Broadcast
Equipment: []	Top input crop: 0
Source Type: DVI (HDMI)	Left input crop: 0
H Phase: []	Bottom input crop: 0
Colour Scale: Auto	Right input crop: 0
Brightness: 0	Status: OK
Contrast: 100	Fixed Name: Slot3.In1
Source Loss Color: Blue	Slot Card Type: DVI_U 2-in
HDCP Enabled: <input checked="" type="checkbox"/>	Resolution: 640x480p60
HDCP: Off	EDID Filename: s3i1.edd

In the first column is a drop-down list labeled Source Loss Color. The default value is blue, but it can be adjusted to black, red, green, yellow, blue, magenta, cyan, or white.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Source - Enable HDCP

When you are adding inputs to your video wall, you may find that you need to disable HDCP (for general information on HDCP and reasons why you may need to disable it, see "HDCP" on page 73). To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, define a transition, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. There is also a Configure button to access further settings - click the Configure button.



3. On the Source Configuration page that appears, there are a variety of customization options.

tvONE Source Configuration // Slot3.In1

Source Configuration

Name: s3i1	Preview Video: Broadcast
Equipment: []	Top input crop: 0
Source Type: DVI (HDMI)	Left input crop: 0
Hi Phase: []	Bottom input crop: 0
Colour Scale: Auto	Right input crop: 0
Brightness: 0	Status: OK
Contrast: 100	Fixed Name: Slot3.In1
Source Loss Color: Blue	Slot Card Type: DVI_U 2-in
HDCP Enabled: <input checked="" type="checkbox"/>	Resolution: 640x480p60
HDCP: Off	EDID Filename: s3i1.edd

In the first column, you can check or uncheck the box labeled HDCP Enabled. Below that is a read-only field that tells you the current status of HDCP on that source.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Source - Flip Horizontally or Vertically

When you have added inputs to your video wall, you may find that you want to flip the source image on either or both axes. This works with both still images and video, and horizontal flipping produces a mirror image, while vertical flipping shows the image upside-down. To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality.



3. To flip the image horizontally, check the Flip Horizontally checkbox. To flip the image vertically, check the Flip Vertically checkbox.
4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Source - Ignore Bezel Compensation

When you have added windows and displays to your video wall, you may find that you want to ignore the bezel compensation.

If you have multiple displays adjacent to each other, you normally tell the CORIOgrapher what size the bezel is on each display and the CORIOgrapher then adjusts the output image so that the appropriate number of pixels are not shown, in order to maintain the effect of one large display. If you wish to ignore the bezel, the system puts the next row of pixels on the next display, even though it isn't spatially adjacent, which avoids losing any rows but creates a jagged effect, which may result in a loss of visual continuity in extreme cases.

To configure the system to ignore the bezel, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality.



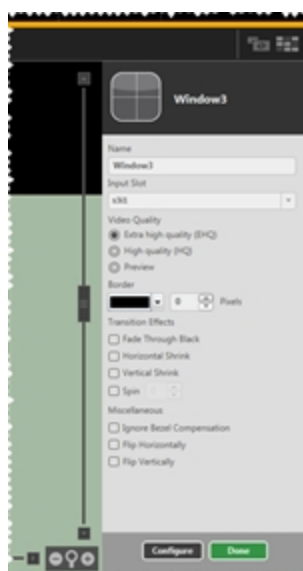
3. To Ignore Bezel Compensation, place a check mark in the appropriate box.
4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Source - Renaming Windows or Inputs

When you have added inputs to your video wall, you may find that you want to give each source window a name that is meaningful to you. Alternatively, you may want to name the inputs that are being used for windows.

Renaming Windows

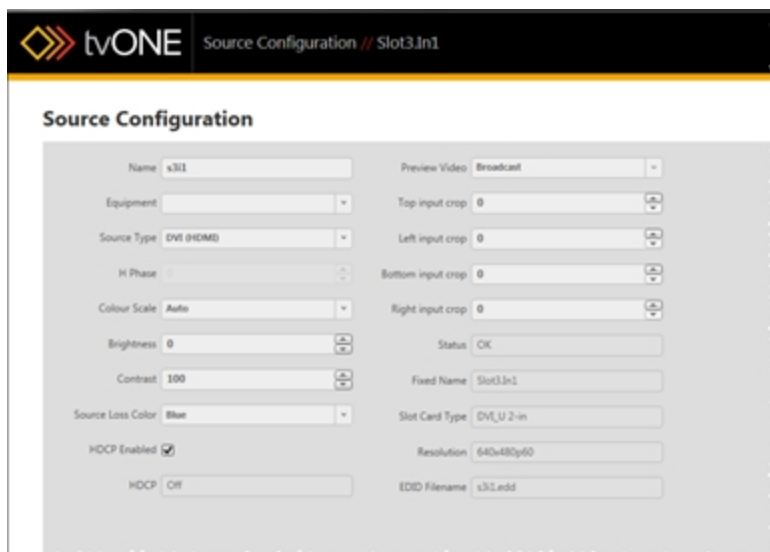
1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality.



3. To rename the window, click into the Name field and type a new name. The name can be up to 19 alphanumeric characters (no spaces).
4. Press Return or Enter to commit the change.
5. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Renaming Sources

1. On the Source Configuration page that appears when you click Configure in the Displays & Sources pane, there are a variety of customization options.



The screenshot displays the 'Source Configuration' window for 'Slot3.In1'. The interface is organized into two columns of settings. The left column includes fields for Name (s3i1), Equipment, Source Type (DVI (HDMI)), H Phase, Colour Scale (Auto), Brightness (0), Contrast (100), Source Loss Color (Blue), HDCP Enabled (checked), and HDCP (Off). The right column includes Preview Video (Broadcast), Top input crop (0), Left input crop (0), Bottom input crop (0), Right input crop (0), Status (OK), Fixed Name (Slot3.In1), Slot Card Type (DVI_U 2-in), Resolution (640x480p60), and EDID Filename (s3i1.edd).

In the first column, click into the Name field and type a new name. The name can be up to 19 alphanumeric characters (no spaces). This changes the name of the slot source, as opposed to the window.

2. Press Return or Enter to commit the change.
3. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Windows vs Sources

When a source is added to the video wall (which may also be referred to as the Canvas), it becomes a Window. Initially, the settings of the source are used to create the Window.

Windows are not sources, but windows contain sources along with other data. Windows can change sources. For example, using Transitions, the source can change from Slot1.input1 to Slot1.input2. However, the dimensions and placement of the window may not change.

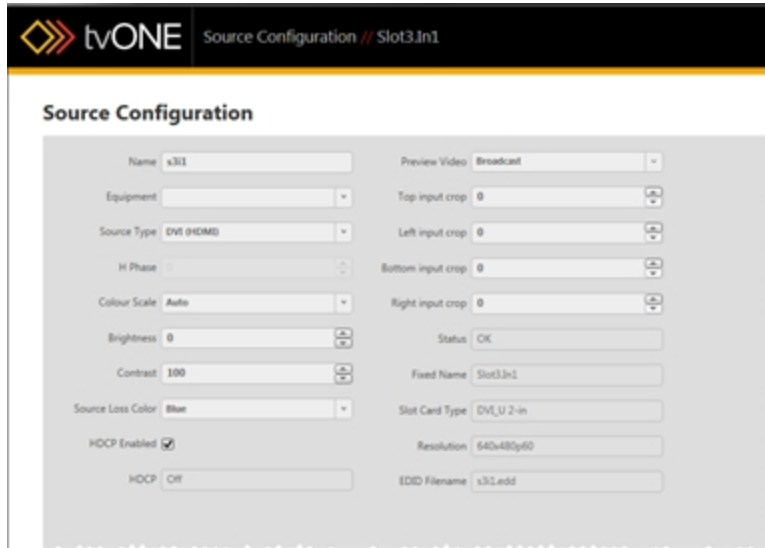
Source - Set Preview Video

When you have added windows to your video wall, you may find that you want to configure which of several sample videos will show when you use the Preview feature in the video wall. To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. There is also a Configure button to access further settings - click the Configure button.



3. On the Source Configuration page that appears, there are a variety of customization options.



Source Configuration

Name: s3i1	Preview Video: Broadcast
Equipment: [Dropdown]	Top input crop: 0
Source Type: DVI (HDMI)	Left input crop: 0
H Phase: [Dropdown]	Bottom input crop: 0
Colour Scale: Auto	Right input crop: 0
Brightness: 0	Status: OK
Contrast: 100	Fixed Name: Slot3.In1
Source Loss Color: Blue	Slot Card Type: DVI_U 2-in
HDCP Enabled: <input checked="" type="checkbox"/>	Resolution: 640x480p60
HDCP: Off	EDID Filename: s3i1.edd

In the second column, the option Preview Video gives a drop-down list of options - Broadcast, House of Worship, Live Event, Medical, or Sports. These don't have to be your own specific uses, but the video shown when you use "Video Wall - Preview Mode" on page 79 will be topical to the item selected here.

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Broadcast



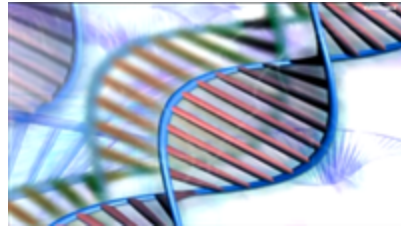
House of Worship



Live Event



Medical



Sports



Source - Specify Equipment

When you are adding Sources and Displays to your video wall, you may find that you have got an input in your video wall that you want to associate with a piece of equipment you have already defined from that PC (see "Creating Source Equipment Profiles" on page 58). To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays& Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. There is also a Configure button to access further settings - click the Configure button.



3. On the Source Configuration page that appears, there are a variety of customization options.

tvONE Source Configuration // Slot3.In1

Source Configuration

Name: s3i1	Preview Video: Broadcast
Equipment: [Drop-down]	Top input crop: 0
Source Type: DVI (HDMI)	Left input crop: 0
H Phase: [Radio]	Bottom input crop: 0
Colour Scale: Auto	Right input crop: 0
Brightness: 0	Status: OK
Contrast: 100	Fixed Name: Slot3.In1
Source Loss Color: Blue	Slot Card Type: DVI_U 2-in
HDCP Enabled: <input checked="" type="checkbox"/>	Resolution: 640x480p60
HDCP: Off	EDID Filename: s3i1.edd

In the first column, the second item is a drop-down list labeled Equipment. If you click the drop-down menu, it shows all available equipment that you have defined, and the option Off if you don't want anything associated with this input. If you had previously configured a certain input from this PC, you should be able to see it and select it in this drop-down list. (If you can't see the equipment here, you may need to set it up from this machine - go to "Creating Source Equipment Profiles" on page 58 for instructions.)

4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

Source - Verify Configuration Details

When you have added windows to your video wall, you may find that you want to check on some read-only data such as the status of a window, the fixed name, the slot card type, the detected resolution, or the EDID filename. These fields cannot be modified, but the information may be of use to you. To find this information, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. There is also a Configure button to access further settings - click the Configure button.



3. On the Source Configuration page that appears, there are a variety of customization options.

At the end of the second column, grayed out to indicate that they are not editable, are several pieces of information you may find useful.

- Status shows the availability of the input source. OK indicates a valid input source; INVALID indicates no source or an invalid source.
 - Fixed Name shows the inbuilt name for the source - you may rename the source but this indicates which slot the window is attached to and which input on that card.
 - Slot Card Type tells you what type of card is in the slot, by defining the connector and how many are on the card.
 - Resolution indicates the native resolution the system has negotiated with the source.
 - EDID Filename gives the name of the EDID file associated with that given input connector.
4. Click the Done button to exit the Source Configuration window and return to the Video Wall.

Source - Adjust Video Quality

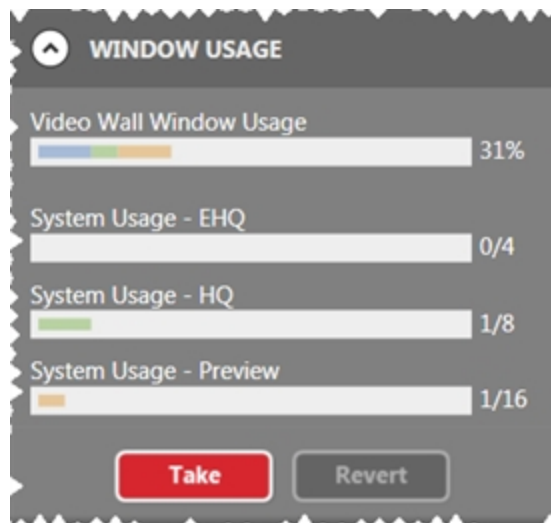
When you have added inputs to your video wall, you may find that you want to adjust the video quality of a window, particularly as the number of Extra High Quality windows is limited. To do this, follow these steps:

1. Make sure that you are connected to a CORIOmaster as you edit the configuration. The video quality cannot be set unless the system knows what resources it has available, so this is a feature that cannot be configured offline.
2. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
3. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality.



4. To change the image quality, choose the appropriate radio button from the three available: EHQ (Extra High Quality), HQ (High Quality), and Preview. Be aware that if you leave the default window name, the window number may change, and the order of windows will shift, depending on the video quality selected for each window.
5. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

6. Check the Window Usage meter below the Displays & Sources to make sure you are comfortable with the way you are budgeting your video quality usage.



Note: In the video wall, you can tell the quality of a window by its shading. An extra high quality window has a bluish tinge; a high quality window has a greenish tinge, and a preview window has a yellowish tinge.



Note: If you change the quality of a window, its window number label will change. Be sure to decide on the quality early in the process, before you name windows.

Source - Transition - Fade Through Black

When you have added windows to your video wall, you may find that you want to use a transition in order to present the window dynamically. One option is to have a source within a window appear by fading from black. To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. You can also configure transitions.



3. To have this input appear after fading through black, check the box next to Fade Through Black.
4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

After configuring this Transition, when you change from another Preset to this one, the source within the window specified will fade in from black. This effect refers only to the source signal; any border will not be included in the fade.

Once one or more Transitions are specified for as many windows as you wish to configure, save the video wall as a Preset. You can then move from one Preset to another, and the transitions will make the process a dynamic one.

See "Basic Transition Tutorial" on page 209 for a walkthrough.

Source - Transition - Horizontal Shrink

When you have added windows to your video wall, you may find that you want to use a transition in order to present the window dynamically. One option is to have a source within a window narrow horizontally until it is just a single vertical line, then expand to normal, displaying the new source (if the source was changed). To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. You can also configure transitions.



3. To have this source appear after shrinking and re-expanding horizontally, check the box next to Horizontal Shrink.
4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

After configuring this Transition, when you change from another Preset to this one, the window specified will narrow to a central vertical line, then return to normal width with the new window content.

Once one or more Transitions are specified for as many windows as you wish to configure, save the canvas as a Preset. You can then move from one Preset to another, and the transitions will make the process a dynamic one.

See "Basic Transition Tutorial" on page 209 for a walkthrough.

Source - Transition - Vertical Shrink

When you have added windows to your video wall, you may find that you want to use a transition in order to present the source within the window dynamically. One option is to have a window shorten vertically until it is just a single horizontal line, then expand to normal, displaying the new source (if the source was changed). To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. You can also configure transitions.



3. To have this input appear after shrinking and re-expanding vertically, check the box next to Vertical Shrink.
4. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

After configuring this Transition, when you change from another Preset to this one, the window specified will narrow to a central horizontal line, then return to normal height with the new window content.

Once one or more Transitions are specified for as many windows as you wish to configure, save the canvas as a Preset. You can then move from one Preset to another, and the transitions will make the process a dynamic one.

See "Basic Transition Tutorial" on page 209 for a walkthrough.

Source - Transition - Spin

When you have added windows to your video wall, you may find that you want to use a transition in order to present the source within the window dynamically. One option is to have a window spin clockwise or counter-clockwise a certain number of times, then return to the pre-configured alignment, displaying the new source (if the source was changed). To do this, follow these steps:

1. In the video wall, double-click the window in the video wall or double-click the window name in the Displays & Sources pane.
2. On the right-hand pane, you will see some basic information about the window. You can rename the window, change input slot, add a border, ignore the system's compensation for a display bezel, or flip the image horizontally and/or vertically. If you are connected to a CORIOmaster, you can also set video quality. You can also configure transitions.



3. To have this input spin around its center point clockwise or counter-clockwise, check the box next to Spin.
4. Once the Spin box is checked, the rotation counter becomes active. The window can spin up to seven times in either direction (positive spin is clockwise; negative spin is counter-clockwise). At the end of the spin, the window will return to the alignment specified in the video wall.
Spins must all be entered as whole numbers. The defined number of spins occur with the original source, then the source changes, and the defined number of spins occur again with the new source. For example, if you choose two spins, the image will rotate 720 degrees, change input if relevant, and then rotate 720 degrees again, for a total of four spins.

5. Click the Done button to keep your data, and be sure to click Save to keep your configuration up to date.

After configuring this Transition, when you change from another Preset to this one, the window specified will rotate about its central point in the direction specified and for the number of rotations specified, then return to original alignment with the new window content.

Once one or more Transitions are specified for as many windows as you wish to configure, save the canvas as a Preset. You can then move from one Preset to another, and the transitions will make the process a dynamic one.

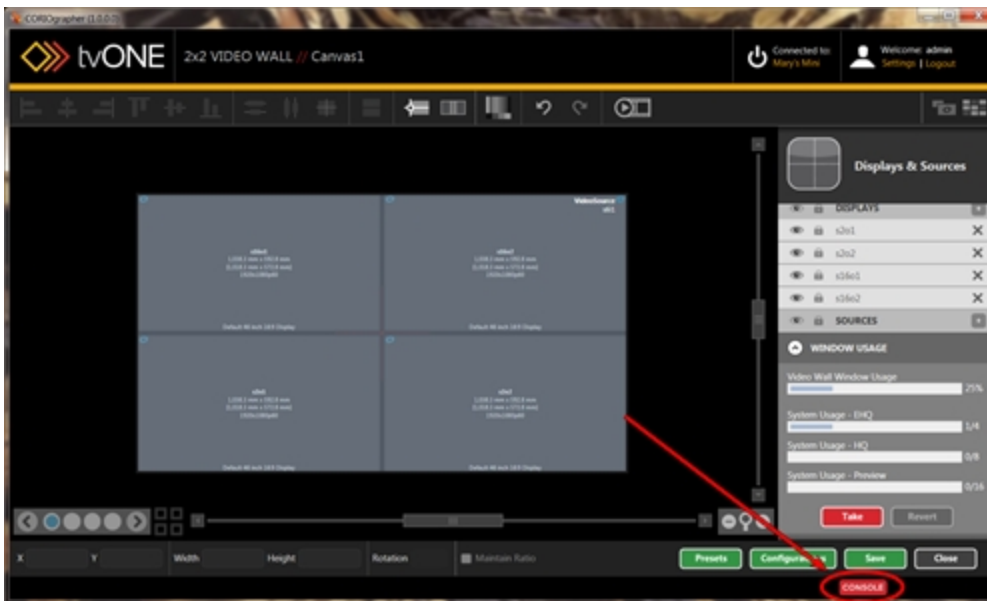
See "Basic Transition Tutorial" on page 209 for a walkthrough.

Settings

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Console

Under normal use, you do not need to worry about the Console button at the bottom of the CORIOgrapher window. If there has been an error, the console button will turn red.



However, if a communication fault should occur, you can refer to the Console data to investigate what may be causing a problem.

The Console screen lists all the commands sent to the unit and information returned. Each line of commands sent to the CORIOmaster is prefixed by a greater-than sign ">". Each line of responses received from the CORIOmaster is prefixed by a less-than sign "<". After the direction indicator, a date/time stamp is used at the start of each line to help establish when commands are sent. The most recent command is shown at the bottom.

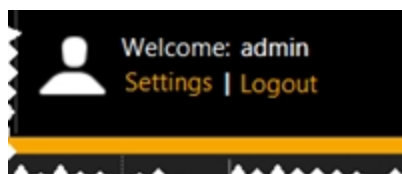
You can also send individual commands from the command line at the bottom. The data is stored - by default, the maximum 10,000 lines are saved, but you can set this to a smaller number in the General tab of Settings (see "General - Log Size" on page 170 for more information) if you wish to do so. You can export the data into a .txt file by clicking the Export to File button and choosing a location. This may be helpful in the event of an issue where a log report can be saved immediately after the symptom occurs and the text file sent to tvONE for review by a support agent. A complete log from startup can also be used to duplicate actions on other CORIOmaster units.

Connections

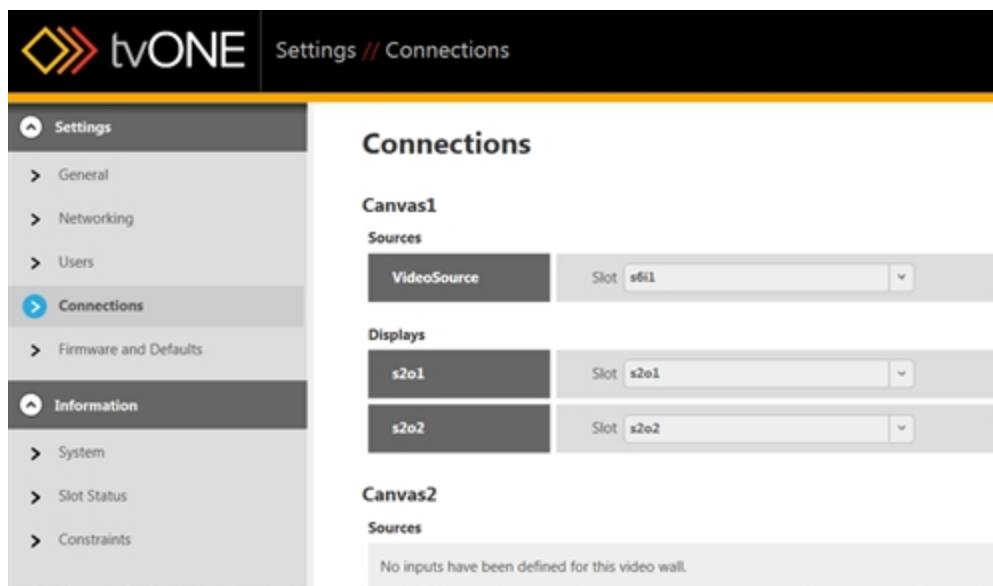
From the Settings window, you can make various changes to the CORIOmaster, including defining the source and display inputs and outputs.

The Connections pane of Settings gives an overview of all configured sources and displays and indicates which input or output they are assigned to.

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the Connections option under Settings on the left.



In the right-hand pane, you see each video wall that you have defined. Under each video wall, your Sources and Displays are listed. (Any given window or display is only available in one video wall.) To the right of each source or display is the slot and connector number for the associated input or output.

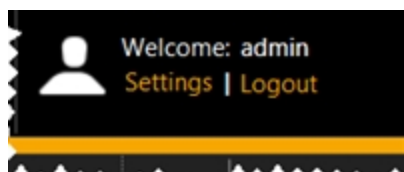
3. To change which input or output is associated with a given source or display, click on the drop-down menu and choose the appropriate slot. The drop-down list will automatically populate with the relevant options. For additional information on how the slots are labelled, see "Input and Output Naming Convention" on page 23.

4. Click the Save button at the bottom of the list of Canvases (Video walls) to save this information.

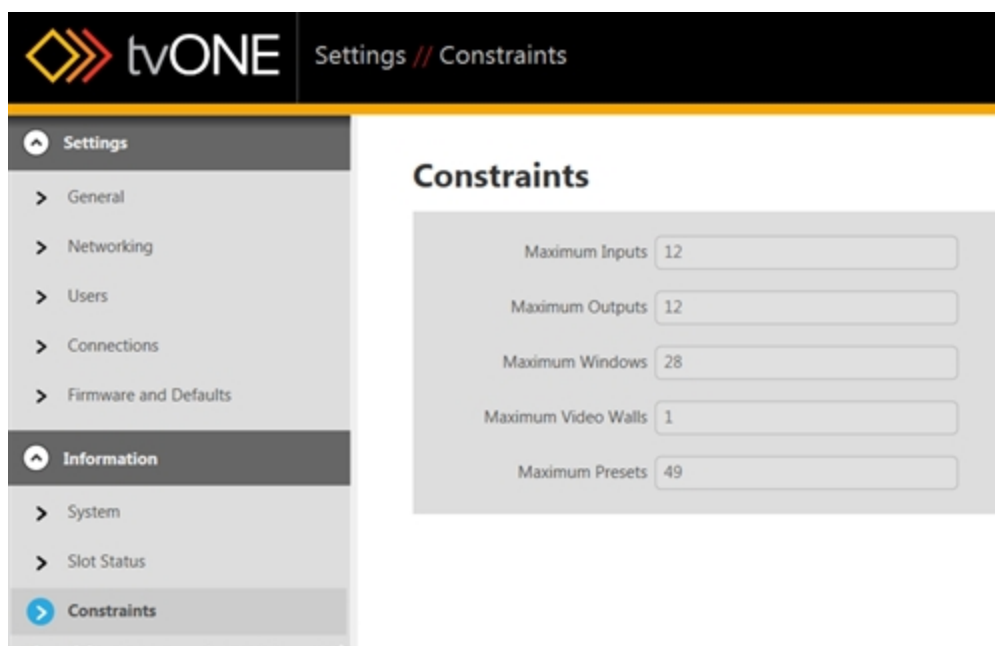
Constraints

From the Settings window, you can make various changes to the CORIOmaster, and you can gather some system information.

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the Constraints option under Information on the left. In the right-hand pane, you see several lines of information about the system's capabilities.



- On the top line is the maximum number of inputs available on the CORIOmaster you are currently connected to. In this case, "Inputs" means cards, not connectors - keep in mind that most cards have two connectors and some have four, so the maximum actual number of input signals is dependent on what combination of cards you install.
- The second line lists the maximum number of outputs available on the CORIOmaster you are currently connected to. (Note that the sum of maximum inputs and maximum outputs is more than the number of slots on the machine - if you run the

maximum number of either inputs or outputs, the number of the other is limited by available slots.)

- The third line lists the maximum number of windows available on the CORIOmaster you are currently connected to. This number is constrained by processing power and only lists the maximum number of low-quality windows - higher quality windows will limit the total number available.
- The fourth line lists the maximum number of video walls that can be created in the current configuration on the CORIOmaster you are currently connected to.
- The fifth line lists the maximum number of presets that are available in the current configuration on the CORIOmaster you are currently connected to.

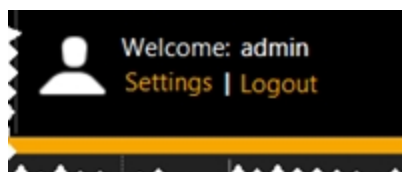
Each of these fields is read-only.

Firmware and Defaults - Current Firmware

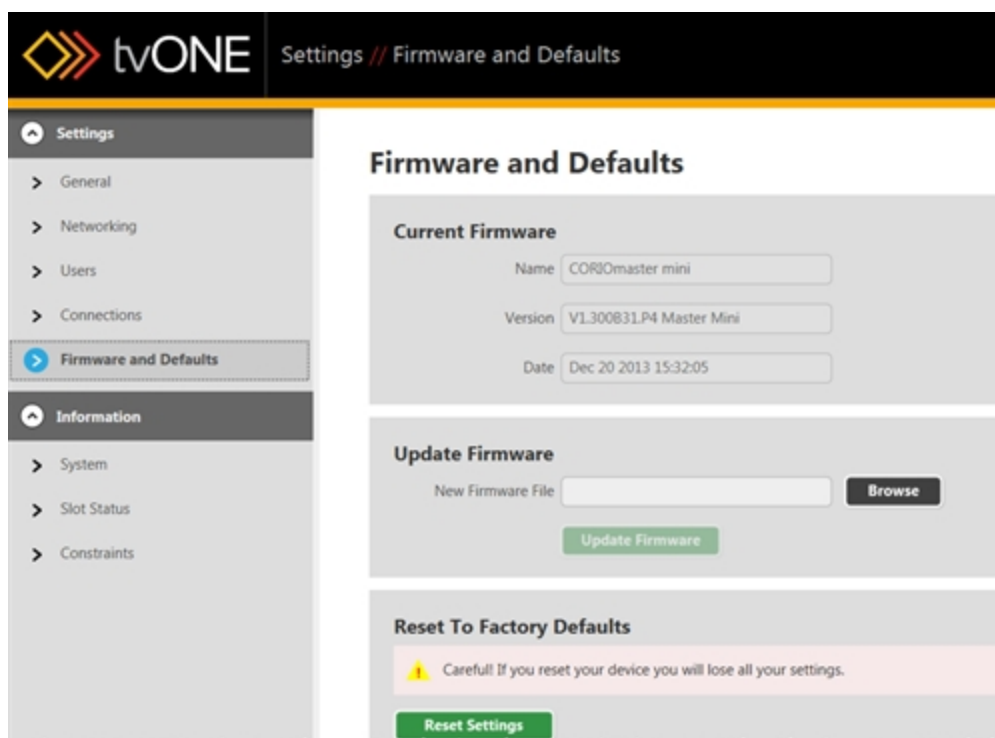
From the Settings window, you can make various changes to the CORIOmaster, including checking the firmware version, updating the firmware, and resetting the unit to factory default settings.

To check the status of the current firmware:

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the Firmware and Defaults option under Settings on the left.



In the right-hand pane, the top section shows information about your current firmware - the name, version details, and the build date of the software.

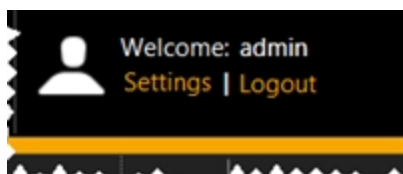
This data is read-only and cannot be modified.

Firmware and Defaults - Reset to Factory Defaults

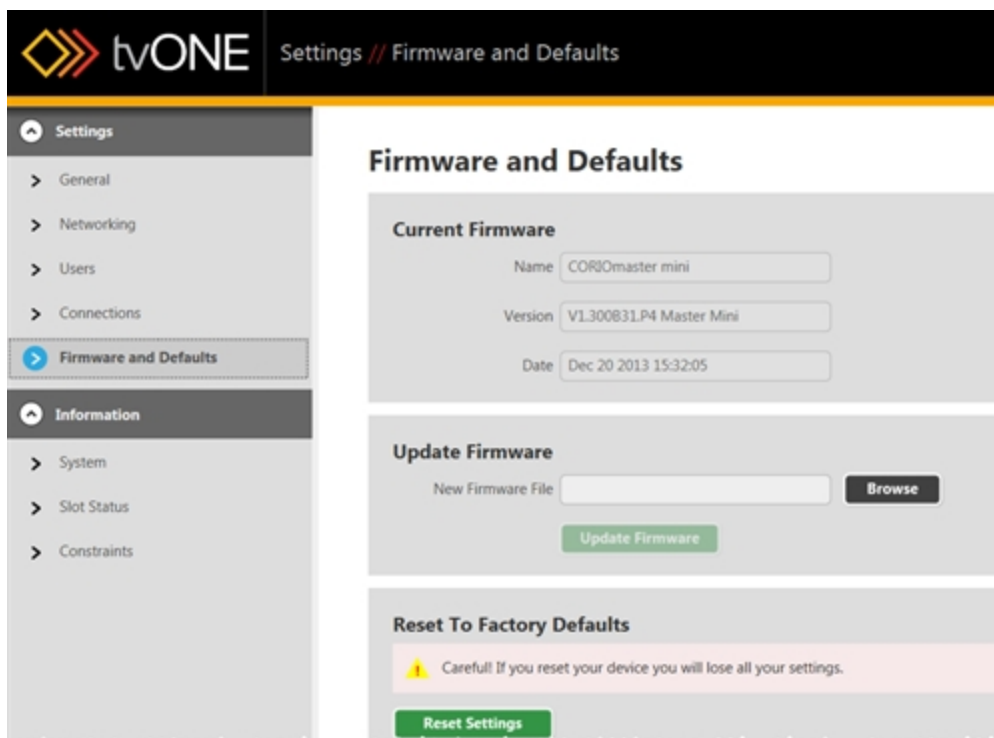
From the Settings window, you can make various changes to the CORIOmaster, including checking the firmware version, updating the firmware, and resetting the unit to factory default settings.

To restore the CORIOmaster to original default settings:

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the Firmware and Defaults option under Settings on the left.



In the right-hand pane, the bottom section (Reset to Factory Defaults) allows you to reset the device to its original settings. If you do this, all configuration data you have made and saved will be lost. Be sure to back up any configurations you wish to retain onto your

local PC as the CORIOmaster will be completely erased and returned to out-of-box settings. If you are comfortable proceeding, click the Reset Settings button.

3. A pop-up window will ask you to confirm your choice. If you click yes, the settings on the CORIOmaster will be wiped and returned to default and the CORIOgrapher software will restart.



Caution: If you reset your CORIOmaster to factory defaults, you will lose any configuration information you have created. If you are not sure you wish to lose this, be sure you have all data backed up.

Firmware and Defaults - Update Firmware

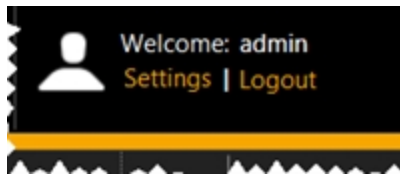
From the Settings window, you can make various changes to the CORIOmaster, including checking the firmware version, updating the firmware, and resetting the unit to factory default settings.



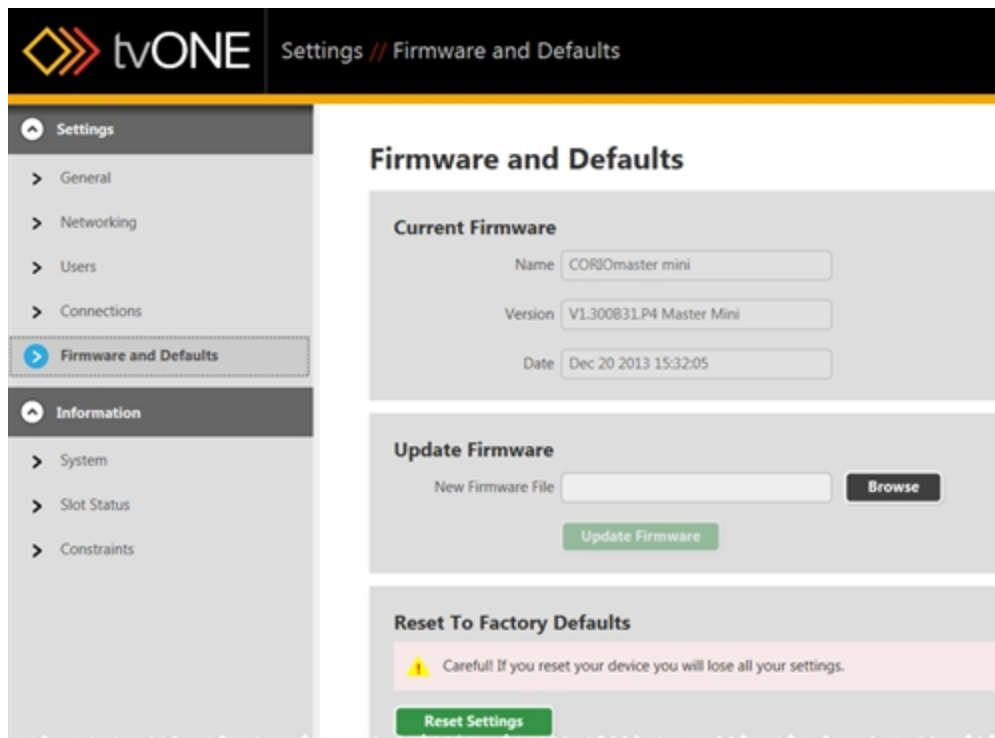
Caution: Keep in mind that when you update the firmware, the current running configuration on the CORIOmaster will be deleted. All previous saved configurations should still be available, but for best practice, be sure to save the configurations locally to your PC as a backup.

To update the firmware:

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the Firmware and Defaults option under Settings on the left.



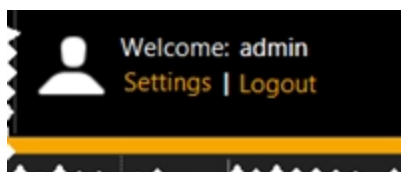
In the right-hand pane, the top section shows the current firmware version. The second section is labeled Update Firmware. Click the Browse button to navigate to the new .zip firmware file stored locally or type the path into the text box.

3. Select the appropriate .zip file and the path will populate in the New Firmware File text box.
4. Click the Update Firmware button to begin the firmware update. The CORIOmaster transfers the .DAT file to its internal memory. Once the file is transferred, you will be logged out of the CORIOmaster and returned to the Getting Started screen. If you are in the same subnet and usually see the unit in Device Discovery, it should appear there again, with a square-bracketed prefix to notify you what stage of the upgrade is in progress. Initially, it says "[Unpacking Update]", then it moves to "[Applying Update]". After the update is applied, the unit restarts, and then appears in Device Discovery as available for connection. You are not able to log in to the device until it has completed the update.
5. After the firmware update and subsequent unit restart, be sure to check and, if necessary, copy your backed-up configurations back to the CORIOmaster. For instructions, see "Loading an Existing Configuration" on page 29.

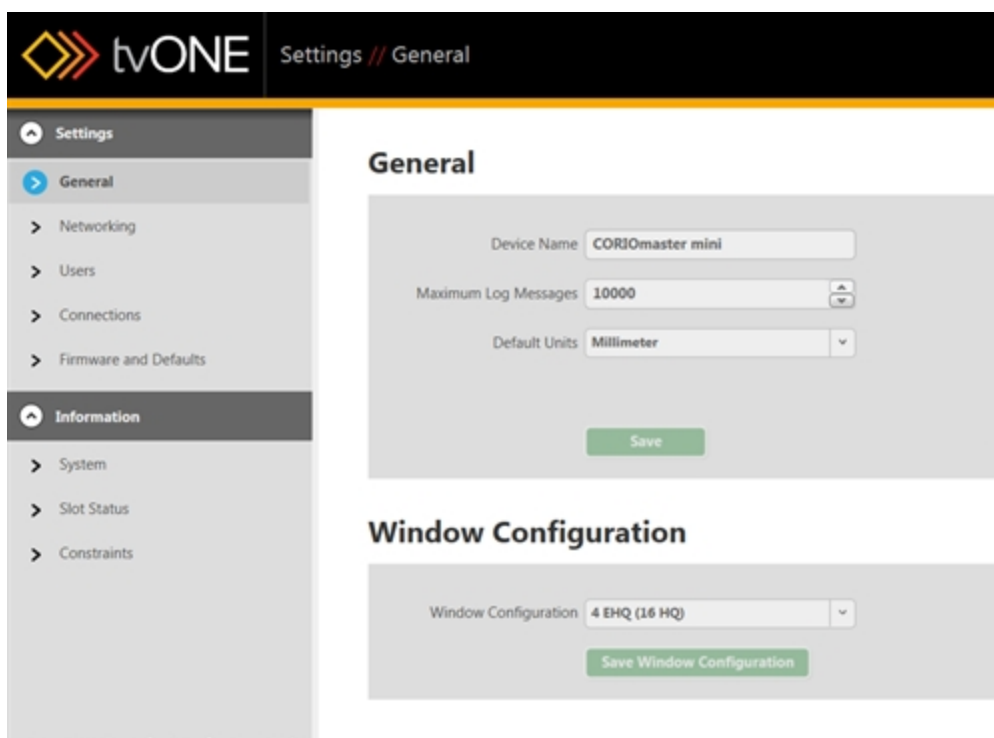
General - Default Units

From the Settings window, you can make various changes to the CORIOmaster, including changing the default units.

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the General option under Settings on the left.



In the right-hand pane, you see various options that allow you to rename the device, change the size of the log, set default units and set window configuration.

3. In the third line, Default Units, choose your preferred units (inches or millimeters) from the drop-down menu. Unless you choose millimeters, the default value is inches. The units you choose determine how the system measures displays, bezels and video wall size.

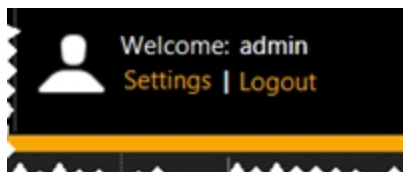
Fractions of an inch must be converted to decimal before entering into the system.

4. Click the Save button to save this information.

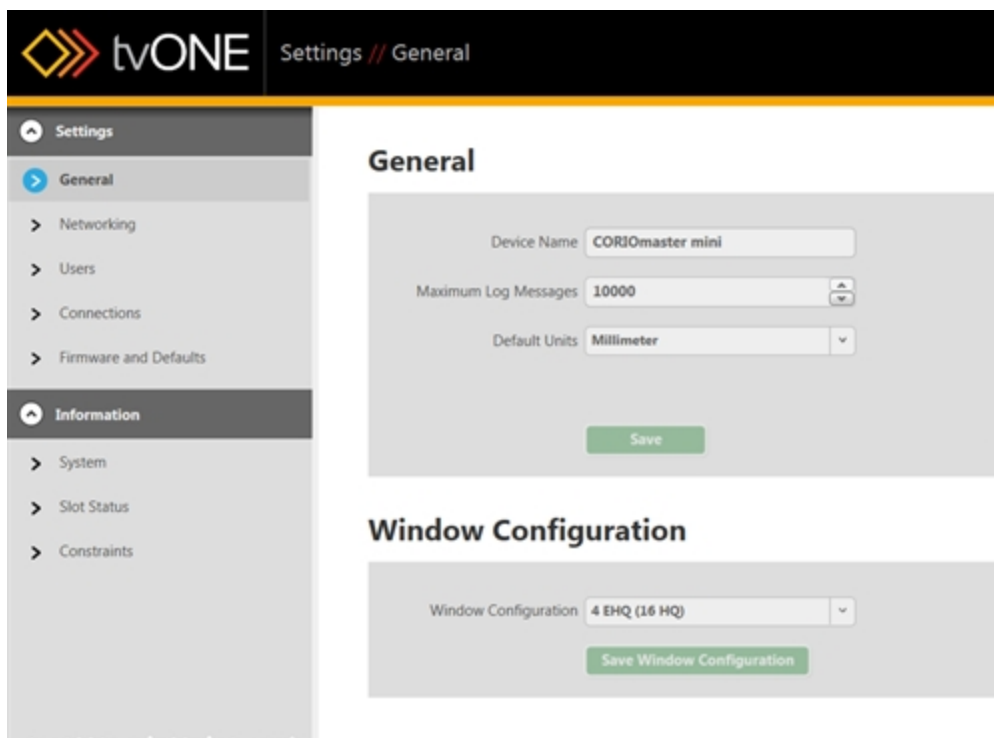
General - Device Name

From the Settings window, you can make various changes to the CORIOmaster, including renaming the device. This is the name that is displayed in Device Discovery on the Getting Started page.

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the General option under Settings on the left.



In the right-hand pane, you will see various options that allow you to rename the device, change the size of the log, set default units and set window configuration.

3. In the top line, Device Name, type your preferred name into the text box. The device name can be a maximum of 32 characters including letters, numbers, punctuation and

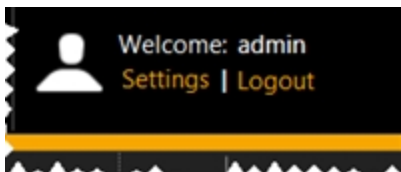
spaces.

4. Click the Save button to save this information.

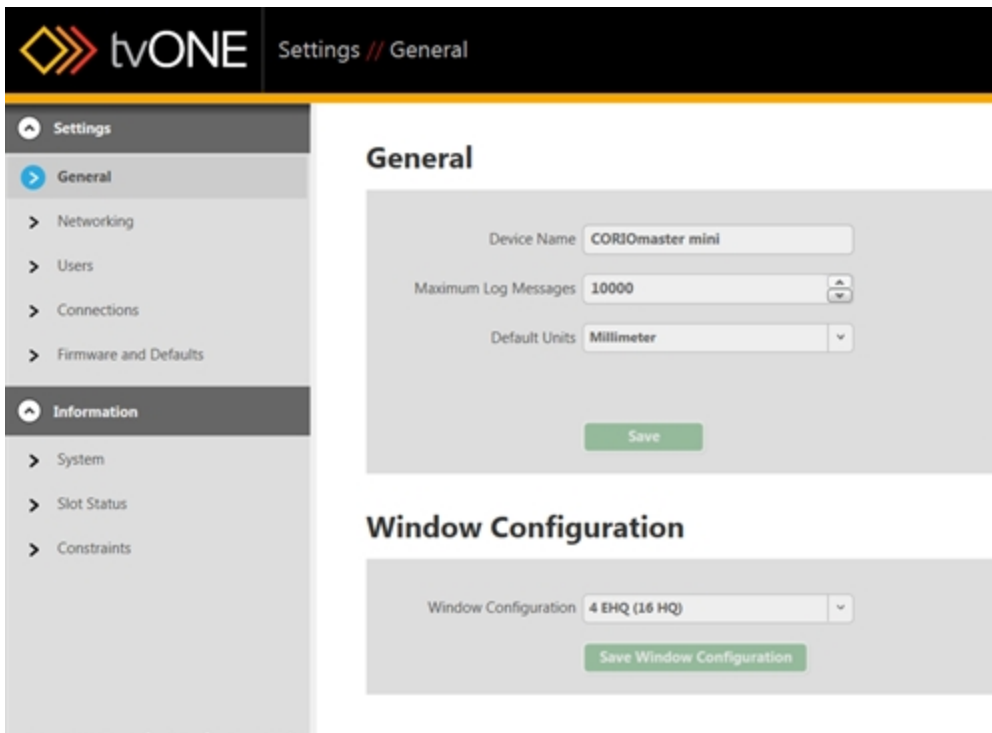
General - Log Size

From the Settings window, you can make various changes to the CORIOmaster, including adjusting the number of cached log messages from the "Console" on page 156. By default, no log is actively saved, but if you choose to export a log from the Console, you can set the size of the file that is cached awaiting export. Once the maximum length log is cached, new lines are still added, and the oldest lines are purged.

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the General option under Settings on the left.



In the right-hand pane, you will see various options that allow you to rename the device, change the size of the log, set default units and set window configuration.

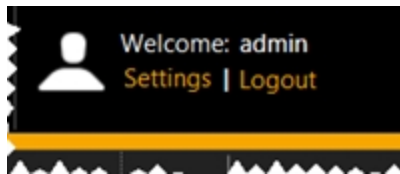
3. In the second line, Maximum Log Messages, type your preferred log size into the text box or use the arrows to increase or decrease the number in the box. The maximum log size is 10,000 message lines.
4. Click the Save button to save this information.
5. If you wish to export a log, click the Console button to open the console window and select the Export to File button.

General - Window Configuration

Each CORIOmaster or CORIOmaster mini has certain physical limitations, based on configuration of unit, regarding how much processing power is available. As you might expect, an Extra High Quality window requires far more processing power than a Preview Quality window.

As such, there are some choices you can make regarding how you want the resources divided. You can choose to have fewer windows but each of them being higher quality, as you might want if you're doing one big picture on a video wall. On the other hand, you could have many High Quality windows, such as if you're doing a video wall with a different video on each screen. We provide you with three options, representing both ends of this scale and the middle, and let you choose how to allocate your resources. To do so:

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the General option under Settings on the left.

The screenshot shows the tvONE web interface. The top navigation bar includes the tvONE logo and the text 'Settings // General'. On the left, a sidebar menu is visible with 'Settings' expanded to show 'General' (selected), 'Networking', 'Users', 'Connections', and 'Firmware and Defaults'. Below this, 'Information' is expanded to show 'System', 'Slot Status', and 'Constraints'. The main content area is titled 'General' and contains three input fields: 'Device Name' (CORIOMaster mini), 'Maximum Log Messages' (10000), and 'Default Units' (Millimeter). A green 'Save' button is located below these fields. Below the 'General' section is the 'Window Configuration' section, which has a 'Window Configuration' dropdown menu set to '4 EHQ (16 HQ)' and a green 'Save Window Configuration' button.

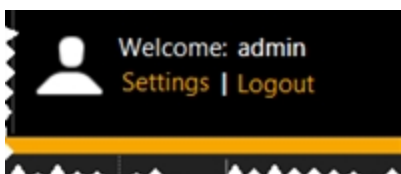
In the right-hand pane, you will see various options that allow you to rename the device, change the size of the log, set default units and set window configuration.

3. In the bottom line, Window Configuration, choose your preferred configuration from the drop-down menu. The software will identify what your CORIOMaster is capable of and present you with three relevant options that allow you to maximize Extra High Quality windows, maximize number of High Quality windows, or an option in between.
4. Click the Save Window Configuration button to save this information. Be aware that the CORIOMaster will restart after you save these settings.

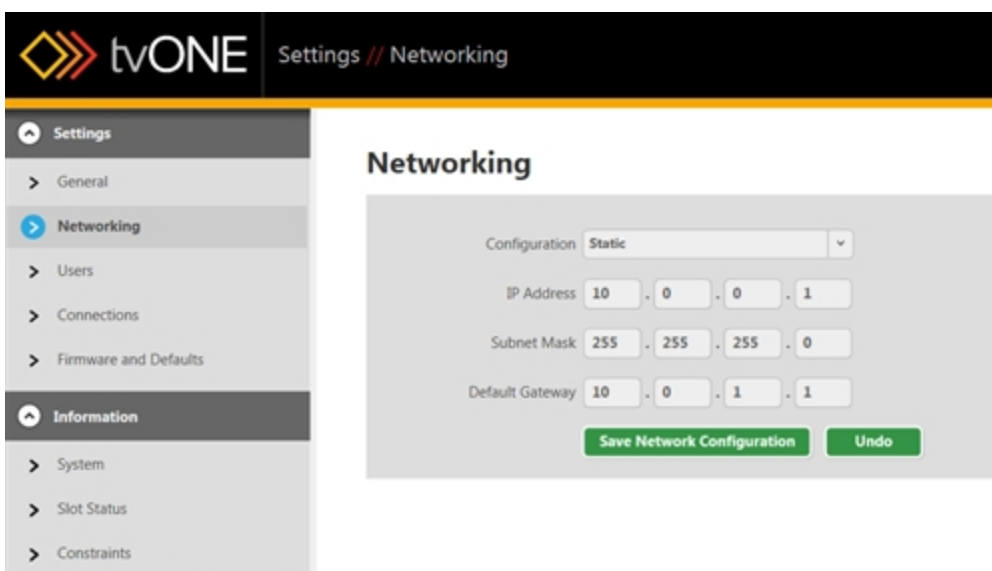
Networking

From the Settings window, you can make various changes to the CORIOmaster, including adjusting the network settings.

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the Networking option under Settings on the left.



In the right-hand pane, you see various options that allow you to choose a static or dynamic IP address as well as configure subnet mask and gateway details.

3. On the top line, Configuration, choose from the drop-down whether you will be using a Static IP address or if the address will be configured by DHCP. (If you choose DHCP, neither IP Address nor Subnet Mask will be configurable.)
4. If you chose Static:
 1. In the second field, enter the appropriate IP Address - one text box per octet.
 2. In the third field, enter the appropriate Subnet Mask - one text box per octet.
 3. In the fourth field, enter the appropriate Default Gateway - one text box per octet.
5. Click the Save Network Configuration button to save this information.

6. Due to the constraints of networking settings, in order to make the new settings active, the CORIOmaster will need to restart.

For more detail on configuring this setting, see "Configure Connection via Ethernet" on page 16 and "Configure Connection via Serial" on page 21. You can also use the tvONE CORIOdiscover application.

Users

The CORIOgrapher has multiple user roles in order to streamline privileges.

Administrators can do everything including resetting passwords.

Power Users can use the dashboard, switch between presets, manage video source associations, and use the video wall editor.

Basic Users can use the dashboard, switch between presets, and manage video source associations.

Guest users have very limited access and no password.

When a user creates a password, the password is stored securely on the device, and is not displayed during transmission over the API. Only the administrator can reset another user's password. See "Changing Passwords" on the facing page for details.



Caution: Be sure, when you load a different saved active configuration on the CORIOmaster, that you know the administrator login information. If the administrator login details are changed from the default and you are not aware of this, you may find yourself unable to access the unit.

For more details, you may wish to see "Administrator Setup Information" on page 14, "Logout" on page 22, "Changing Passwords" on the facing page, and "Timeout" on page 183

Changing Passwords

There are three types of account (Administrator, Power User, and Basic User). Only Administrators can change passwords for other users. Any user can set or change their own password, but only Administrators have the ability to make changes to other users' accounts.

When a user creates a password, the password is stored securely on the device, and is not displayed over the API. Only the administrator can reset a basic or power user's password.

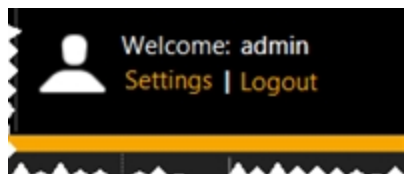
Passwords must be between 6 and 32 characters and any combination of alphabetic, numeric and punctuation characters.

Administrator Tools

The first time an administrator logs in to the CORIOmaster, the unit will notify you that this is the first boot for the device. It will remind you to change the default password. (This alert will continue until you have saved settings to the device or restored a saved configuration to the CORIOmaster.)

To change other users' passwords, follow these steps:

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the Users option under Settings on the left.

The screenshot shows the tvONE web interface for user management. On the left, a navigation menu is visible with 'Settings' expanded and 'Users' selected. The main content area is titled 'Users' and contains two user configuration panels. The first panel, labeled 'Administrator', shows the username 'admin', role 'Administrator', and fields for 'New Password' and 'Confirm Password'. There is an 'Update User' button and an unchecked 'Enable timeout' checkbox. The second panel, labeled 'User 1', shows the username 'user1', role 'PowerUser', and a 'New Password' field. It includes a 'Set Timeout' button and a checked 'Enable timeout' checkbox with a dropdown menu set to '5' minutes.

In the right-hand pane, you will see various options that allow you to change username, password and timeout details for individual users (see "Timeout" on page 183).

3. Find the user whose password you wish to change. In the fields below that user's username, type the new password in the New Password field, retype the same text in the Confirm Password field, and click the Update User button.



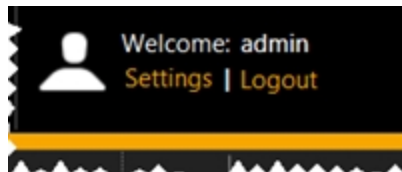
Caution: Be sure, when you load a different saved active configuration on the CORIOmaster, that you know the administrator login information. If the administrator login details are changed from the default and you are not aware of this, you may find yourself unable to access the unit.

For more details, you may wish to see "Administrator Setup Information" on page 14, "Logout" on page 22, "Users" on page 176, and "Timeout" on page 183

Slot Status

From the Settings window, you can make various changes to the CORIOmaster, and you can gather some system information.

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the Slot Status option under Information on the left.

Slot	Name	Status	Card Type	HDMI	HDCP	Measured Resolution	Type
Slot2.In1	s2i1	INVALID	SDI_3G 2-in	Not_Found			SDI
Slot2.In2	s2i2	INVALID	SDI_3G 2-in	Not_Found			SDI
Slot4.In1	s4i1	INVALID	DVI_U 2-in	Not_Found	Off		DVI (HDMI)
Slot4.In2	s4i2	INVALID	DVI_U 2-in	Not_Found	Off		DVI (HDMI)
Slot6.In1	s6i1	INVALID	DVI_U 2-in	Not_Found	Off		DVI (HDMI)
Slot6.In2	s6i2	INVALID	DVI_U 2-in	Not_Found	Off		DVI (HDMI)

Slot	Name	Card Type	HDMI	HDCP Active	Lock Mode	Lock Status	Lock Reference
Slot3.Out1	TopLeftLCD	DVI_U 2-out	Not_Found	Off	FrameLock	Unlocked	s2i1
Slot3.Out2	s3o2	DVI_U 2-out	Not_Found	Off	Off		NULL

In the right-hand pane, you see a table of information on the Input slots and another table of information on the Output slots:

- The Input Slot table lists the identified input cards and slots on your CORIOmaster and gives some details about each slot:

Title	Value	Information
Slot	Read-only	As identified by the system - see "Input and Output Naming Convention" on page 23 for details

Name	Editable	Customizable input name - this is the source being named, not the window. The name can be up to 19 alphanumeric characters with no spaces. The window name is modifiable from the Video Wall (see "Source - Renaming Windows or Inputs" on page 139).
Status	Read-only	Input status - this will return INVALID if there is no source or an invalid source. If it returns OK, you have a valid input source attached to the port.
Card Type	Read-only	This field returns the card type as detected by the system.
HDMI	Read-only	Returns Found or Not_Found, depending on the detected HDMI status.
HDCP	Read-only	Returns Off if HDCP is not enabled, and On if HDCP is enabled. This option is not available for SDI input cards.
Measured Resolution	Read-only	Returns the resolution of the input as detected by the system.
Type	Drop-down	You can choose the input type from a drop-down menu offering a variety of inputs such as DVI (HDMI), RGBHV, RGSB, CV (Composite), and others.

- The Output Slot table lists the identified output cards and slots on your CORIOmaster and gives some details about each slot:

Title	Value	Information
Slot	Read-only	The name of the display as identified by the system - see "Input and Output Naming Convention" on page 23 for details on the window name, as opposed to display name.
Name	Editable	Customizable output name - by default, the abbreviation for the slot and output numbers, but you can rename this to be something more memorable such as "Projector" or "Display1". The name can be up to 19 alphanumeric characters with no spaces. This name is also modifiable in the Video Wall (see "Display - Renaming Output Displays" on page 115).
Status	Read-only	Output status - this will return INVALID or UNKNOWN if the system can't assess the output properly. If it returns OK, you have a valid output attached to the port.

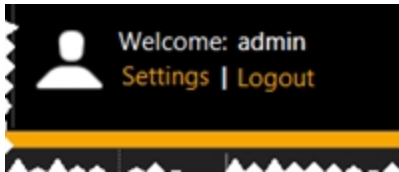
Card Type	Read-only	This field returns the card type as detected by the system.
HDMI	Read-only	Returns Found or Not_Found, depending on the detected HDMI status.
HDCP Active	Read-only	Returns Off if HDCP is not enabled, and On if HDCP is enabled.
Genlock	Read-only	Tells you whether Genlock is off or on. Related to the next column, Genlock Source. (If source is NULL, Genlock will by definition be Off.)
Genlock Source	Drop-down	You can choose the input slot you would like to Genlock to this output. See "Genlock/Framelock" on page 71 for an explanation of this feature.

Any modifiable settings on the Slot Status page are updated live, as you exit the field, so there is no Save button.

System

From the Settings window, you can make various changes to the CORIOmaster, and you can gather some system information.

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the System option under Information on the left. In the right-hand pane, you see several lines of information about the system:
 - On the top line is the model name of the CORIOmaster you are currently connected to.
 - The second line lists the model number of the CORIOmaster you are currently connected to.
 - The third line lists the serial number of the CORIOmaster you are currently connected to.
 - The fourth line gives the application version number of this CORIOgrapher software.

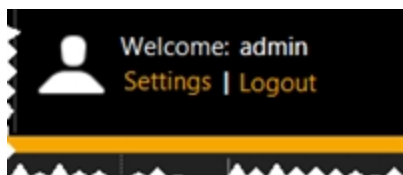
Each of these fields is read-only.

Timeout

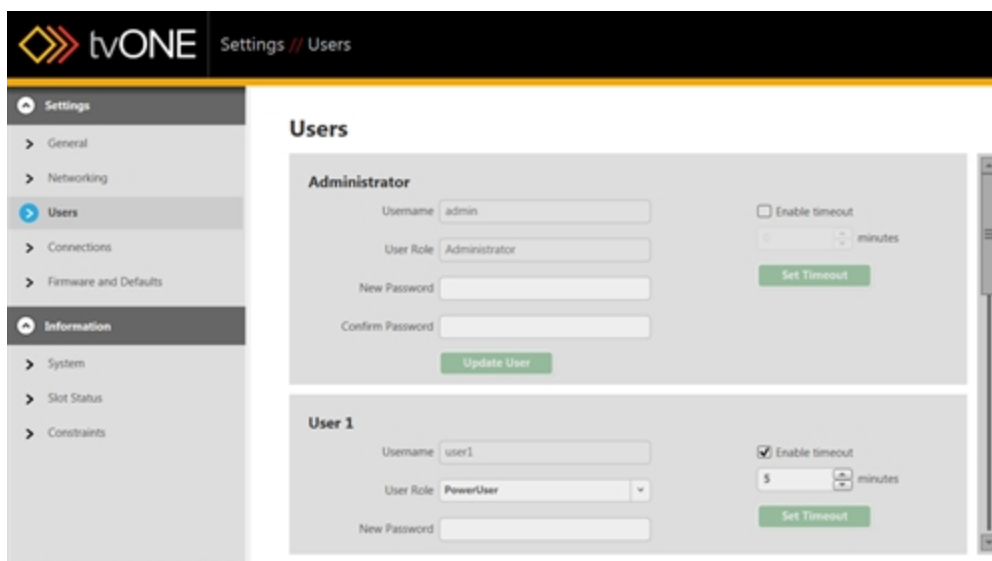
By default, any connection to a CORIOmaster will need to stay active or it will be disconnected after five minutes. This will not affect active connections that have at least one command go to the unit in a five-minute window.

If you wish to stay connected while idle for more than five minutes, an administrator will need to change the settings on a per-user basis.

1. While connected to a CORIOmaster, click the Settings button in the top right corner.



2. Choose the Users option under Settings on the left.



In the right-hand pane, you see various options that allow you to change username, password and timeout details for individual users.

3. Find the user whose timeout period you wish to change. To the right of that user's username, uncheck the Enable timeout field if you wish the user to be able to stay logged in indefinitely.
4. If you wish to keep the timeout option enabled but adjust the timeout period, type the appropriate number of minutes into the field (or use the arrows to adjust the existing number up or down).

5. Click the Set Timeout button to save your changes. If you are making changes to the account you are currently logged in from, you will need to log out and log in again for the settings to take effect. (If the unit times out before you log out, the changes will be lost and you will need to configure the change again.)

For more details, you may wish to see "Administrator Setup Information" on page 14, "Logout" on page 22, "Changing Passwords" on page 177, and "Users" on page 176



Note: Administrator accounts also default to time out after five minutes, but you may want to increase this or disable timeout, particularly if you are going to update the firmware on a unit. To update firmware, make sure the Administrator timeout is either disabled or a minimum of fifteen (15) minutes.

Canvases

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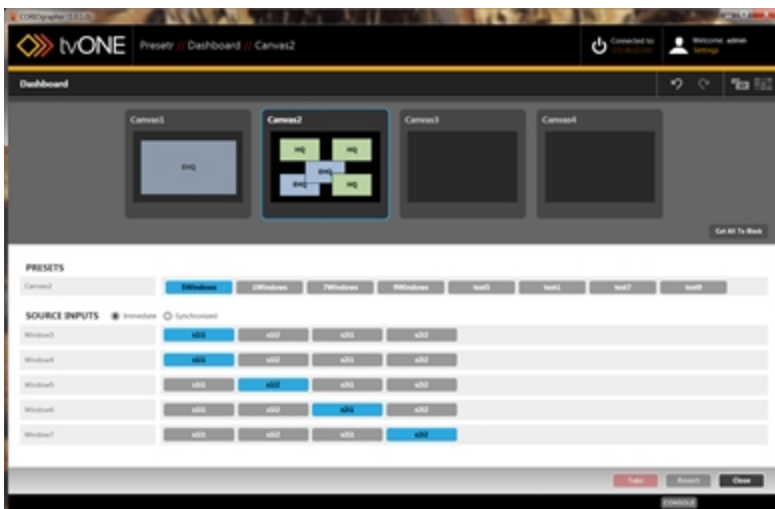
About Video Walls

A CORIOmaster has four video walls per configuration; a CORIOmaster mini used to only have one video wall per configuration, but in early 2015 a firmware update increased this to four per configuration. You can see your video wall selection in the bottom left corner of the Video Wall Editor.



Each canvas is a video wall, with configurable inputs and outputs. You can save multiple Presets on each canvas.

When you go to the Dashboard, each canvas is available as a separate entity, with its own presets per canvas. You can change presets and inputs on-the-fly in a live environment on a per-canvas basis.



If your CORIOmaster mini only has one canvas, you can upgrade its firmware to version M307 or later, which supports multiple canvases. To download the appropriate update, see <http://www.tvone.com/firmware-updates>.


Moving between Video Walls

When you are working in the Editor with video walls, a CORIOmaster has four video walls per configuration; a CORIOmaster mini used to only have one video wall per configuration, but in early 2015, firmware version M307 increased this to four per configuration. You can swap between them in the Editor or from the Video Wall Overview page.

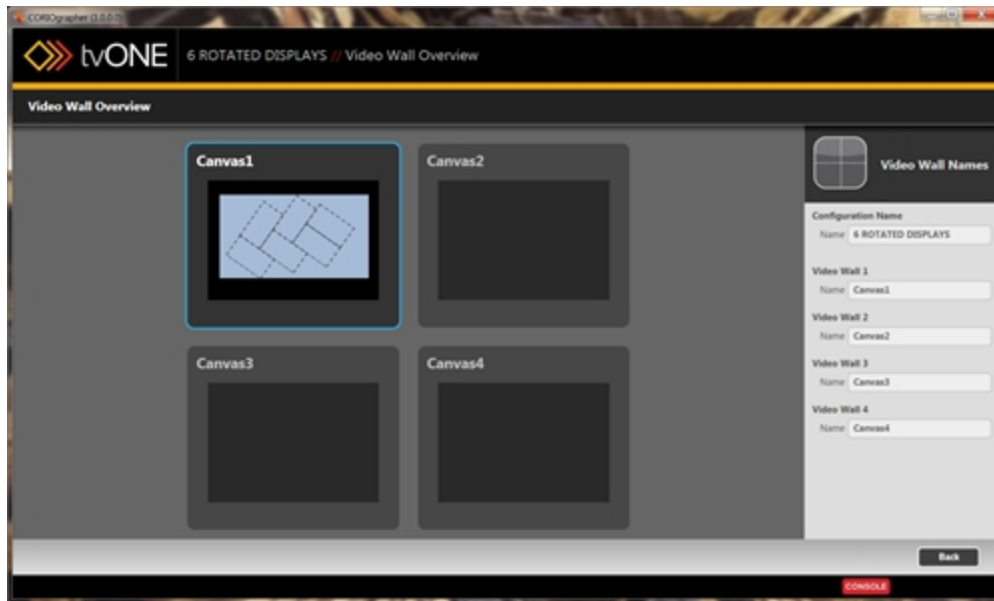
To move between video walls:

- In the Editor, at the bottom left of the page (above the X and Y coordinates), there are four dots between two arrows.



- The four squares on the right are the Video Wall Overview button . If you click the the Video Wall Overview button , the Video Wall Overview page will open. You can see a preview of the video walls available in this configuration. Click one of the video wall pre-views to go to the Editor with that video wall loaded, or edit the name of it here. The

video walls are named "Canvas1" through "Canvas4" by default.



Dashboard

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About the Dashboard

When you have configured several video walls that you will want to use, you want to be able to use them in real time, and potentially switch between them rapidly.

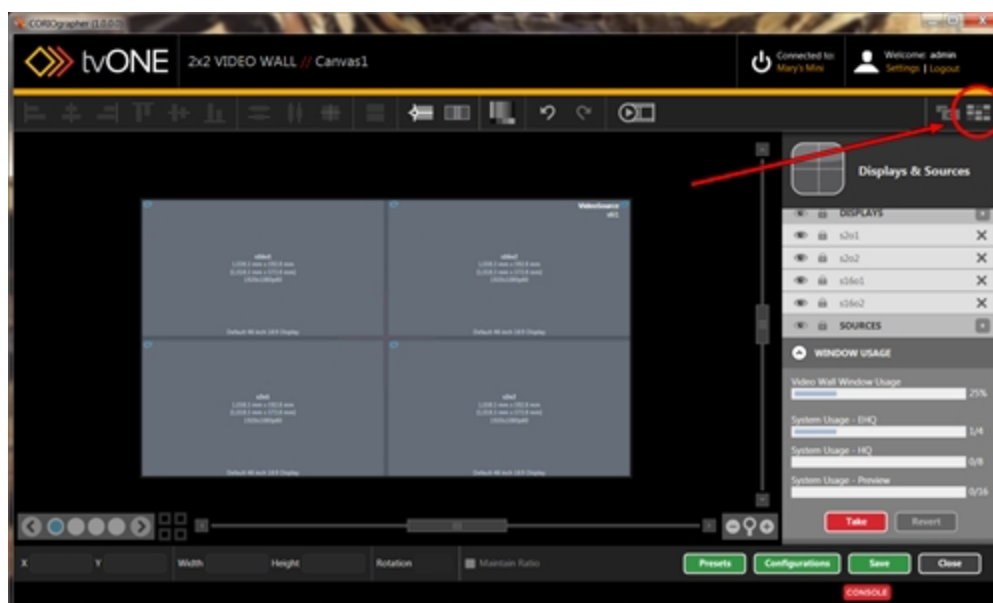
The Dashboard, available to all users except guest users, allows you to use your video walls and presets in a live setting. From the dashboard, you can choose which of the four video walls you want to use, and the presets that are associated with these video walls.

Within each video wall (canvas), you can store multiple presets (up to 49 total). From the Dashboard, you can see each preset as a button, and all the video source inputs associated with that video wall. You can cut to black, or swap on the fly between them.

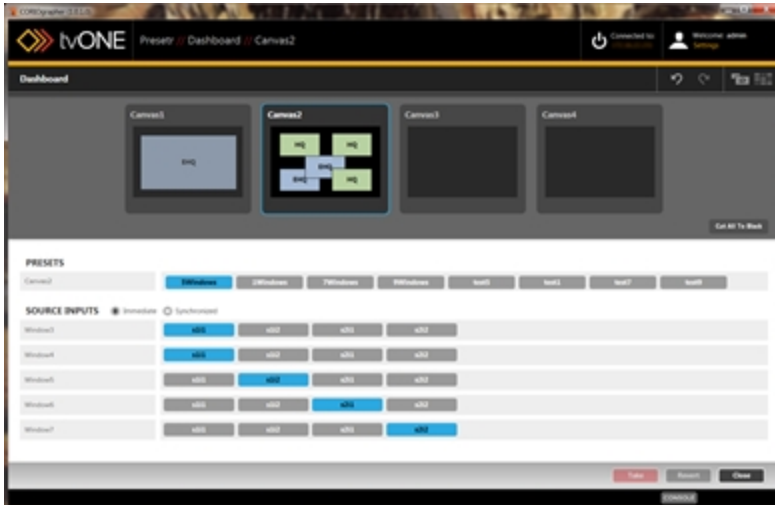
Getting to the Dashboard

The Dashboard, where the configured video walls can be enabled, is available to administrators, power users, and basic users. In the case of a basic user, the Dashboard is the default view after connecting to a CORIOmaster.

For administrators and power users, the default view after connecting to a CORIOmaster is the Video Wall Editor. For these users, the Dashboard can be accessed via the button in the toolbar:

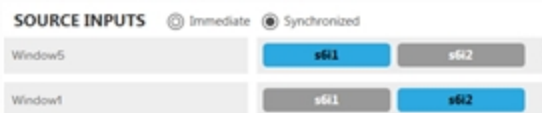
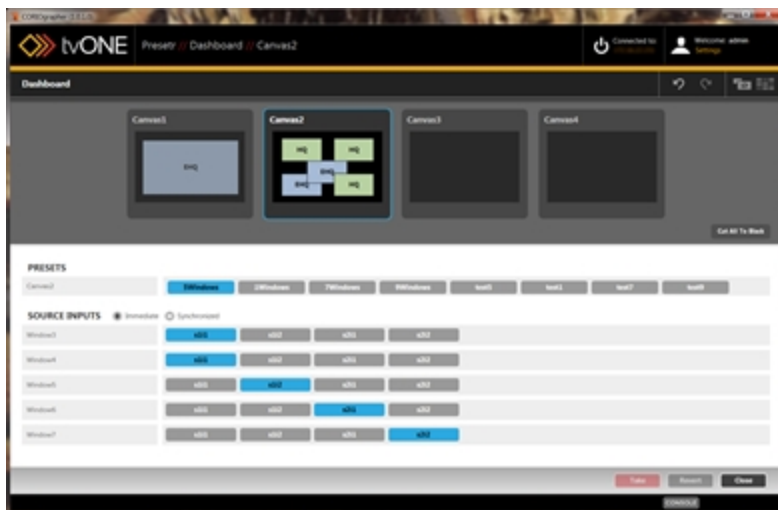


After using the Dashboard button from the Video Wall Editor, or after logging in if you are not an administrator or power user, you get the Dashboard.




Immediate vs Synchronized

There are two modes in which the Dashboard functions - Immediate and Synchronized.



In Immediate mode, any action you take is committed individually by the CORIOgrapher software. Each step is live as soon as it has been committed. This mode requires that the software be actively connected to a CORIOmaster system.

In Synchronized mode, actions are only committed when you initiate a "Take". You can queue up a number of changes and commit them all at once by making multiple changes before pressing Take. The software only has to be connected to the CORIOmaster when the Take button is pressed - any previous configuration changes can be made while disconnected from the unit, if you wish to do so. (The CORIOmaster will accept any commands, but if the system assesses that the incoming commands will cause degraded performance, it will warn you of this with an alert message.)

Button Color	Example	Meaning
Gray		Option that is not currently selected

Blue



The currently live selection

Black



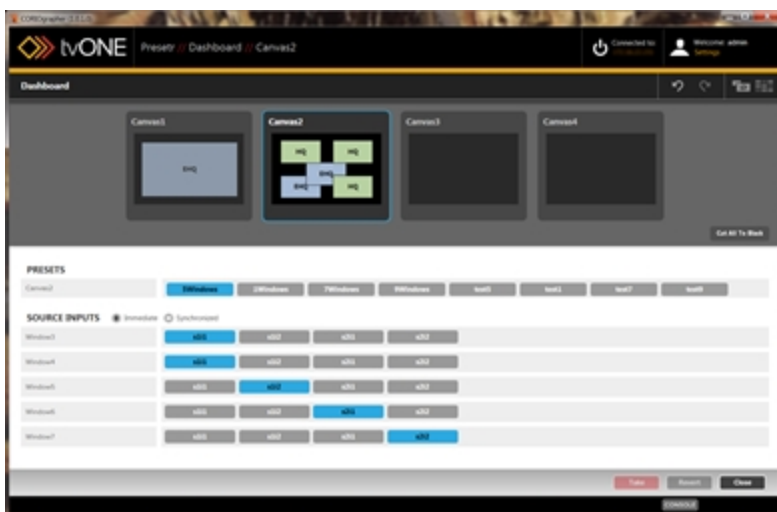
SYNCHRONIZED ONLY - the queued - but not yet live - option (Turns blue after you click Take button)

Switching Presets in the Dashboard

When you are in the Dashboard, you can change between your various configured settings on-the-fly, in a live environment.

The simplest swaps that can be done are to change the inputs from one source to another.

If you want to actively change the arrangement of your windows on the fly, you need to have saved each arrangement as a preset within that canvas (video wall). When you are in the Dashboard in your live environment, you can swap between video walls, and within each video wall (canvas), you can swap between presets.



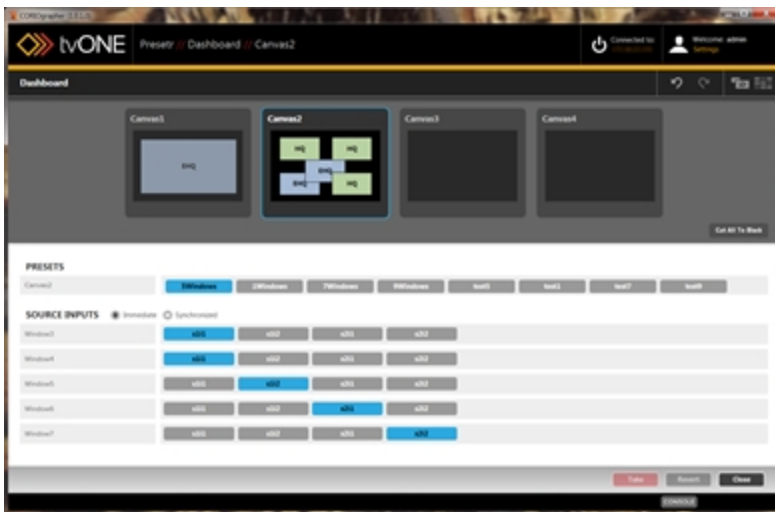
If you are in Immediate mode, any different preset you choose will instantly be displayed through the CORIOmaster on your displays. If you are in Synchronized mode, you can choose the new preset and modify input sources, then click the Take button to enable the modifications and display your changes through the CORIOmaster on your displays.

Switching Sources in the Dashboard

When you are in the Dashboard, you can change between your various configured settings on-the-fly, in a live environment.

The simplest swaps that can be done are to change the inputs from one source to another.

When you are in the Dashboard in your live environment, you can swap between canvases, and within each canvas, you can swap between presets, if applicable, and change which input goes to which window.

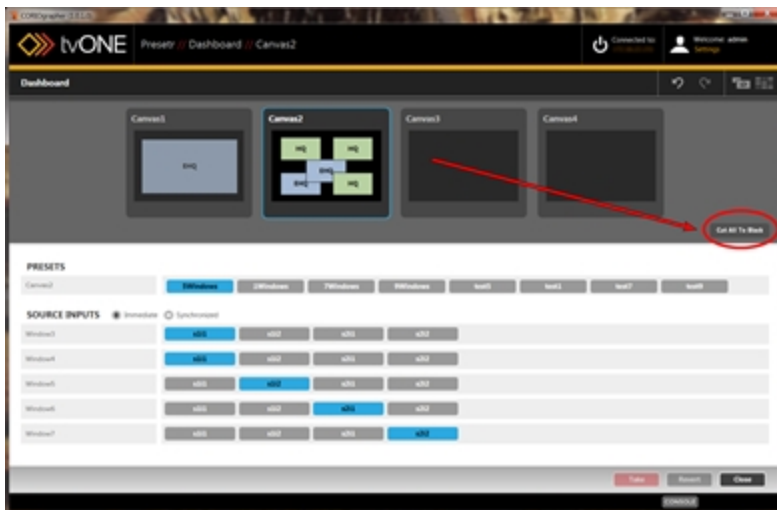


If you are in Immediate mode, any different input you choose will instantly be displayed through the CORIOmaster on your displays. If you are in Synchronized mode, you can modify input sources, then click the Take button to enable the modifications and display your changes through the CORIOmaster on your displays.

Cut All to Black

When you are in the Dashboard, you can change between your various configured settings on-the-fly, in a live environment.

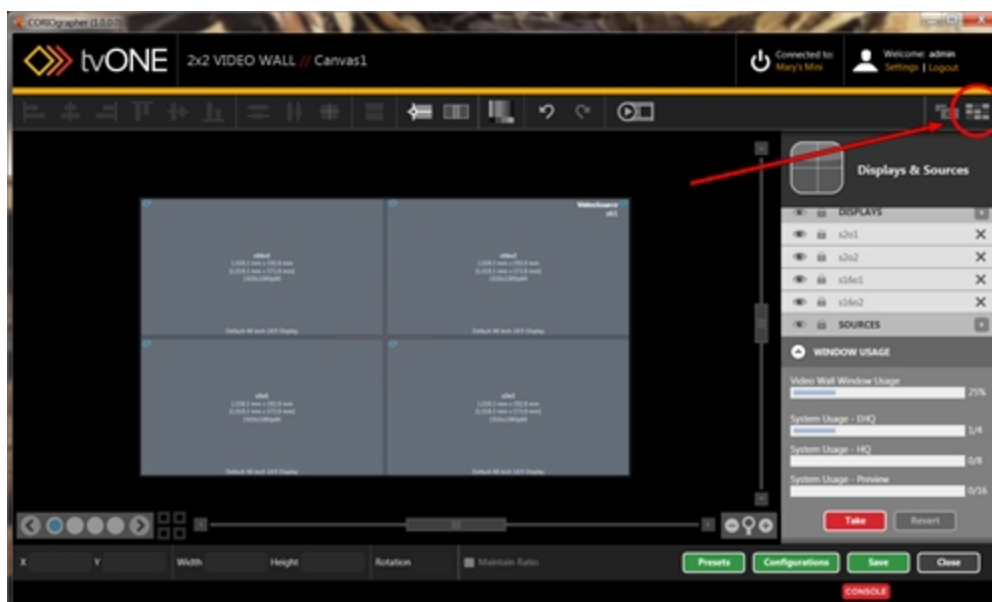
In addition to changing inputs and swapping between presets, there is a button, labeled "Cut All To Black", that allows you to simultaneously cut all inputs.



When you have cut all to black, if you choose to cut video in again, you simply change your Dashboard settings by selecting the new preset and/or input choices you want, and click Take, if you are in Synchronized mode.

Change Source Inputs On-The-Fly

1. While connected to a CORIOmaster, click the Dashboard icon in the top right corner of the video wall.



2. In the Dashboard window, you can switch between source inputs for a given window, on-the-fly. Next to each window, all available inputs are shown as buttons. The currently-used input is shown in blue; an available input is shown in gray. If you are in Synchronized mode (see "Immediate vs Synchronized" on page 193 for an explanation of the difference between the two modes), you can select a new input but it will not become the active input until you click Take. Until you click Take, the queued input button is black. In Immediate mode, there is no black button as there are no queued changes; all changes are immediate.



Presets

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About Presets

What is a Preset?

A preset, at its simplest, is a saved video wall. Configure a video wall with the physical arrangement of displays that you wish, and set up the first arrangement of windows - you can then save this as a Preset. Rearrange the windows and save again as another Preset. When you have multiple Presets saved, you can access them from the Dashboard and flip between Presets on-the-fly in your live environment. Define a duration and the windows can move smoothly from one location, angle, and size to another as you transition between Presets.

Why would I use Presets?

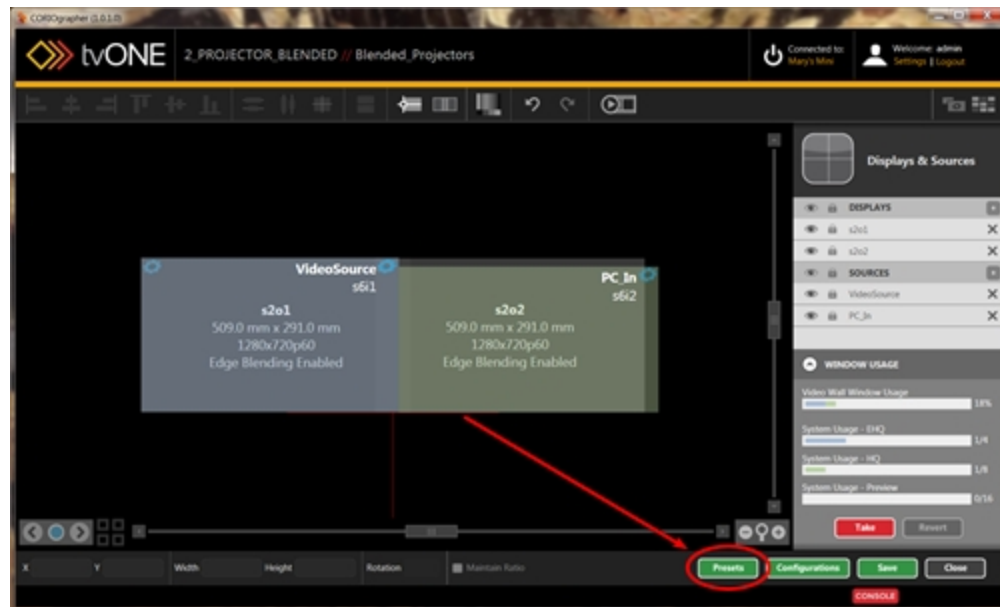
Presets are useful if, for example, you want to do a presentation and swap between several pre-configured arrangements of windows on your displays. In this example, your first preset may be a single large camera input shown across all displays, then your second preset may be a split-screen between a presentation slide and the original camera image. You can configure all the different window arrangements and transitions beforehand, save them as Presets, then use the Dashboard to swap between the saved Presets in real time.

Save Preset

When you have a video wall set up just as you want it, you can save the entire thing as a preset.

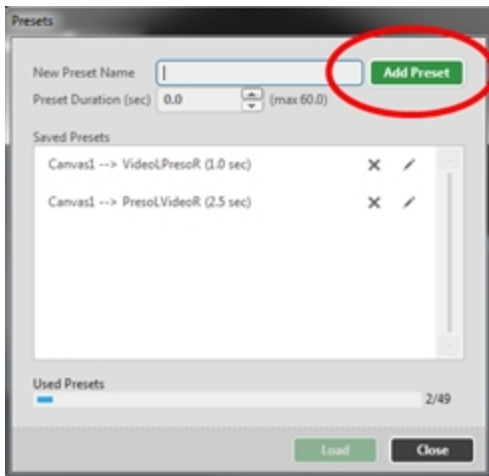
To save as a preset:

1. If you are in Synchronized mode, click the red Take button to commit any changes you've made.
2. Click the Presets button in the bottom right corner of the Editor.



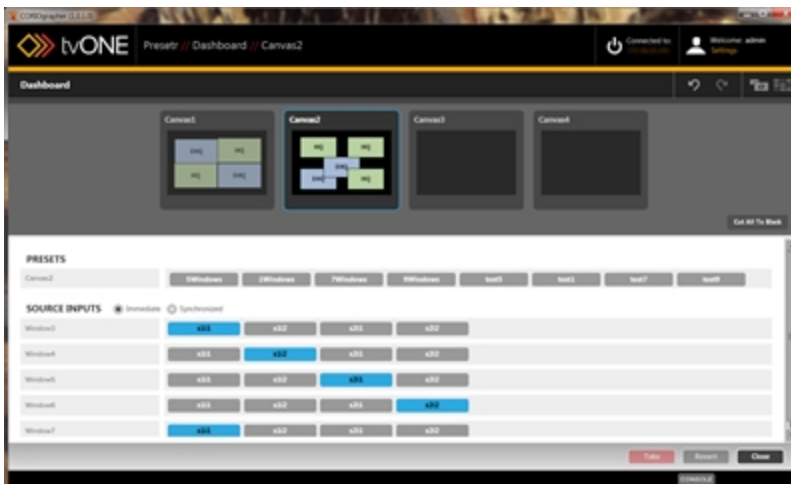
3. In the pop-up window, type the name for this preset. If you have moved any windows and want to use the animated transitions feature, specify a duration for the windows to move to their new locations. (For more information on the transitions feature, see "About Transitions" on page 208.) Names cannot have spaces, but underscores (_) are acceptable.

Click the Add Preset button.



4. The preset will appear in the list of presets in the window, and the number of Used Presets will increase by one, out of your maximum of 49.
5. Click the Close button to return to the Video Wall Editor window.

Now that the preset has been saved, when you go to the Dashboard, you will see that preset appear, along with any others, as a button in the Presets section.



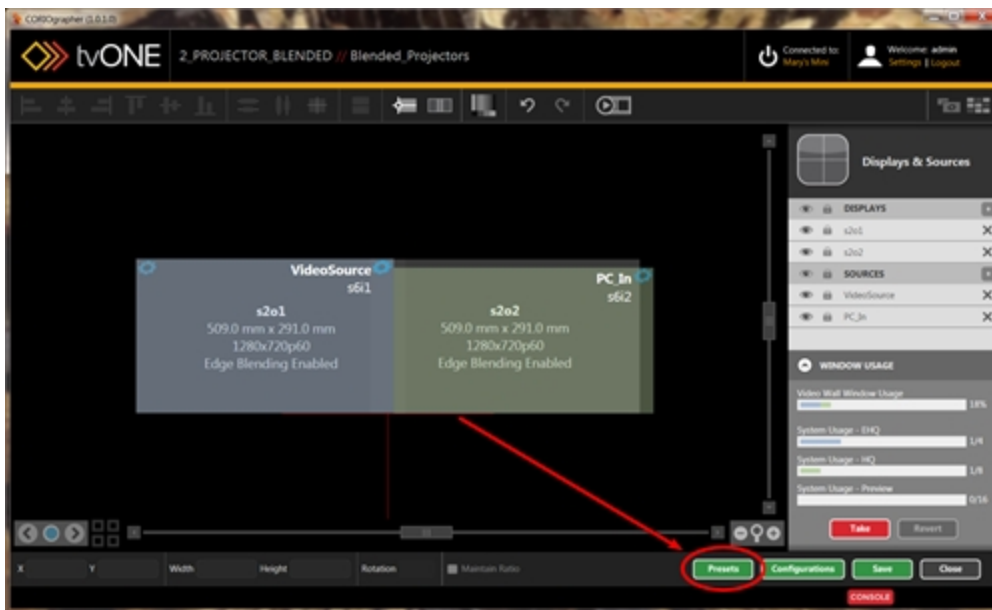




Note: A preset cannot be saved if the displays and sources have not been appropriately allocated. If you are trying to save a preset and it does not appear in the list when you click the Add button, try using the Save button in the video wall. If connections are not appropriately allocated, an alert message appears saying "Not all of your inputs and outputs are correctly connected to physical slots on the CORIOmaster. Would you like to assign the connections now?". Once you resolve these issues, you should be able to save the preset successfully.

Edit Preset

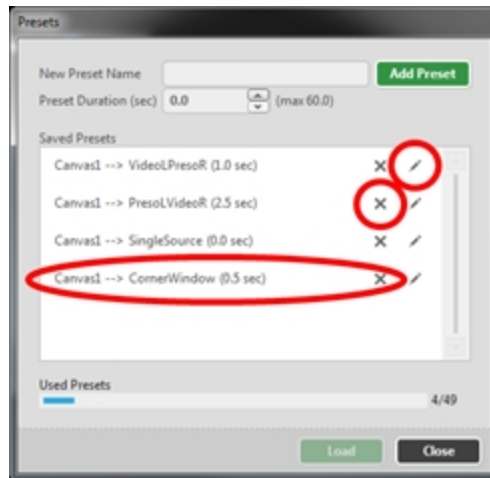
If you want to modify an existing Preset, follow these steps.

1. In the bottom right corner of the video wall, select the Presets button.



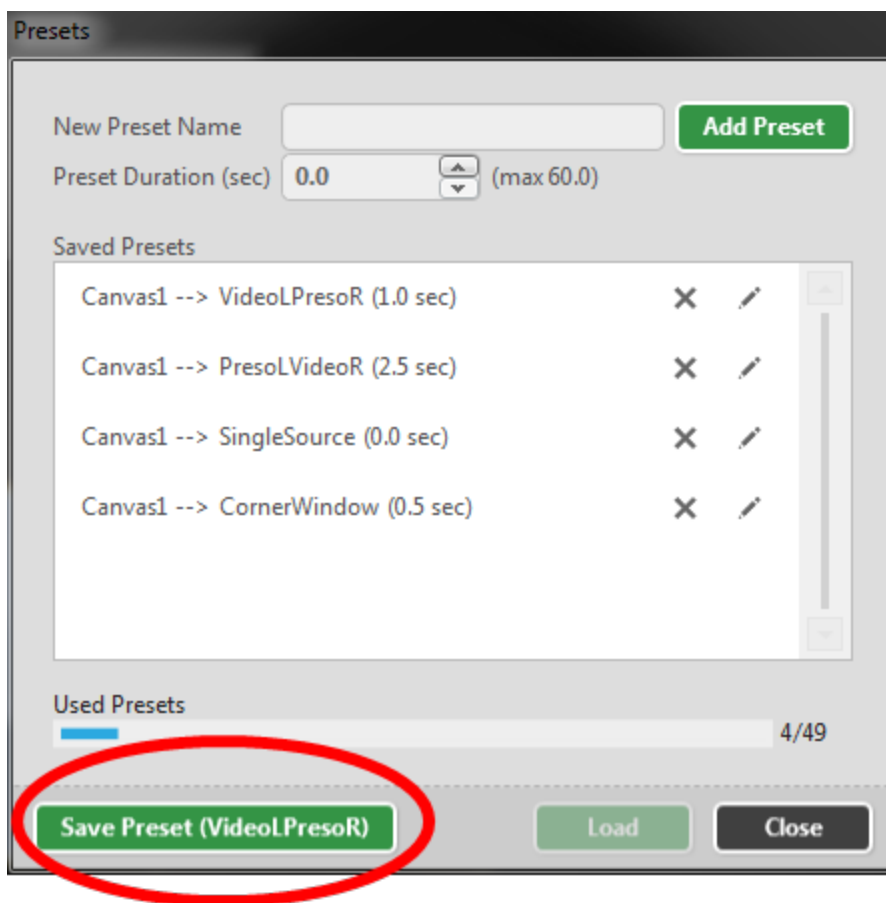
2. In the pop-up window, choose the Preset you want to modify from the list, and load it.
 - If you only wish to modify the name or duration of the preset, use the pencil icon () to edit the name in the window, then click Close to close the window.
 - If you wish to delete the preset, use the X icon () to remove the line of the preset you want to delete, then click Close to close the window.

- If you wish to modify any other aspect, select the line for the Preset and click Load to open it in the video wall.



3. Once the preset has opened in the video wall, make edits as you wish.

4. To save changes, click the Presets button again, and in the bottom left corner, click the green button labeled Save Preset (your preset).



Note: If you have opened a preset from the Dashboard and then modified it, the Save Preset (x) button may not function as expected. If you plan to edit a Preset, please open it from the Presets window as described above.

Transitions

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About Transitions

Beginning with CORIOgrapher version 1.0.5, Transition Effects have been introduced which allow you to configure windows to move dynamically when transitioning from one Preset to another. It is now possible to use any combination of the following animated transitions on individual Windows:

- Fade Through Black, where the previous window fades to black and the new window appears from black. See "Source - Transition - Fade Through Black" on page 150 for instructions.
- Horizontal Shrink and Expand, where the previous window narrows horizontally into a vertical line, then expands horizontally with the new window. See "Source - Transition - Horizontal Shrink" on page 151 for instructions.
- Vertical Shrink and Expand, where the previous window shortens vertically into a horizontal line, then expands vertically with the new window. See "Source - Transition - Vertical Shrink" on page 152 for instructions.
- Spin, where the image rotates around its center point either right or left up to seven times, changing to the new window halfway through the process. See "Source - Transition - Spin" on page 153 for instructions.

These can be also used in combination with each other. Once the transitions are defined for all Windows desired (to a maximum of 14), save the canvas as a Preset. In future, when you load that Preset, the specified transitions will be used to switch from the existing Windows to the new Windows.

In addition to the window-specific transitions, Window movement is now animated.

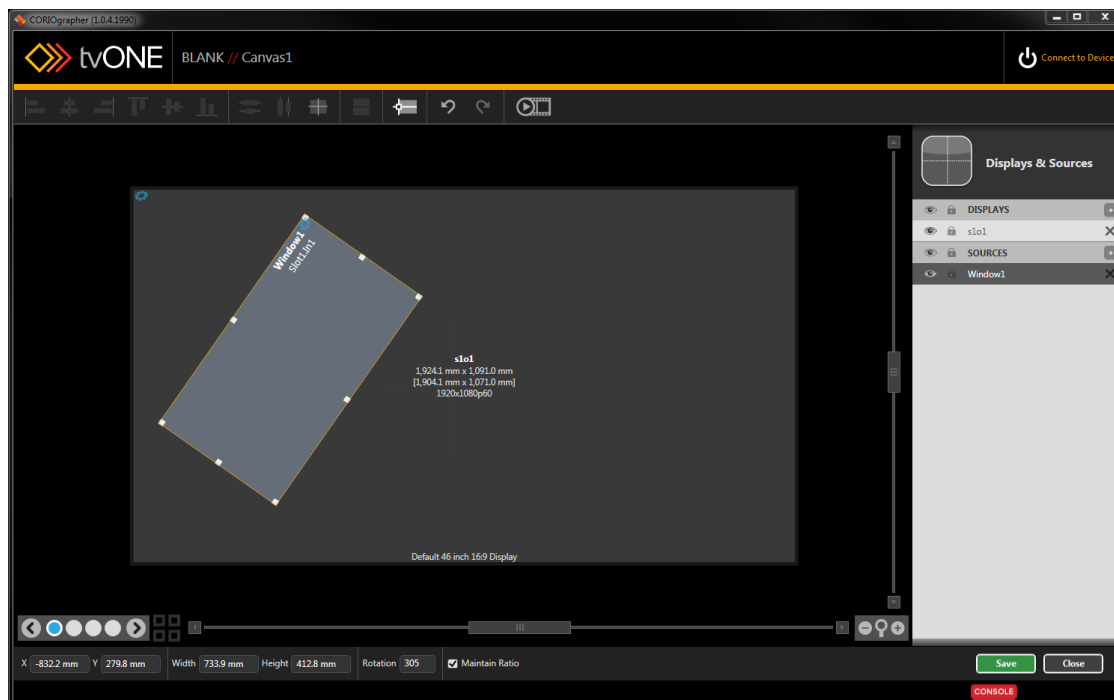
If you have one Preset saved and resize, move, and/or rotate Windows on the Video Wall and save the new locations/sizes as another Preset, when you transition from the first Preset to the second, the windows will smoothly move (and rotate, if rotation is defined in either Preset) by the most direct path to the new locations, rather than simply disappearing and reappearing in their new locations.

Control the speed of this movement by defining the duration of the transition when you save the Preset. If the duration is set to 0.0, the transition will be instantaneous (same as previous behavior). The duration can be configured up to 60.0 seconds. See "Save Preset" on page 201 for instructions.

Basic Transition Tutorial

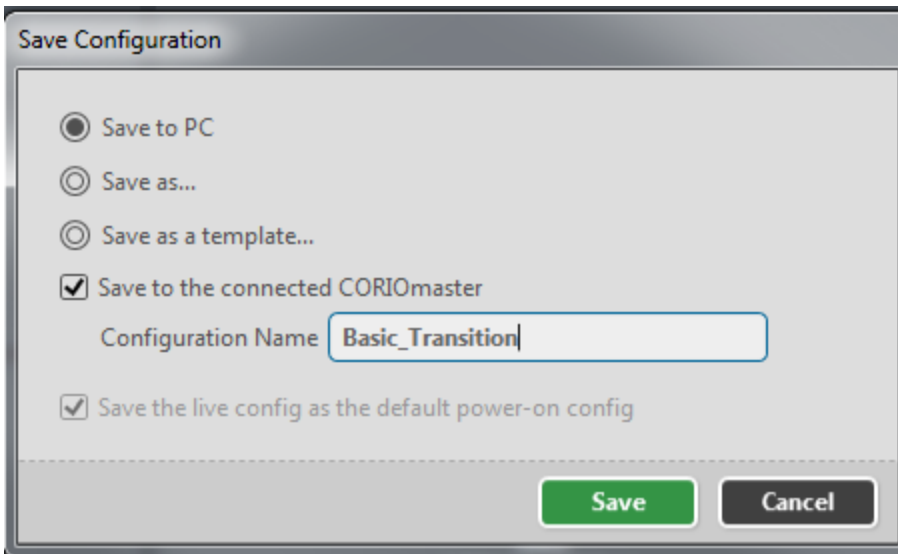
Follow the instructions here to set up two presets so that a window rotates and moves from one side of the screen to another. This qualifies as movement - within a window, you can also configure transitions. This may not be precisely the arrangement you need to use, but this example may give you ideas regarding how you want to use preset-based transitions.

In this example, we are starting with a blank canvas and setting it up with one big display that contains one small window at an angle:



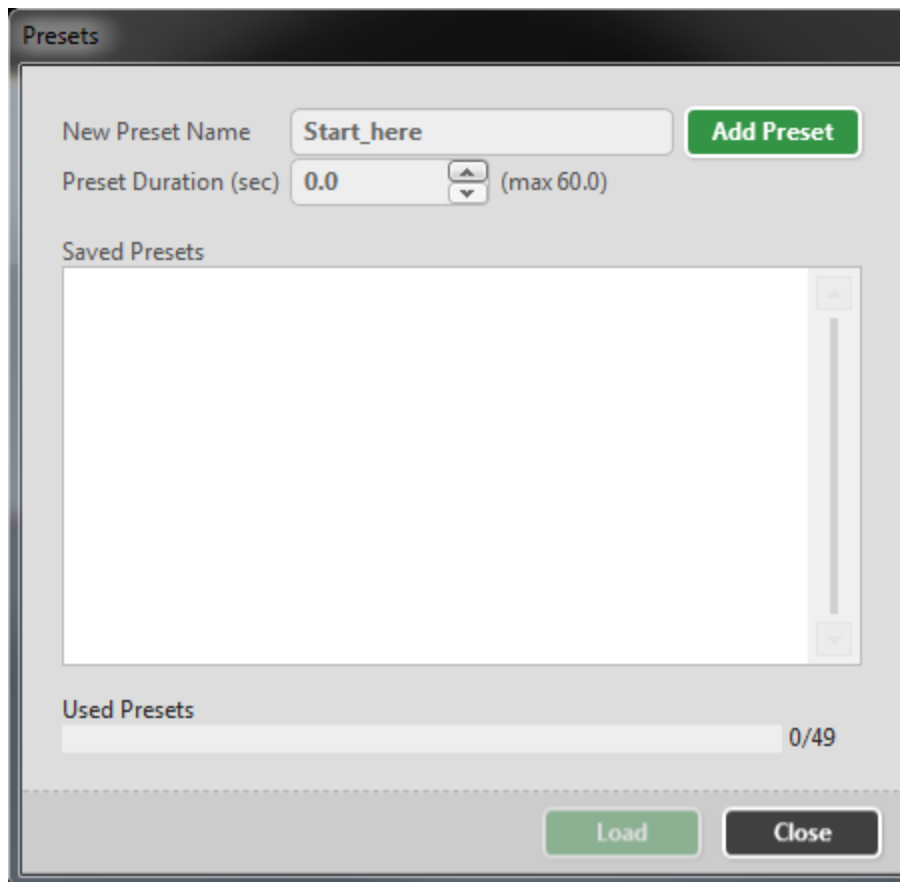
Click Connect to Device in the top right corner and connect to your target CORIOmaster. After authenticating, you receive an alert that your current configuration is not saved to the CORIOmaster. Click OK on the alert and allocate sources and displays if needed. Once the Video Wall Editor loads, click Save to save the currently loaded video wall to the CORIOmaster as a config-

uration.

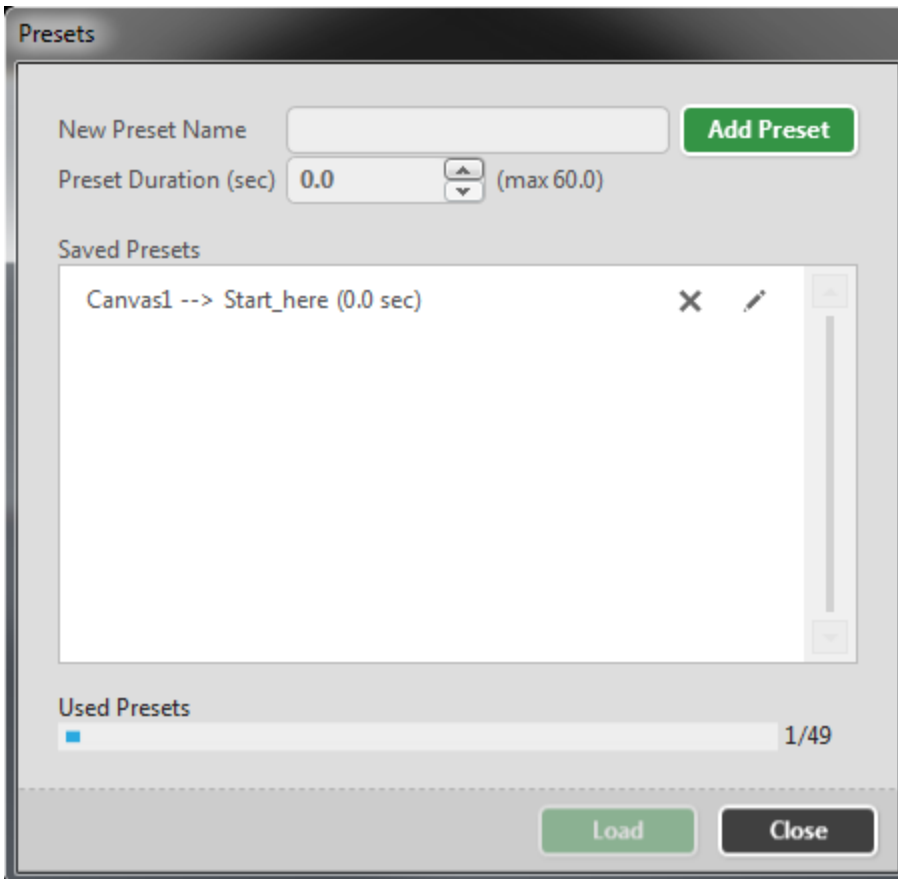


Now that it's a saved Configuration, save the current Video Wall as a Preset by clicking the Presets button and entering a Preset name in the new window. Click Add Preset. As this is an initial Preset, we are not configuring a duration as it's not transitioning from an earlier config-

uration to this one.

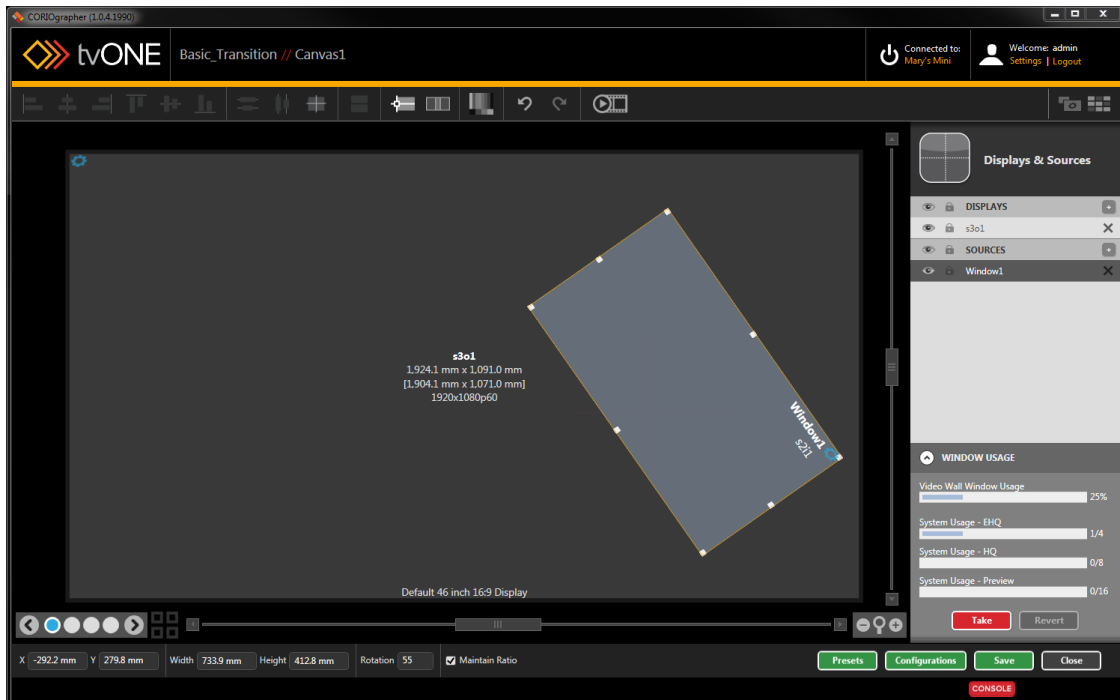


Once this preset has been saved, it appears in the "Saved Presets" box, listed (in this case) as "Canvas1 --> Start_here (0.0sec)". Click the Close button to return to the Video Wall.



With the initial configuration defined, we can define our second state (movement) in the Video Wall. In this example, we will be moving the display to the right side of the screen and reversing the angle. Drag the Display to its new location and angle, or type new values into the X, Y and

Rotation fields.



If desired, use this opportunity to change the source input slot ("Source - Changing Input Slot" on page 127). If you do this, the video source will change halfway through the movement. You can also add source change transitions such as fade through black, horizontal or vertical shrink, or

spin, but in this example, we will keep the movement straightforward.

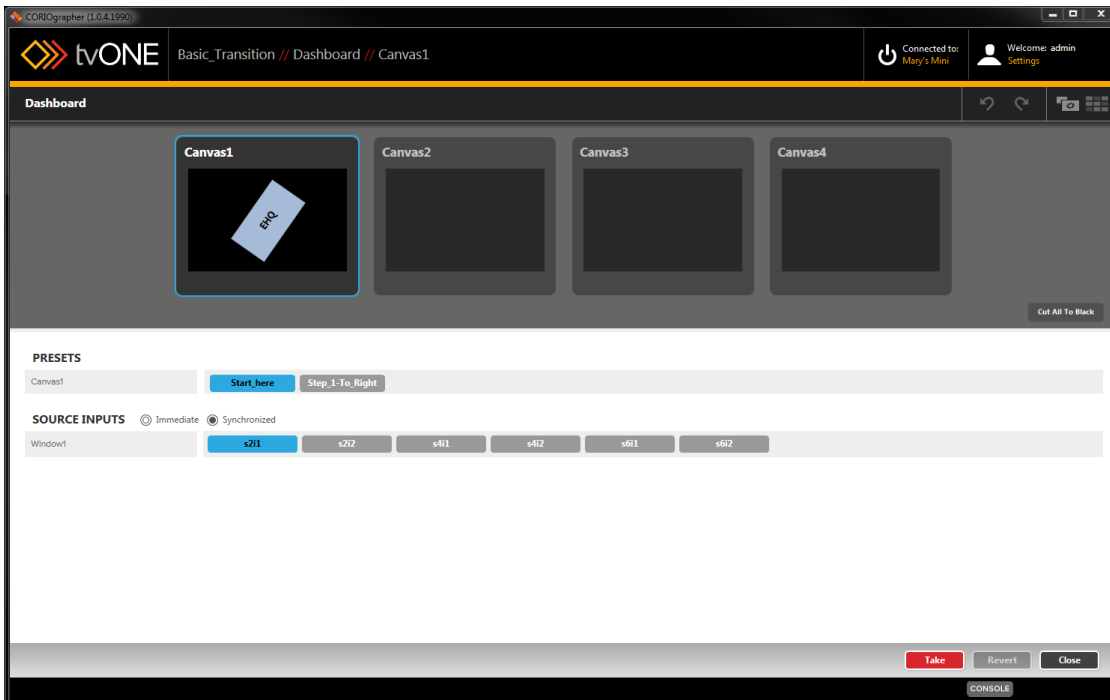


Save the current setup as a new Preset: Click the Presets button, enter a new Preset name, specify how long you would like the transition to take, and click the Add Preset button.

The screenshot shows a dialog box titled "Presets". At the top, there is a text input field for "New Preset Name" and a green "Add Preset" button. Below this is a "Preset Duration (sec)" field with a numeric value of "0.0" and a spinner control, with "(max 60.0)" to its right. The main area is titled "Saved Presets" and contains a list of two items: "Canvas1 --> Start_here (0.0 sec)" and "Canvas1 --> Step_1-To_Right (1.0 sec)". Each item has a delete icon (X) and an edit icon (pencil) to its right. At the bottom left, there is a "Used Presets" progress bar showing a small blue segment and the text "2/49". At the bottom right, there are "Load" and "Close" buttons.

Click the Save button to save the entire Configuration again, and the transition is now ready to be tested. Be sure the input and output are connected appropriately, and switch to Dashboard

view. Select the first Preset. (If you are in Synchronized mode, click the Take button as well.)



Observe the live display, and click the second Preset button. (If you are in Synchronized mode, click the Take button as well.) You will see the window move from the first position to the second position, and rotate as needed. If you would like to speed up or slow down the transition, you can edit the duration of the second preset ("Edit Preset" on page 204) accordingly. If you would like to combine other transition effects, you can add fading ("Source - Transition - Fade Through Black" on page 150), shrinking ("Source - Transition - Horizontal Shrink" on page 151 or "Source - Transition - Vertical Shrink" on page 152) and spinning ("Source - Transition - Spin" on page 153).

Resolution Editor

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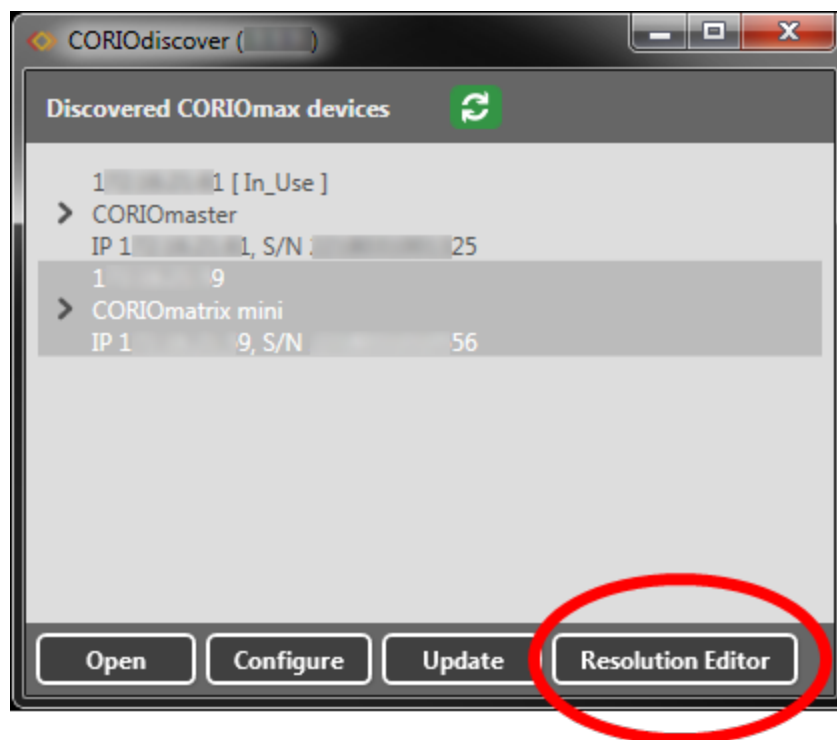
Resolution Editor

Beginning with version 2.0.0, the CORIOdiscover application includes a Resolution Editor.

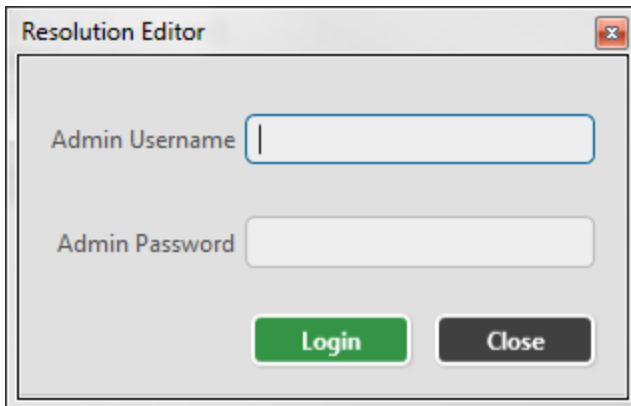
1. Start the CORIOdiscover application:



2. Select the target device (the one you want to have the Custom Resolution) and press the **Resolution Editor** button.

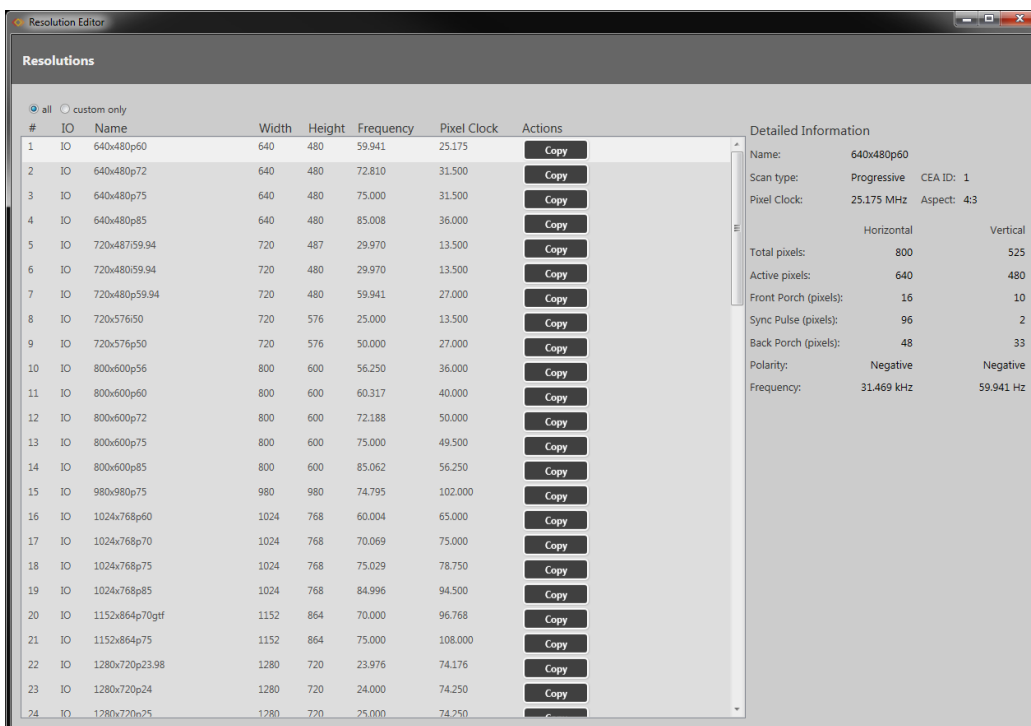


3. Enter the Administrator username and password for the unit:



The image shows a dialog box titled "Resolution Editor" with a close button in the top right corner. It contains two input fields: "Admin Username" and "Admin Password". Below the input fields are two buttons: a green "Login" button and a black "Close" button.

4. Once you have successfully logged in you see the Resolution Editor main window:



The image shows the main window of the Resolution Editor. It features a table of resolutions and a detailed information panel on the right.

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
1	IO	640x480p60	640	480	59.941	25.175	Copy
2	IO	640x480p72	640	480	72.810	31.500	Copy
3	IO	640x480p75	640	480	75.000	31.500	Copy
4	IO	640x480p85	640	480	85.008	36.000	Copy
5	IO	720x487i59.94	720	487	29.970	13.500	Copy
6	IO	720x480i59.94	720	480	29.970	13.500	Copy
7	IO	720x480p59.94	720	480	59.941	27.000	Copy
8	IO	720x576i50	720	576	25.000	13.500	Copy
9	IO	720x576p50	720	576	50.000	27.000	Copy
10	IO	800x600p56	800	600	56.250	36.000	Copy
11	IO	800x600p60	800	600	60.317	40.000	Copy
12	IO	800x600p72	800	600	72.188	50.000	Copy
13	IO	800x600p75	800	600	75.000	49.500	Copy
14	IO	800x600p85	800	600	85.062	56.250	Copy
15	IO	980x980p75	980	980	74.795	102.000	Copy
16	IO	1024x768p60	1024	768	60.004	65.000	Copy
17	IO	1024x768p70	1024	768	70.069	75.000	Copy
18	IO	1024x768p75	1024	768	75.029	78.750	Copy
19	IO	1024x768p85	1024	768	84.996	94.500	Copy
20	IO	1152x864p70gtf	1152	864	70.000	96.768	Copy
21	IO	1152x864p75	1152	864	75.000	108.000	Copy
22	IO	1280x720p23.98	1280	720	23.976	74.176	Copy
23	IO	1280x720p24	1280	720	24.000	74.250	Copy
24	IO	1280x720h25	1280	720	25.000	74.250	Copy

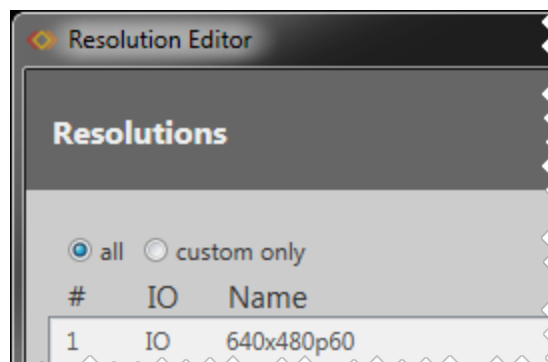
Detailed Information

Name: 640x480p60
Scan type: Progressive CEA ID: 1
Pixel Clock: 25.175 MHz Aspect: 4:3

	Horizontal	Vertical
Total pixels:	800	525
Active pixels:	640	480
Front Porch (pixels):	16	10
Sync Pulse (pixels):	96	2
Back Porch (pixels):	48	33
Polarity:	Negative	Negative
Frequency:	31.469 kHz	59.941 Hz

5. By default the Resolution Editor shows all resolutions, both built-in and custom. Scroll to the bottom of the list or select the **Custom Only** radio button to see the Custom Res-

olutions:



Note that built-in resolutions only have a **Copy** option, while Custom Resolutions have **Copy**, **Edit** and **Reset** buttons.

71	IO	1920x1200p50cvt-rb	1920	1200	49.974	127.750	Copy
72	IO	1920x1200p60cvt-rb	1920	1200	59.950	154.000	Copy
1000	IO	1920x1080p60	1920	1080	60.000	148.500	Copy Edit Reset
1001	IO	Empty1001	0	0	0.000	0.000	Copy Edit Reset

For more details, see "Accessing Resolution Editor from CORIOdiscover" on page 224.

Resolution Editor Overview

The CORIOmax series (CORIOmaster, CORIOmaster mini, CORIOmatrix and CORIOmatrix mini) supports a vast majority of standard video resolutions, both broadcast and computing, as well as certain non-standard resolutions. These include the more commonly used resolutions from the following standards:

- CEA-861-D
- VESA CVT
- VESA GTF
- VESA DMT

In addition, you can add up to ten further Custom Resolutions either from the CORIOdiscover software (see "Resolution Editor" on page 219) or via command line (see "Command Line - Resolutions" on page 309).

Resolution Editor Constraints

Custom Resolution support and the CORIOdiscover Resolution Editor is available from firmware version M306/M307 onwards.

Custom Resolutions cannot be used with SDI input or outputs.

The unit can save a maximum of ten Custom Resolutions.

The Custom Resolutions are definable within the following constraints:

- all numeric values are in pixels unless otherwise stated.
- all numeric values are positive integers or zero.
- string values may not contain spaces.
- string values may only be valid printable ASCII characters.
- string values are limited in the number of characters they may contain.

Custom Resolutions do not support:

- borders (any required border values must be included in the front and back porches).
- the pixel clock is limited to the following range:
 - 13.5MHz to 162MHz
- The value for the Active Video must not be zero.

Interlaced Custom Resolutions require that:

- the vertical front and back porches are twice the even field.
- the vertical sync pulse is twice the even value.

The CEA identifier information option (CEAID) does not affect the Custom Resolution - it is there for providing attached equipment with information on the resolution. Only set this value when defining a Custom Resolution that complies with the CEA profile for that value.



Note: The unit might not display an image if the CEAID is non-zero and the Custom Resolution does not conform to the CEA format for that value.

If you are using the command line, Custom Resolutions become persistent after using the `System.SaveAllSettings()` operation.

Accessing Resolution Editor from CORIOdiscover

Listing Resolutions from CORIOdiscover Resolution Editor

To list the available built-in and Custom Resolutions from CORIOdiscover, access the main Resolution Editor window. From this window, you can see a list of all built-in and custom resolutions.

The screenshot shows the Resolution Editor window with a list of resolutions and detailed information for the selected resolution (640x480p60).

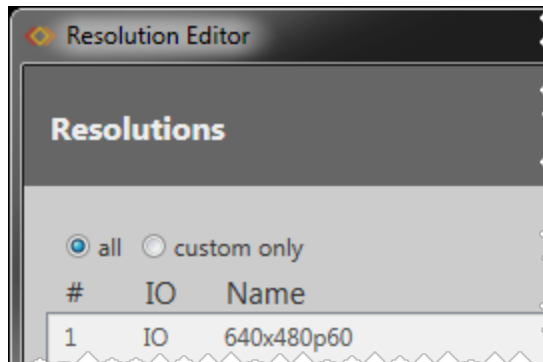
#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
1	IO	640x480p60	640	480	59.941	25.175	Copy
2	IO	640x480p72	640	480	72.810	31.500	Copy
3	IO	640x480p75	640	480	75.000	31.500	Copy
4	IO	640x480p85	640	480	85.008	36.000	Copy
5	IO	720x487i59.94	720	487	29.970	13.500	Copy
6	IO	720x480i59.94	720	480	29.970	13.500	Copy
7	IO	720x480p59.94	720	480	59.941	27.000	Copy
8	IO	720x576i50	720	576	25.000	13.500	Copy
9	IO	720x576p50	720	576	50.000	27.000	Copy
10	IO	800x600p56	800	600	56.250	36.000	Copy
11	IO	800x600p60	800	600	60.317	40.000	Copy
12	IO	800x600p72	800	600	72.188	50.000	Copy
13	IO	800x600p75	800	600	75.000	49.500	Copy
14	IO	800x600p85	800	600	85.062	56.250	Copy
15	IO	980x980p75	980	980	74.795	102.000	Copy
16	IO	1024x768p60	1024	768	60.004	65.000	Copy
17	IO	1024x768p70	1024	768	70.069	75.000	Copy
18	IO	1024x768p75	1024	768	75.029	78.750	Copy
19	IO	1024x768p85	1024	768	84.996	94.500	Copy
20	IO	1152x864p70gtrf	1152	864	70.000	96.768	Copy
21	IO	1152x864p75	1152	864	75.000	108.000	Copy
22	IO	1280x720p23.98	1280	720	23.976	74.176	Copy
23	IO	1280x720p24	1280	720	24.000	74.250	Copy
24	IO	1280x720p25	1280	720	25.000	74.250	Copy

Detailed Information

Name: 640x480p60
 Scan type: Progressive CEA ID: 1
 Pixel Clock: 25.175 MHz Aspect: 4:3

	Horizontal	Vertical
Total pixels:	800	525
Active pixels:	640	480
Front Porch (pixels):	16	10
Sync Pulse (pixels):	96	2
Back Porch (pixels):	48	33
Polarity:	Negative	Negative
Frequency:	31.469 kHz	59.941 Hz

By default the Resolution Editor shows all resolutions, both built-in and custom. Scroll to the bottom of the list or select the **Custom Only** radio button to see the Custom Resolutions:



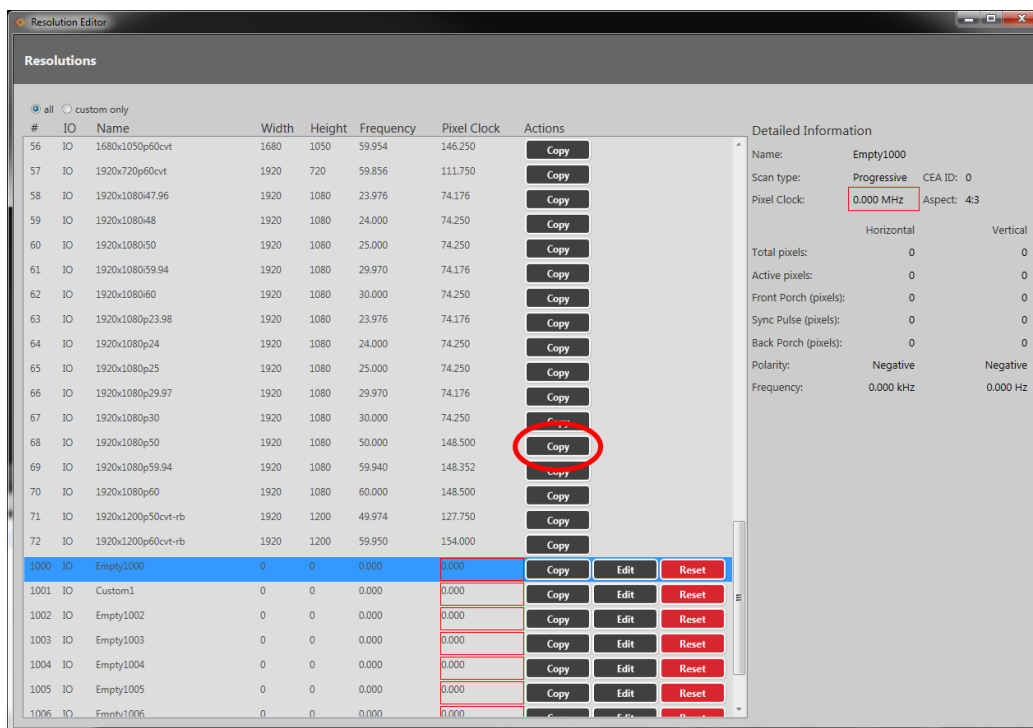
For each resolution, you can see the resolution number, **Name**, **Width**, **Height**, **Frequency**, and **Pixel Clock**. This information should be sufficient for you to identify the specific resolution you are looking for.

If you want more details of a given resolution, click on that line and the **Detailed Information** pane on the right will list all available properties of the resolution including the name of the resolution, the **Scan Type**, **Pixel Clock**, and both **Horizontal** and **Vertical** values for **Total pixels**, **Active pixels**, **Front** and **Back Porch**, **Sync Pulse**, **Polarity** and **Frequency**.

Creating a Custom Resolution From a Built-In Resolution

The simplest way to create a Custom Resolution is to base it on an existing resolution, and change only the parameters that vary.

1. Select the existing resolution that most closely matches your desired resolution and press the **Copy** button:



2. In the resulting Edit Resolution window, enter a meaningful name for your Custom Resolution and change the other fields as required. (If you are going to use your Custom Resolution with CORIOgrapher, be sure to read the notes regarding naming at "Editing Name Property from CORIOdiscover Resolution Editor" on page 240.)

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

Name: Empty1000

Scan type: Progressive CEA ID: 0

Pixel Clock (MHz): 0.000 Aspect: 4:3

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

For more information on the individual fields, see the individual topics in the rest of this section.

3. When you have finished configuring the fields, click the **Update** button and the new Custom Resolution will be placed in the next available (empty) Custom Resolution.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

Name: Custom1

Scan type: Interlaced CEA ID: 5

Pixel Clock (MHz): 74.250 Aspect: 16:9

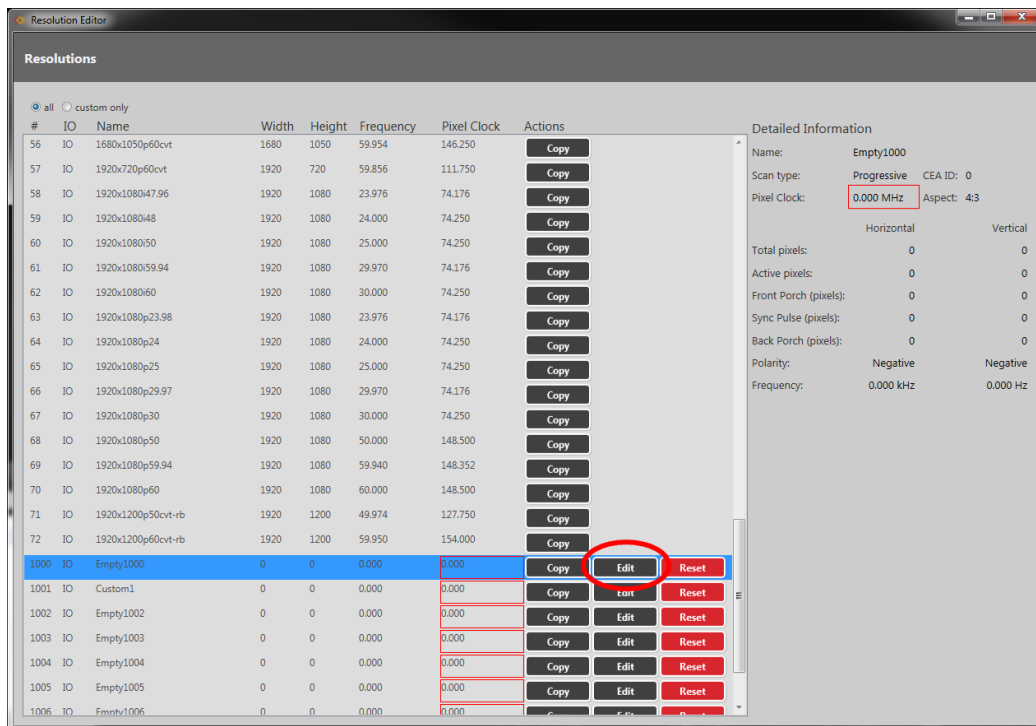
	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel

Creating a Custom Resolution From a Standard

If you want to create a Custom Resolution based on a video standard, such as CVT, follow these steps:

1. Select an empty Custom Resolution, and click the **Edit** button.



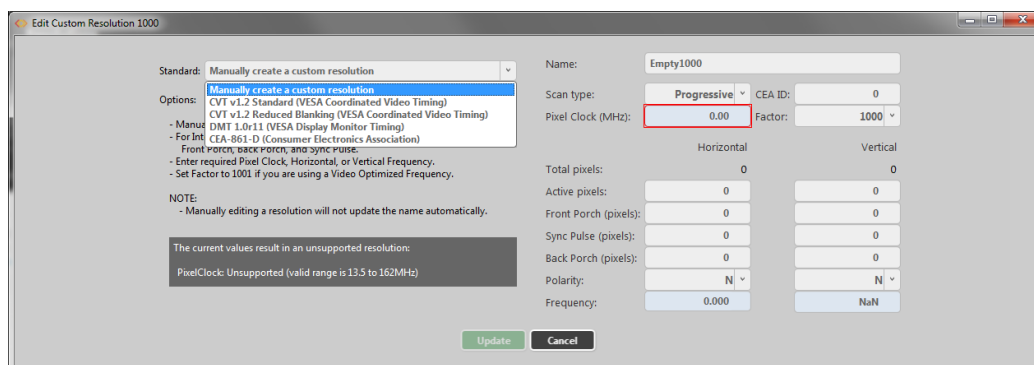
The screenshot displays the Resolution Editor interface. The main window contains a table of resolutions with the following columns: #, IO, Name, Width, Height, Frequency, Pixel Clock, and Actions. The row for 'Empty1000' is selected, and its 'Edit' button is circled in red. To the right, the 'Detailed Information' panel shows settings for 'Empty1000', including Scan type (Progressive), Pixel Clock (0.000 MHz), and Aspect (4:3).

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
56	IO	1680x1050p60cvt	1680	1050	59.954	146.250	Copy
57	IO	1920x720p60cvt	1920	720	59.856	111.750	Copy
58	IO	1920x1080i47.96	1920	1080	23.976	74.176	Copy
59	IO	1920x1080i48	1920	1080	24.000	74.250	Copy
60	IO	1920x1080i50	1920	1080	25.000	74.250	Copy
61	IO	1920x1080i59.94	1920	1080	29.970	74.176	Copy
62	IO	1920x1080i60	1920	1080	30.000	74.250	Copy
63	IO	1920x1080p23.98	1920	1080	23.976	74.176	Copy
64	IO	1920x1080p24	1920	1080	24.000	74.250	Copy
65	IO	1920x1080p25	1920	1080	25.000	74.250	Copy
66	IO	1920x1080p29.97	1920	1080	29.970	74.176	Copy
67	IO	1920x1080p30	1920	1080	30.000	74.250	Copy
68	IO	1920x1080p50	1920	1080	50.000	148.500	Copy
69	IO	1920x1080p59.94	1920	1080	59.940	148.352	Copy
70	IO	1920x1080p60	1920	1080	60.000	148.500	Copy
71	IO	1920x1200p50cvt-rb	1920	1200	49.974	127.750	Copy
72	IO	1920x1200p60cvt-rb	1920	1200	59.950	154.000	Copy
1000	IO	Empty1000	0	0	0.000	0.000	Copy Edit Reset
1001	IO	Custom1	0	0	0.000	0.000	Copy Edit Reset
1002	IO	Empty1002	0	0	0.000	0.000	Copy Edit Reset
1003	IO	Empty1003	0	0	0.000	0.000	Copy Edit Reset
1004	IO	Empty1004	0	0	0.000	0.000	Copy Edit Reset
1005	IO	Empty1005	0	0	0.000	0.000	Copy Edit Reset
1006	IO	Empty1006	0	0	0.000	0.000	Copy Edit Reset

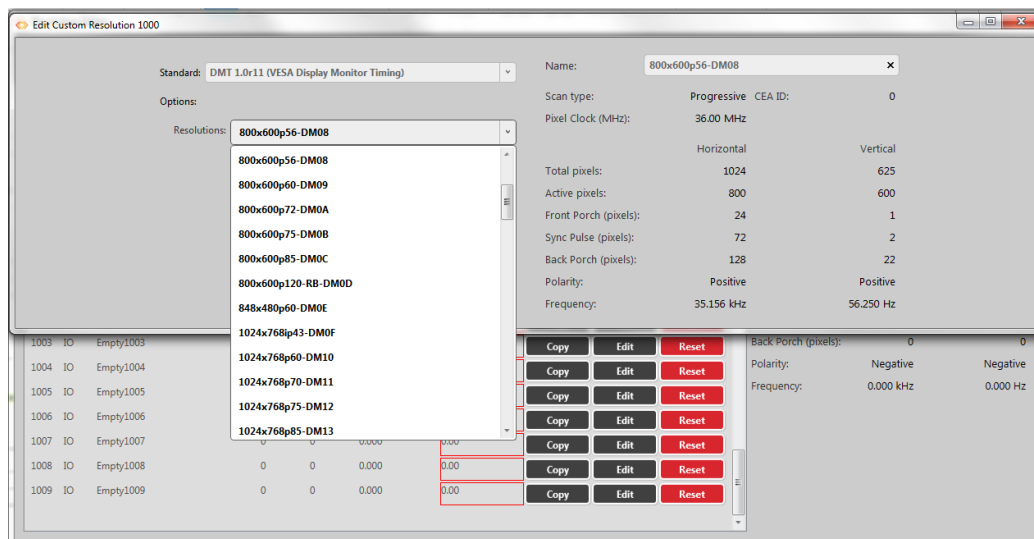
Detailed Information for Empty1000:

- Name: Empty1000
- Scan type: Progressive CEA ID: 0
- Pixel Clock: 0.000 MHz Aspect: 4:3
- Total pixels: Horizontal 0, Vertical 0
- Active pixels: Horizontal 0, Vertical 0
- Front Porch (pixels): Horizontal 0, Vertical 0
- Sync Pulse (pixels): Horizontal 0, Vertical 0
- Back Porch (pixels): Horizontal 0, Vertical 0
- Polarity: Negative Negative
- Frequency: 0.000 kHz 0.000 Hz

- In the resulting Edit Resolution window, choose the appropriate **Standard** from the drop-down list of options.

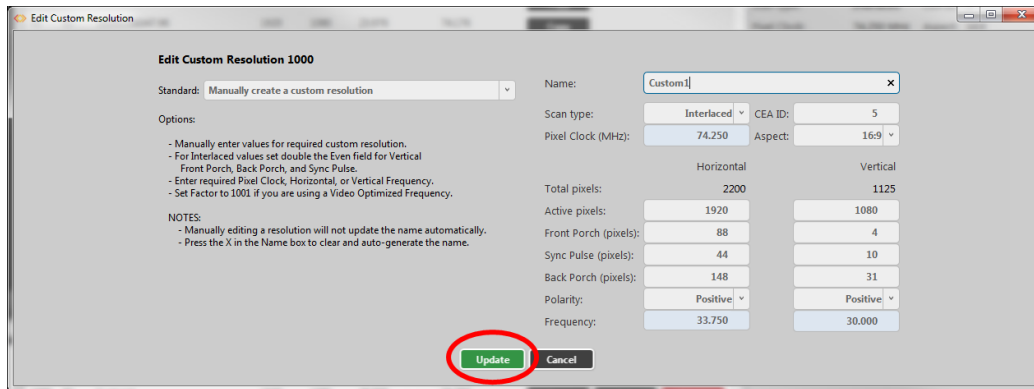


- Choose the appropriate Resolution from the drop-down list of options.



- Enter a meaningful name for your Custom Resolution and change the other fields as required. (If you are going to use your Custom Resolution with CORIOgrapher, be sure to read the notes regarding naming at "Editing Name Property from CORIOdiscover Resolution Editor" on page 240.) For more information on the individual fields, see elsewhere in this manual.

- When you have finished configuring the fields, click the **Update** button and the Custom Resolution will be saved in the Custom Resolution slot you chose in step 1.



Creating a Custom Resolution From Scratch

If you want to create a Custom Resolution that isn't based on a standard or an existing custom resolution, follow these steps.

1. Select an empty Custom Resolution, and click the **Edit** button.

The screenshot displays the Resolution Editor application. The main window is titled "Resolutions" and contains a table with columns: #, IO, Name, Width, Height, Frequency, Pixel Clock, and Actions. The row for "Empty1000" is highlighted in blue, and its "Edit" button is circled in red. To the right of the table is a "Detailed Information" panel for the selected resolution, showing fields for Name, Scan type, Pixel Clock, Aspect, Total pixels, Active pixels, Front Porch, Sync Pulse, Back Porch, Polarity, and Frequency.

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
56	IO	1680x1050p60cvt	1680	1050	59.954	146.250	Copy
57	IO	1920x720p60cvt	1920	720	59.856	111.750	Copy
58	IO	1920x1080i47.96	1920	1080	23.976	74.176	Copy
59	IO	1920x1080i48	1920	1080	24.000	74.250	Copy
60	IO	1920x1080i50	1920	1080	25.000	74.250	Copy
61	IO	1920x1080i59.94	1920	1080	29.970	74.176	Copy
62	IO	1920x1080i60	1920	1080	30.000	74.250	Copy
63	IO	1920x1080p23.98	1920	1080	23.976	74.176	Copy
64	IO	1920x1080p24	1920	1080	24.000	74.250	Copy
65	IO	1920x1080p25	1920	1080	25.000	74.250	Copy
66	IO	1920x1080p29.97	1920	1080	29.970	74.176	Copy
67	IO	1920x1080p30	1920	1080	30.000	74.250	Copy
68	IO	1920x1080p50	1920	1080	50.000	148.500	Copy
69	IO	1920x1080p59.94	1920	1080	59.940	148.352	Copy
70	IO	1920x1080p60	1920	1080	60.000	148.500	Copy
71	IO	1920x1200p50cvt-rb	1920	1200	49.974	127.750	Copy
72	IO	1920x1200p60cvt-rb	1920	1200	59.950	154.000	Copy
1000	IO	Empty1000	0	0	0.000	0.000	Copy Edit Reset
1001	IO	Custom1	0	0	0.000	0.000	Copy Edit Reset
1002	IO	Empty1002	0	0	0.000	0.000	Copy Edit Reset
1003	IO	Empty1003	0	0	0.000	0.000	Copy Edit Reset
1004	IO	Empty1004	0	0	0.000	0.000	Copy Edit Reset
1005	IO	Empty1005	0	0	0.000	0.000	Copy Edit Reset
1006	IO	Empty1006	0	0	0.000	0.000	Copy Edit Reset

Detailed Information for Empty1000:

- Name: Empty1000
- Scan type: Progressive CEA ID: 0
- Pixel Clock: 0.000 MHz Aspect: 4:3
- Total pixels: Horizontal 0, Vertical 0
- Active pixels: Horizontal 0, Vertical 0
- Front Porch (pixels): Horizontal 0, Vertical 0
- Sync Pulse (pixels): Horizontal 0, Vertical 0
- Back Porch (pixels): Horizontal 0, Vertical 0
- Polarity: Horizontal Negative, Vertical Negative
- Frequency: Horizontal 0.000 kHz, Vertical 0.000 Hz

2. In the resulting Edit Resolution window, be sure that **Manually create a custom resolution** is selected from the **Standard** drop-down list.

Standard: **Manually create a custom resolution**

Options:

- Manually create a custom resolution
- CVT v1.2 Standard (VESA Coordinated Video Timing)
- CVT v1.2 Reduced Blanking (VESA Coordinated Video Timing)
- Manuf DMT 1.0r11 (VESA Display Monitor Timing)
- For Int CEA-861-D (Consumer Electronics Association)
- Front Porch, Back Porch, and Sync Pulse:
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTE:

- Manually editing a resolution will not update the name automatically.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

Name: Empty1000

Scan type: Progressive CEA ID: 0

Pixel Clock (MHz): 0.00 Factor: 1000

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	0
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	N	N
Frequency:	0.000	NaN

Update Cancel

3. Enter a meaningful name for your Custom Resolution and change the other fields to match your requirements. (If you are going to use your Custom Resolution with CORIO-grapher, be sure to read the notes regarding naming at "Editing Name Property from CORIODiscover Resolution Editor" on page 240.)

Standard: **Manually create a custom resolution**

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

Name: Empty1000 X

Scan type: Progressive CEA ID: 0

Pixel Clock (MHz): 0.000 Aspect: 4:3

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

For more information on the individual fields, see elsewhere in this manual. Note that some fields must be updated to appropriate values before you can save the resolution.

- When you have finished configuring the fields, click the **Update** button and the Custom Resolution will be saved in the Custom Resolution slot you chose in step 1.

The screenshot shows the 'Edit Custom Resolution' dialog box. The title bar reads 'Edit Custom Resolution'. The main title is 'Edit Custom Resolution 1000'. The 'Standard' dropdown is set to 'Manually create a custom resolution'. The 'Name' field contains 'Custom1'. The 'Scan type' is 'Interlaced', 'CEA ID' is '5', and 'Pixel Clock (MHz)' is '74.250'. The 'Aspect' is '16:9'. The 'Horizontal' and 'Vertical' columns show the following values:

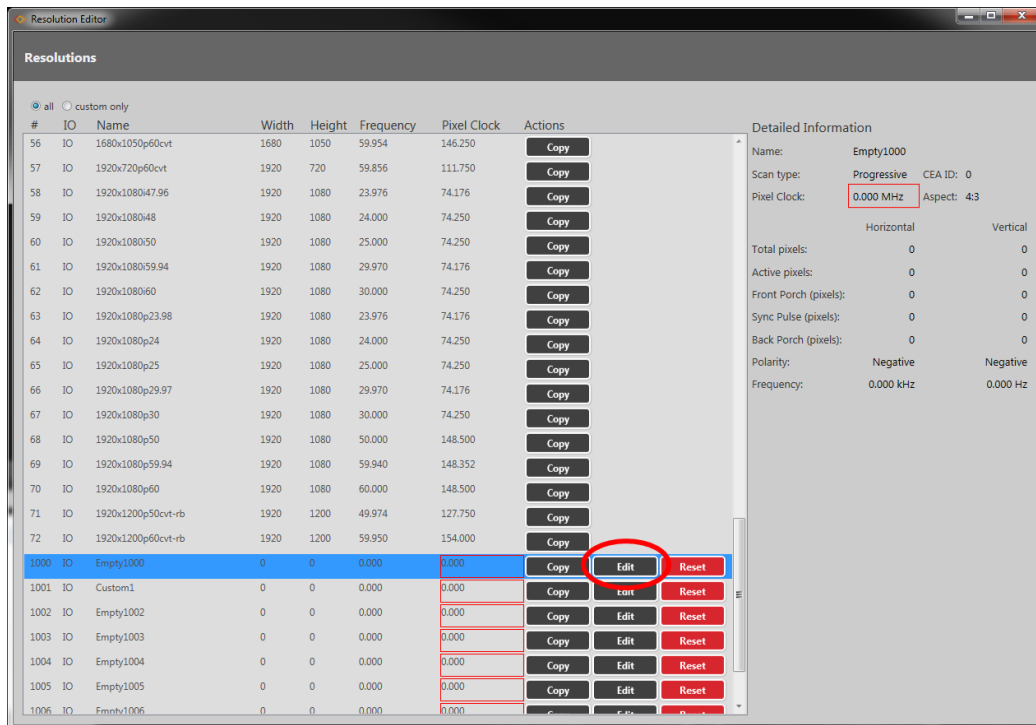
	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

The 'Update' button is circled in red. The 'Cancel' button is also visible.

Editing an existing Custom Resolution

To edit an existing Custom Resolution:

1. Select the Custom Resolution and press the **Edit** button:



2. In the resulting Edit Resolution window, change the fields as required. (If you are going to use your Custom Resolution with CORIOgrapher, be sure to read the notes regarding naming at "Editing Name Property from CORIODiscover Resolution Editor" on page 240.)

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Empty1000

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

Scan type: Progressive CEA ID: 0

Pixel Clock (MHz): 0.000 Aspect: 4:3

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

For more information on the individual fields, see elsewhere in this manual.

- When you have finished configuring the fields, click the **Update** button and the Custom Resolution will be saved in the same Custom Resolution slot you chose in step 1.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Custom1

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

Scan type: Interlaced CEA ID: 5

Pixel Clock (MHz): 74.250 Aspect: 16:9

	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel



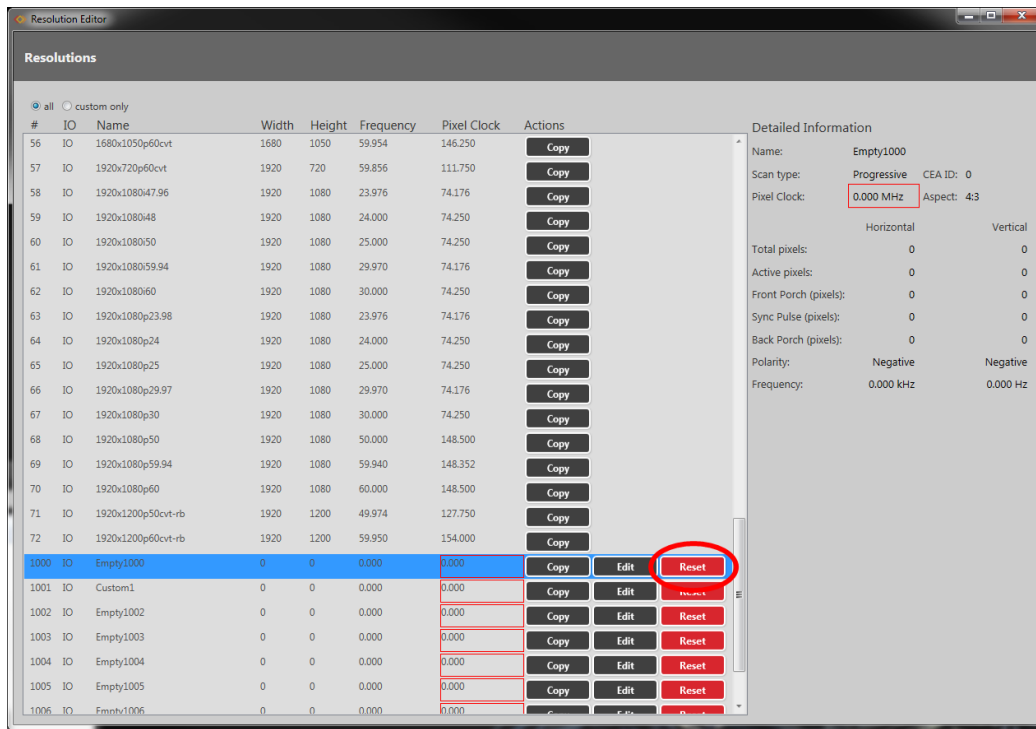
Note: If the Custom Resolution is active on an output, your changes will take effect immediately after you press the **Update** button, with the exception of the **Name**. If you change the **Name** attribute of a Custom Resolution that you have already set to an output, the output will revert to the default built-in resolution for that output. To continue using the same Custom Resolution with that output, re-apply it to the output.

Clearing or Deleting an existing Custom Resolution

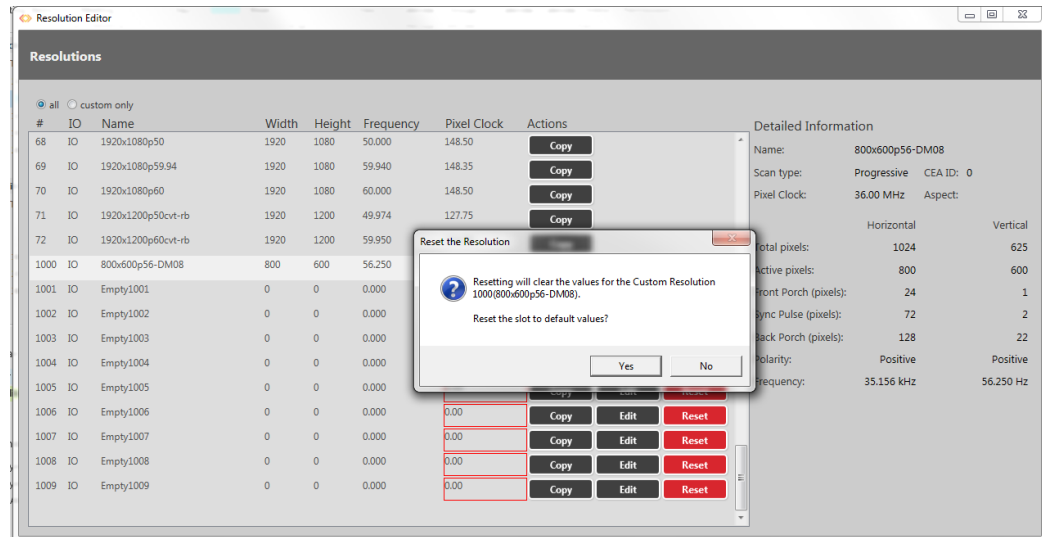
Custom Resolutions can only be modified; they cannot be created or deleted. If you wish to remove saved details, **Reset** the Custom Resolution to default settings. This is equivalent to deleting, but the slot is still available for future use.

To clear a Custom Resolution:


1. Select the Custom Resolution and press the **Reset** button.



- A pop-up window appears, asking you to verify that you want to erase all the data for this resolution. Click **Yes**, if you do wish to clear the Custom Resolution.



- In the Resolution Editor, that Custom Resolution now appears empty, with values reset to default.

 **Note:** If you clear a Custom Resolution that you have already set to an output, the output will revert to the default built-in resolution for that output.

Listing Resolution Properties from CORIOdiscover Resolution Editor

The **Detailed Information** pane is on the far right of the Resolution Editor window. This pane displays information about the highlighted resolution.

Built-in resolution details are read-only; custom resolution details can be edited.

The screenshot shows the Resolution Editor window with a list of resolutions and a detailed information pane for the selected resolution (640x480p60).

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
1	IO	640x480p60	640	480	59.941	25.175	Copy
2	IO	640x480p72	640	480	72.810	31.500	Copy
3	IO	640x480p75	640	480	75.000	31.500	Copy
4	IO	640x480p85	640	480	85.008	36.000	Copy
5	IO	720x48759.94	720	487	29.970	13.500	Copy
6	IO	720x48059.94	720	480	29.970	13.500	Copy
7	IO	720x480p59.94	720	480	59.941	27.000	Copy
8	IO	720x576i50	720	576	25.000	13.500	Copy
9	IO	720x576p50	720	576	50.000	27.000	Copy
10	IO	800x600p56	800	600	56.250	36.000	Copy
11	IO	800x600p60	800	600	60.317	40.000	Copy
12	IO	800x600p72	800	600	72.188	50.000	Copy
13	IO	800x600p75	800	600	75.000	49.500	Copy
14	IO	800x600p85	800	600	85.062	56.250	Copy
15	IO	980x980p75	980	980	74.795	102.000	Copy
16	IO	1024x768p60	1024	768	60.004	65.000	Copy
17	IO	1024x768p70	1024	768	70.069	75.000	Copy
18	IO	1024x768p75	1024	768	75.029	78.750	Copy
19	IO	1024x768p85	1024	768	84.996	94.500	Copy
20	IO	1152x864p70gtf	1152	864	70.000	96.768	Copy
21	IO	1152x864p75	1152	864	75.000	108.000	Copy
22	IO	1280x720p23.98	1280	720	23.976	74.176	Copy
23	IO	1280x720p24	1280	720	24.000	74.250	Copy
24	IO	1280x720p25	1280	720	25.000	74.250	Copy

Detailed Information

Name: 640x480p60
 Scan type: Progressive CEA ID: 1
 Pixel Clock: 25.175 MHz Aspect: 4:3

	Horizontal	Vertical
Total pixels:	800	525
Active pixels:	640	480
Front Porch (pixels):	16	10
Sync Pulse (pixels):	96	2
Back Porch (pixels):	48	33
Polarity:	Negative	Negative
Frequency:	31.469 kHz	59.941 Hz

In this pane, you can view information including the name of the resolution, the **Scan Type**, **Pixel Clock**, and both **Horizontal** and **Vertical** values for **Total pixels**, **Active pixels**, **Front** and **Back Porch**, **Sync Pulse**, **Polarity** and **Frequency**.

Editing Resolution Properties from CORIOdiscover Resolution Editor

Various details specific to a resolution are saved on a per-resolution basis. You can edit settings for Custom Resolutions. Each property is covered separately.

Editing Name Property from CORIOdiscover Resolution Editor

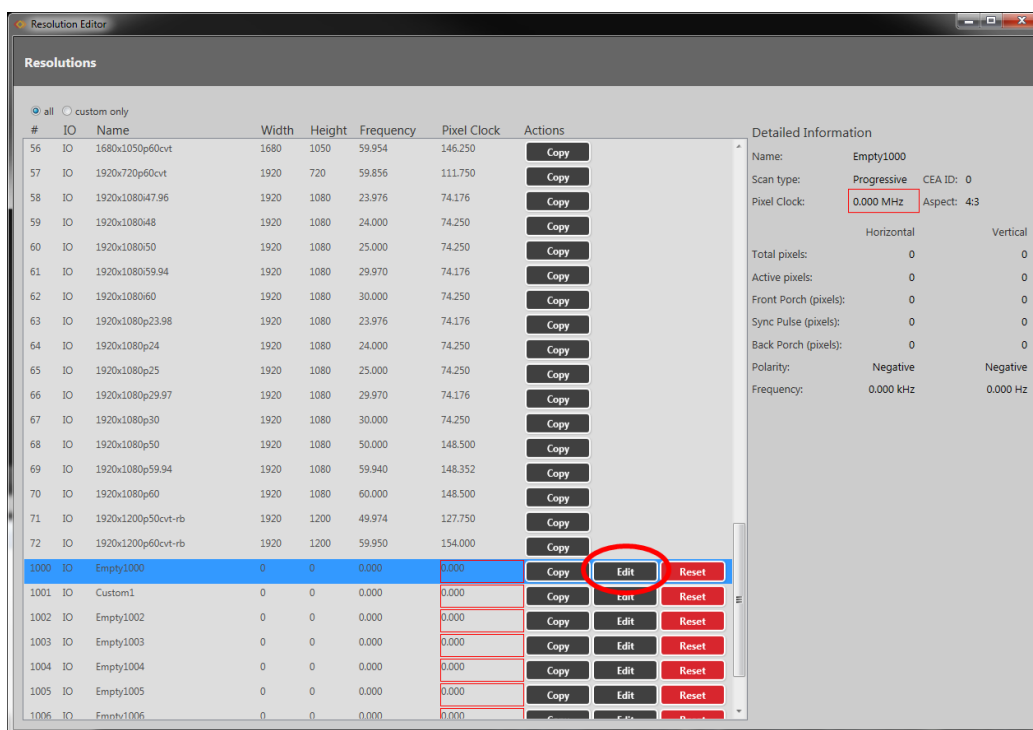
Learn how to set a name for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

Lists the user-readable name for this resolution. Set up the name as something meaningful for you, within the limitations of the permissible characters. (See Note below.)

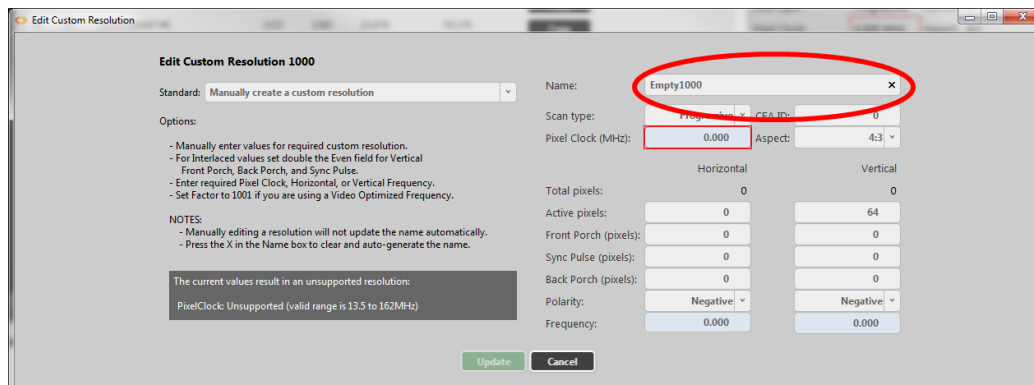
Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to rename.

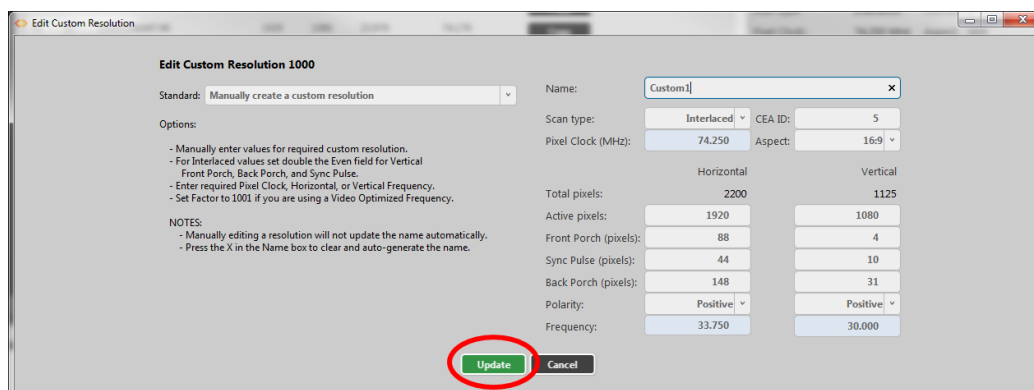


2. In the new window, you can edit various properties of the Custom Resolution. In the top right corner, you can edit the **Name** field. Be sure to read the notes below regarding valid

characters.



- When you have modified the **Name** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.



Default

The default **Name** is the string “EmptyNNNN” where ‘NNNN’ is the number of the Custom Resolution. Note that Resolution1000 is “Empty1000”, Resolution1001 is “Empty1001”, Resolution1009 is “Empty1009” and so forth.

Notes

The **Name** attribute has the following limitations:

- must be no more than 23 characters
- only valid printable ASCII characters may be used
- must have no spaces (underscore is valid)

The system does not check for duplicate names - if more than one Custom Resolution has the same name, when you set a Custom Resolution of that name to an output, unexpected behavior may result.

If you change the **Name** attribute of a Custom Resolution that you have already set to an output, the output will revert to the default built-in resolution for that output. To continue using the same Custom Resolution with that output, re-apply it to the output.

It is possible to set a Custom Resolution that has not been configured to an output. This is intentional.

If you wish to use a Custom Resolution with CORIOgrapher the **Name** must conform to the following format:

[width]x[height][scantype][rate][optional]

where:

[width]	width in pixels	num
[height]	height in pixels	num
x	the letter x	x
[scantype]	either i for interlaced or p for progressive.	i or p
[rate]	the frame rate (this must be at least one character and may contain a period if relevant)	num
[optional]	any optional text	null or string

•

For example, the following are valid **Name** formats for use with CORIOgrapher:

- 1280x720i40055D
- 1280x720p6test
- 1280x720p59.94
- 1280x720i50
- 280x72i30



Caution: If you use CORIOgrapher with a **Name** that does not conform to the format described above, you may experience unexpected consequences.

Editing Aspect Ratio Property from CORIOdiscover Resolution Editor

Learn how to set the **Aspect** ratio for a Custom Resolution via the Resolution Editor in CORIOdiscover. This is used on the CORIOmaster and CORIOmaster mini to assist in signal conversion when an input and output have different aspect ratio.

Description

Lists the **Aspect** ratio for this Custom Resolution in the form width:height (in units of equal size).

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.

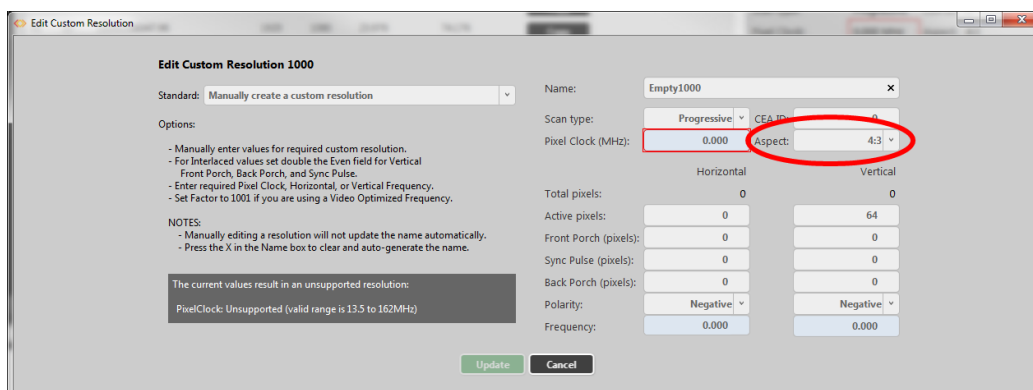
The screenshot shows the Resolution Editor window with a table of resolutions and a detailed information panel on the right. The resolution 'Empty1000' is selected, and its 'Edit' button is circled in red.

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
56	IO	1680x1050p60cvt	1680	1050	59.954	146.250	Copy
57	IO	1920x720p60cvt	1920	720	59.856	111.750	Copy
58	IO	1920x1080i47.96	1920	1080	23.976	74.176	Copy
59	IO	1920x1080i48	1920	1080	24.000	74.250	Copy
60	IO	1920x1080i50	1920	1080	25.000	74.250	Copy
61	IO	1920x1080i59.94	1920	1080	29.970	74.176	Copy
62	IO	1920x1080i60	1920	1080	30.000	74.250	Copy
63	IO	1920x1080p23.98	1920	1080	23.976	74.176	Copy
64	IO	1920x1080p24	1920	1080	24.000	74.250	Copy
65	IO	1920x1080p25	1920	1080	25.000	74.250	Copy
66	IO	1920x1080p29.97	1920	1080	29.970	74.176	Copy
67	IO	1920x1080p30	1920	1080	30.000	74.250	Copy
68	IO	1920x1080p50	1920	1080	50.000	148.500	Copy
69	IO	1920x1080p59.94	1920	1080	59.940	148.352	Copy
70	IO	1920x1080p60	1920	1080	60.000	148.500	Copy
71	IO	1920x1200p50cvt-rb	1920	1200	49.974	127.750	Copy
72	IO	1920x1200p60cvt-rb	1920	1200	59.950	154.000	Copy
1000	IO	Empty1000	0	0	0.000	0.000	Copy Edit Reset
1001	IO	Custom1	0	0	0.000	0.000	Copy Edit Reset
1002	IO	Empty1002	0	0	0.000	0.000	Copy Edit Reset
1003	IO	Empty1003	0	0	0.000	0.000	Copy Edit Reset
1004	IO	Empty1004	0	0	0.000	0.000	Copy Edit Reset
1005	IO	Empty1005	0	0	0.000	0.000	Copy Edit Reset
1006	IO	Empty1006	0	0	0.000	0.000	Copy Edit Reset

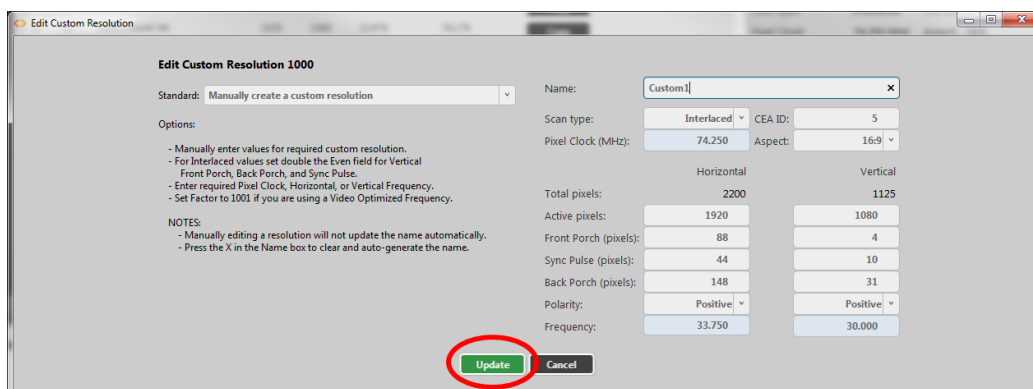
Detailed Information

Name: Empty1000
 Scan type: Progressive CEA ID: 0
 Pixel Clock: 0.000 MHz Aspect: 4:3
 Horizontal Vertical
 Total pixels: 0 0
 Active pixels: 0 0
 Front Porch (pixels): 0 0
 Sync Pulse (pixels): 0 0
 Back Porch (pixels): 0 0
 Polarity: Negative Negative
 Frequency: 0.000 kHz 0.000 Hz

- In the new window, you can edit various properties of the Custom Resolution. In the top right corner, you can choose an option from the **Aspect** drop-down menu.



- When you have modified the **Aspect** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.



Default

4:3

Notes

Valid available **Aspect** ratios are:

- 16:9
- 4:3
- 5:4
- 16:10

- 5:3
- 1:1
- 16:6

The system cannot accept any other aspect ratios.

Aspect ratios are used on the CORIOmaster and CORIOmaster mini only, not on CORIOmaster or CORIOmaster mini.

Editing Pixel Clock Property from CORIOdiscover Resolution Editor

Learn how to set the **Pixel Clock** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

The **Pixel Clock** value is the speed of the **Pixel Clock** in pixels per second.

The minimum and maximum values are dependent on the following:

$$p = h * v * f$$

where:

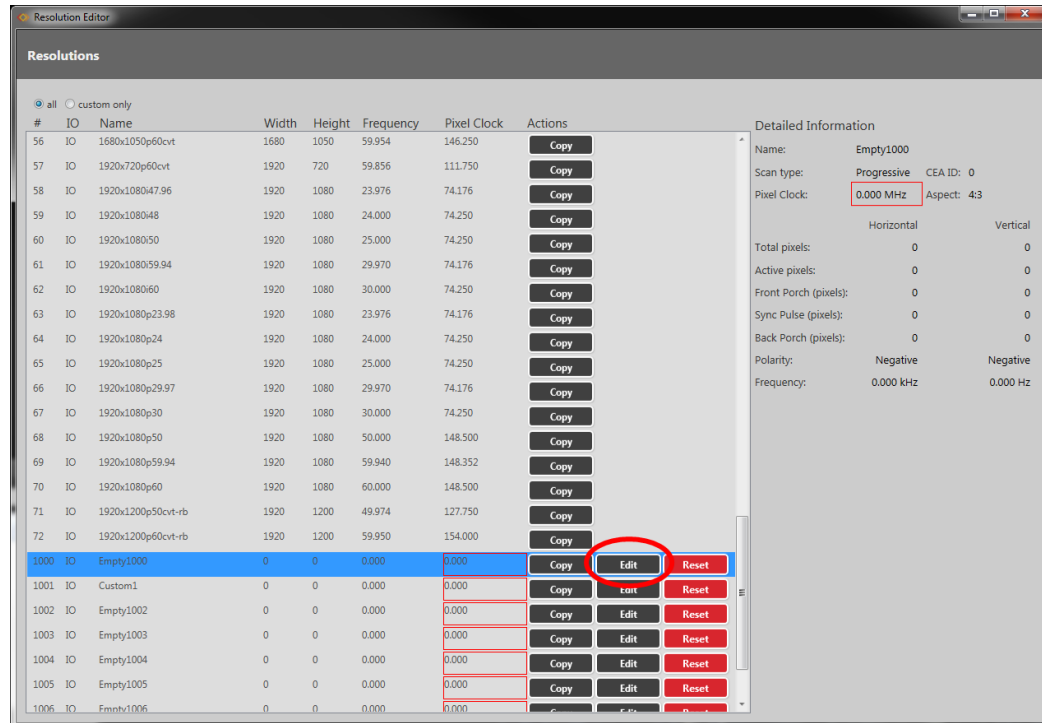
p	Pixels per second
h	Horizontal total pixels
v	Vertical total pixels
f	Frame rate in frames per second

For example, for 1920x1080p60, h=2200, v=1125, and f=60. This gives $p = 2200 * 1125 * 60 = 148.5\text{MHz}$

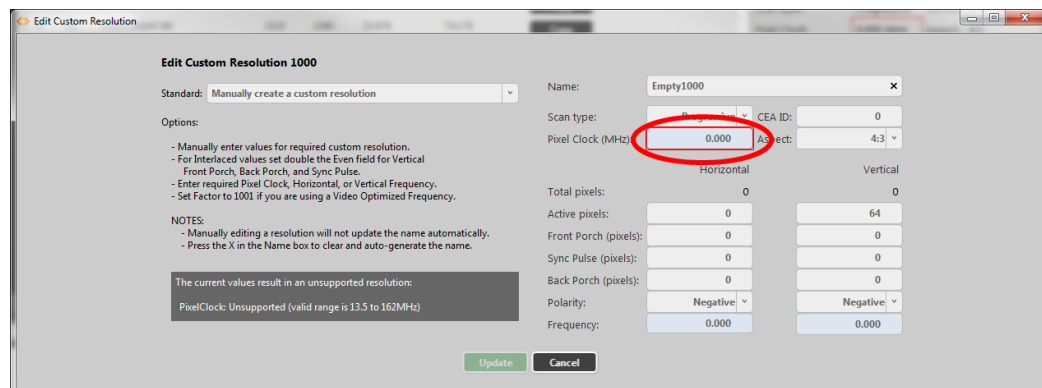
(Note that h and v are TOTAL pixels, not visible pixels - these numbers are greater than the visible resolution.)

Instructions

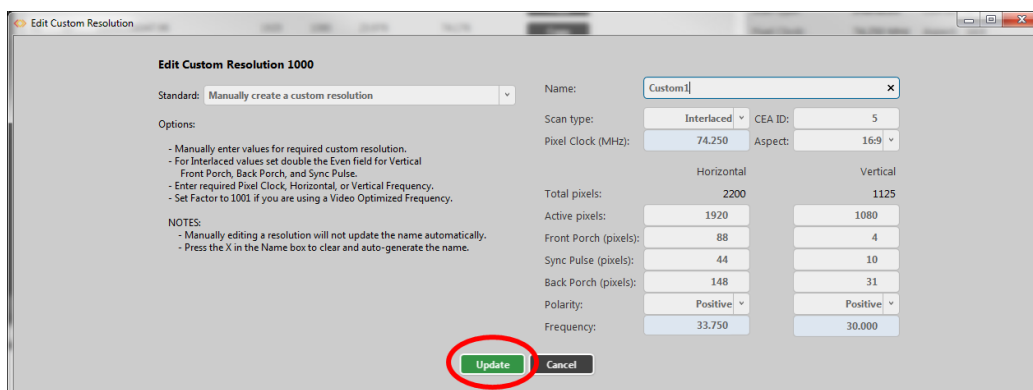
1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.



- In the new window, you can edit various properties of the Custom Resolution. In the upper right section, you can type a number into the **Pixel Clock** option.



3. When you have modified the **Aspect** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.



Default

0

(You cannot save a new Custom Resolution until the default value has been changed to a number in the valid range.)

Notes

The valid range for the **Pixel Clock** is 13.5MHz to 162MHz. As the value in pixels is a function of resolution (including frame rate), the minimum and maximum value in **Pixel Clock** varies with the resolution.

For example:

The minimum **Pixel Clock** at 640x480p60 is $800 * 525 * 59.94 = 25.175\text{MHz}$ (Note that p60 is nomenclature - the rate is actually 59.94MHz)

The maximum **Pixel Clock** at 1600x1200p60 is $2160 * 1250 * 60 = 162\text{MHz}$

To calculate the **Vertical Front Porch**, **Vertical Sync Pulse** and **Vertical Back Porch** for an interlaced resolution, double the value of the even field. Interlacing standards are designed this way in order to present the values in a similar format to Progressive values.

In the CORIOdiscover Resolution Editor, the **Horizontal Frequency** and **Vertical Frequency** read-only fields are derived from the **Pixel Clock** value.

Editing Scan type Property from CORIOdiscover Resolution Editor

Learn how to set the **Scan type** for a Custom Resolution via the Resolution Editor in CORIOdiscover as either **Interlaced** or **Progressive**.

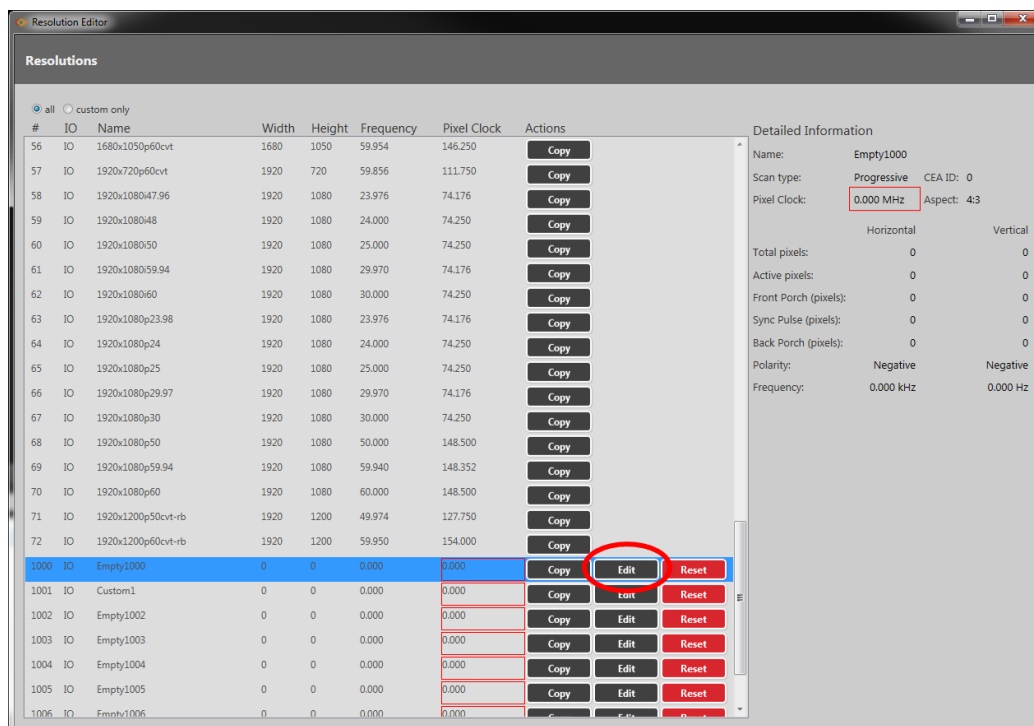
Description

The **Scan type** state of this Custom Resolution has two options:

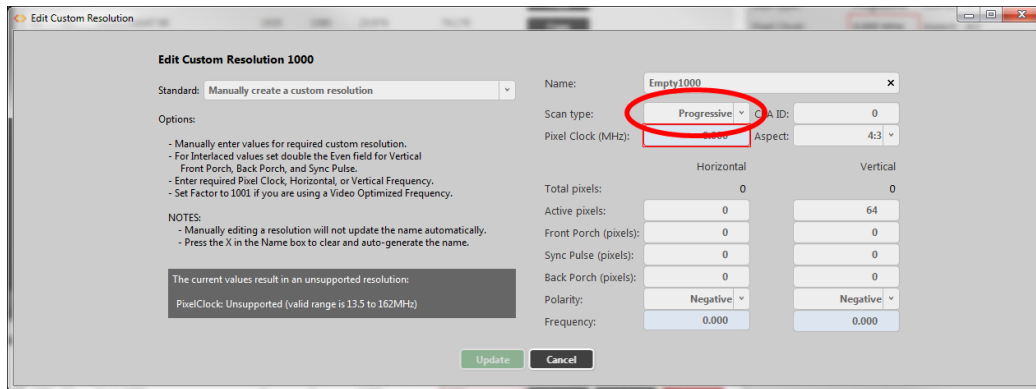
- p Progressive scan mode
- i Interlaced scan mode

Instructions

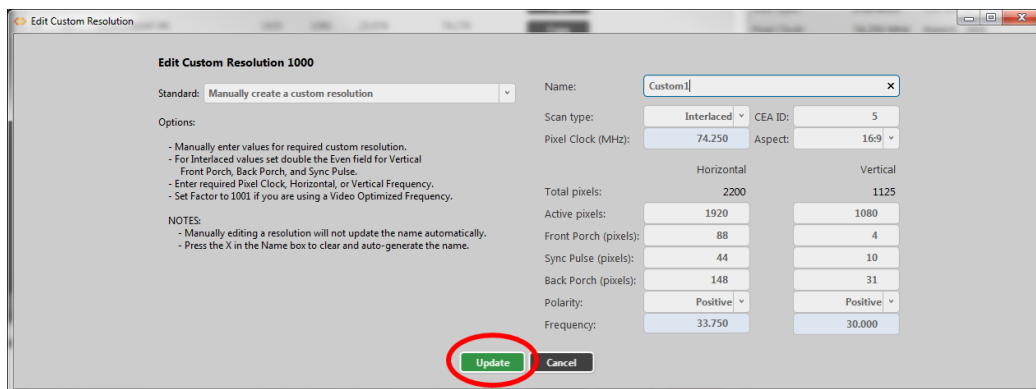
- From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.



- In the new window, you can edit various properties of the Custom Resolution. In the top right corner, you can choose an option from the **Scan type** drop-down menu.



- When you have modified the **Scan type** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.



Default

Progressive (p)

Notes

Only Progressive (p) or interlaced (i) are valid options.

Editing Horizontal Active Pixels Property from CORIOdiscover Resolution Editor

Learn how to set the **Horizontal Active pixels** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

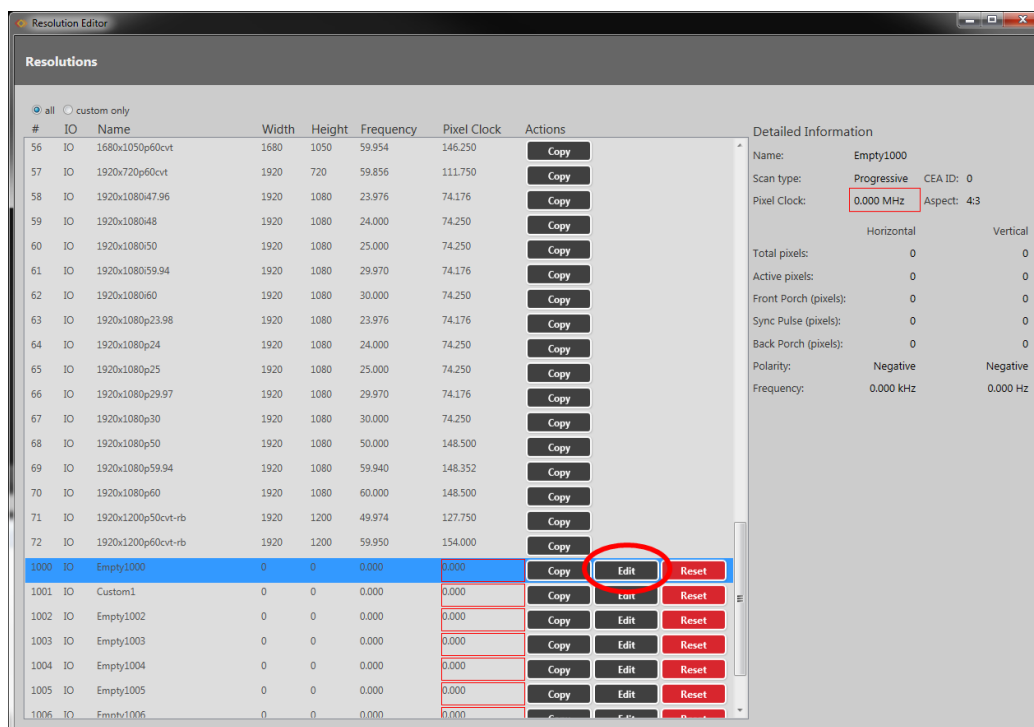
Description

The **Horizontal Active** video is the width of the displayed image in pixels.

For example, for a Custom Resolution of 1024x768 this value would be 1024.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.



2. In the new window, you can edit various properties of the Custom Resolution. In the left column of the right-hand section, you can type a number into the **Active pixels** field under

the **Horizontal** heading.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Empty1000

Scan type: Progressive CEA ID: 0

Pixel Clock (MHz): 0.000 Aspect: 4:3

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

- When you have modified the **Active pixels** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Custom1

Scan type: Interlaced CEA ID: 5

Pixel Clock (MHz): 74.250 Aspect: 16:9

	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel

Default

0

Notes

The valid range of values is 64 to 1920.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Active pixels**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Active pixels** changes.

Editing Horizontal Front Porch Property from CORIOdiscover Resolution Editor

Learn how to set the **Horizontal Front Porch** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

The **Horizontal Front Porch** is the gap between the end of the Active Video and the start of the **Horizontal Sync Pulse**, in pixels.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.

The screenshot shows the Resolution Editor window with a table of resolutions and a detailed information panel on the right. The 'Empty1000' resolution is selected, and its 'Edit' button is circled in red. The detailed information panel shows the 'Pixel Clock' as 0.000 MHz, which is also highlighted with a red box.

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
56	IO	1680x1050p60cvt	1680	1050	59.954	146.250	Copy
57	IO	1920x720p60cvt	1920	720	59.856	111.750	Copy
58	IO	1920x1080i47.96	1920	1080	23.976	74.176	Copy
59	IO	1920x1080i48	1920	1080	24.000	74.250	Copy
60	IO	1920x1080i50	1920	1080	25.000	74.250	Copy
61	IO	1920x1080i59.94	1920	1080	29.970	74.176	Copy
62	IO	1920x1080i60	1920	1080	30.000	74.250	Copy
63	IO	1920x1080p23.98	1920	1080	23.976	74.176	Copy
64	IO	1920x1080p24	1920	1080	24.000	74.250	Copy
65	IO	1920x1080p25	1920	1080	25.000	74.250	Copy
66	IO	1920x1080p29.97	1920	1080	29.970	74.176	Copy
67	IO	1920x1080p30	1920	1080	30.000	74.250	Copy
68	IO	1920x1080p50	1920	1080	50.000	148.500	Copy
69	IO	1920x1080p59.94	1920	1080	59.940	148.352	Copy
70	IO	1920x1080p60	1920	1080	60.000	148.500	Copy
71	IO	1920x1200p50cvt-rb	1920	1200	49.974	127.750	Copy
72	IO	1920x1200p60cvt-rb	1920	1200	59.950	154.000	Copy
1000	IO	Empty1000	0	0	0.000	0.000	Copy Edit Reset
1001	IO	Custom1	0	0	0.000	0.000	Copy Edit Reset
1002	IO	Empty1002	0	0	0.000	0.000	Copy Edit Reset
1003	IO	Empty1003	0	0	0.000	0.000	Copy Edit Reset
1004	IO	Empty1004	0	0	0.000	0.000	Copy Edit Reset
1005	IO	Empty1005	0	0	0.000	0.000	Copy Edit Reset
1006	IO	Empty1006	0	0	0.000	0.000	Copy Edit Reset

Detailed Information for Empty1000:

- Name: Empty1000
- Scan type: Progressive CEA ID: 0
- Pixel Clock: 0.000 MHz Aspect: 4:3
- Total pixels: Horizontal 0, Vertical 0
- Active pixels: Horizontal 0, Vertical 0
- Front Porch (pixels): Horizontal 0, Vertical 0
- Sync Pulse (pixels): Horizontal 0, Vertical 0
- Back Porch (pixels): Horizontal 0, Vertical 0
- Polarity: Horizontal Negative, Vertical Negative
- Frequency: Horizontal 0.000 kHz, Vertical 0.000 Hz

2. In the new window, you can edit various properties of the Custom Resolution. In the left column of the right-hand section, you can type a number into the **Front Porch (pixels)**

field under the **Horizontal** heading.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Empty1000

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

Pixel Clock (MHz): 0.000

Scan type: Progressive

CEA ID: 0

Aspect: 4:3

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

- When you have modified the **Front Porch** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Custom1

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

Pixel Clock (MHz): 74.250

Scan type: Interlaced

CEA ID: 5

Aspect: 16:9

	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel

Default

0

Notes

The valid range of values is 1 to 2000.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Front Porch**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Front Porch** changes.

Editing Horizontal Sync Pulse Property from CORIOdiscover Resolution Editor

Learn how to set the **Horizontal Sync Pulse** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

The **Horizontal Sync Pulse** identifies the start of each row of pixels (line of video) in the Custom Resolution.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.

The screenshot shows the Resolution Editor window with a table of resolutions and a detailed information panel on the right. The resolution 'Empty1000' is selected, and its 'Edit' button is circled in red. The detailed information panel shows the 'Pixel Clock' field set to '0.000 MHz'.

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
56	IO	1680x1050p60cvt	1680	1050	59.954	146.250	Copy
57	IO	1920x720p60cvt	1920	720	59.856	111.750	Copy
58	IO	1920x1080i47.96	1920	1080	23.976	74.176	Copy
59	IO	1920x1080i48	1920	1080	24.000	74.250	Copy
60	IO	1920x1080i50	1920	1080	25.000	74.250	Copy
61	IO	1920x1080i59.94	1920	1080	29.970	74.176	Copy
62	IO	1920x1080i60	1920	1080	30.000	74.250	Copy
63	IO	1920x1080p23.98	1920	1080	23.976	74.176	Copy
64	IO	1920x1080p24	1920	1080	24.000	74.250	Copy
65	IO	1920x1080p25	1920	1080	25.000	74.250	Copy
66	IO	1920x1080p29.97	1920	1080	29.970	74.176	Copy
67	IO	1920x1080p30	1920	1080	30.000	74.250	Copy
68	IO	1920x1080p50	1920	1080	50.000	148.500	Copy
69	IO	1920x1080p59.94	1920	1080	59.940	148.352	Copy
70	IO	1920x1080p60	1920	1080	60.000	148.500	Copy
71	IO	1920x1200p50cvt-rb	1920	1200	49.974	127.750	Copy
72	IO	1920x1200p60cvt-rb	1920	1200	59.950	154.000	Copy
1000	IO	Empty1000	0	0	0.000	0.000	Copy Edit Reset
1001	IO	Custom1	0	0	0.000	0.000	Copy Edit Reset
1002	IO	Empty1002	0	0	0.000	0.000	Copy Edit Reset
1003	IO	Empty1003	0	0	0.000	0.000	Copy Edit Reset
1004	IO	Empty1004	0	0	0.000	0.000	Copy Edit Reset
1005	IO	Empty1005	0	0	0.000	0.000	Copy Edit Reset
1006	IO	Empty1006	0	0	0.000	0.000	Copy Edit Reset

Detailed Information for Empty1000:

- Name: Empty1000
- Scan type: Progressive CEA ID: 0
- Pixel Clock: 0.000 MHz Aspect: 4:3
- Total pixels: Horizontal 0, Vertical 0
- Active pixels: Horizontal 0, Vertical 0
- Front Porch (pixels): Horizontal 0, Vertical 0
- Sync Pulse (pixels): Horizontal 0, Vertical 0
- Back Porch (pixels): Horizontal 0, Vertical 0
- Polarity: Horizontal Negative, Vertical Negative
- Frequency: Horizontal 0.000 kHz, Vertical 0.000 Hz

2. In the new window, you can edit various properties of the Custom Resolution. In the left column of the right-hand section, you can type a number into the **Sync Pulse (pixels)** field

under the **Horizontal** heading.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Empty1000

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

Pixel Clock (MHz): 0.000

Scan type: Progressive

CEA ID: 0

Aspect: 4:3

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

- When you have modified the **Sync Pulse** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Custom1

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

Pixel Clock (MHz): 74.250

Scan type: Interlaced

CEA ID: 5

Aspect: 16:9

	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel

Default

0

Notes

The valid range of values is 8 to 500.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Sync Pulse**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Sync Pulse** changes.

Editing Horizontal Back Porch Property from CORIOdiscover Resolution Editor

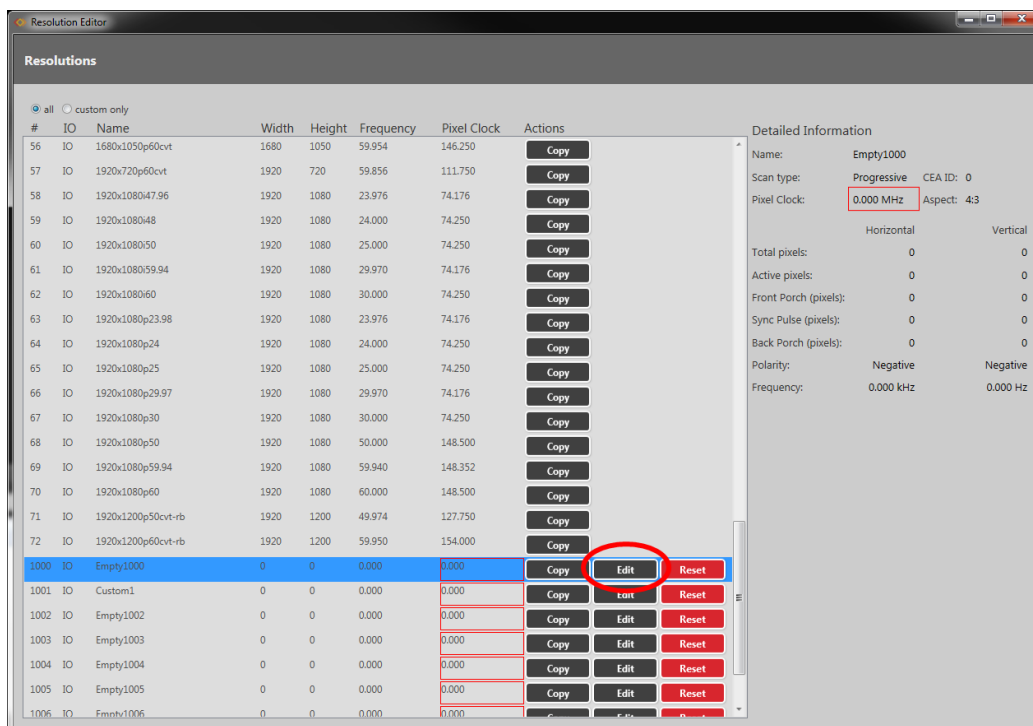
Learn how to set the timing interval for the **Horizontal Back Porch** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

The **Horizontal Back Porch** is the gap between the end of the **Horizontal Sync Pulse** and the beginning of the Active Video, in pixels.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.



2. In the new window, you can edit various properties of the Custom Resolution. In the left column of the right-hand section, you can type a number into the **Back Porch (pixels)**

field under the **Horizontal** heading.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Empty1000

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

Pixel Clock (MHz): 0.000 Aspect: 4:3

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

- When you have modified the **Back Porch** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Custom1

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

Pixel Clock (MHz): 74.250 Aspect: 16:9

	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel

Default

0

Notes

The valid range of values is 1 to 2000.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Back Porch**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Back Porch** changes.

Editing Horizontal Sync Polarity Property from CORIOdiscover Resolution Editor

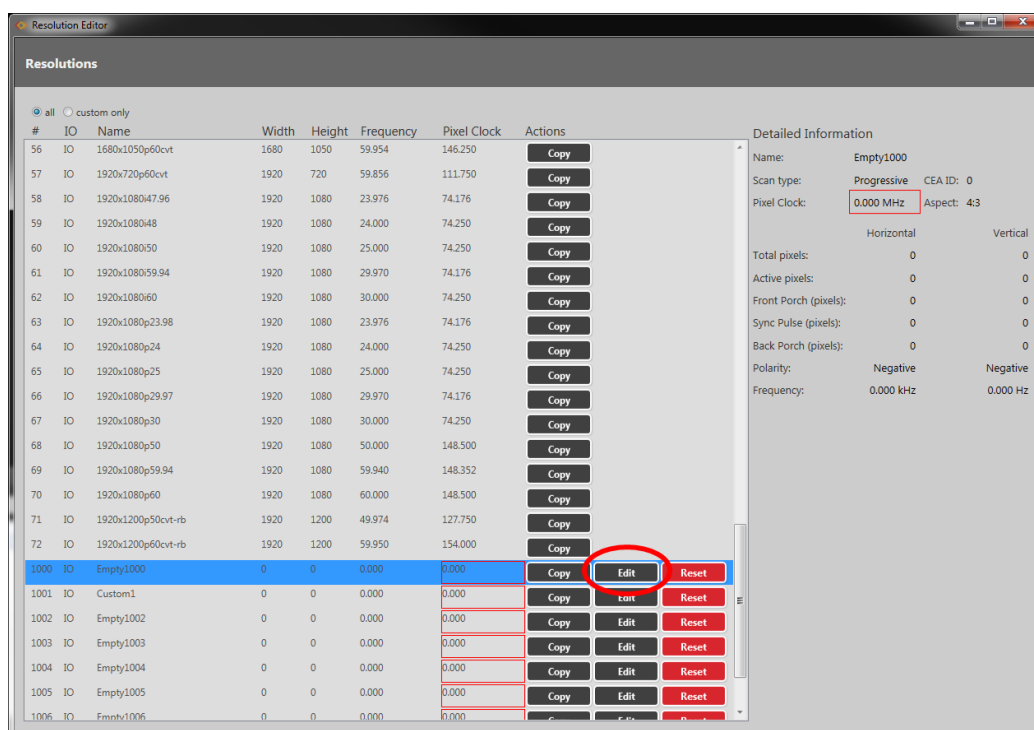
Learn how to set the **Horizontal Synchronization Polarity** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

The **Horizontal Sync Pulse** is a single short pulse which identifies the start of each row of pixels (line of video) in the Custom Resolution. It can be either **Positive** or **Negative**. This value is the **Horizontal Sync Polarity**.

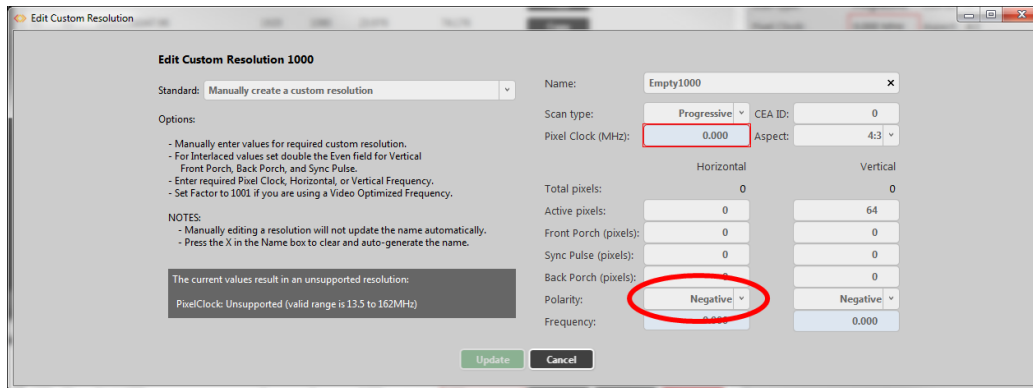
Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.

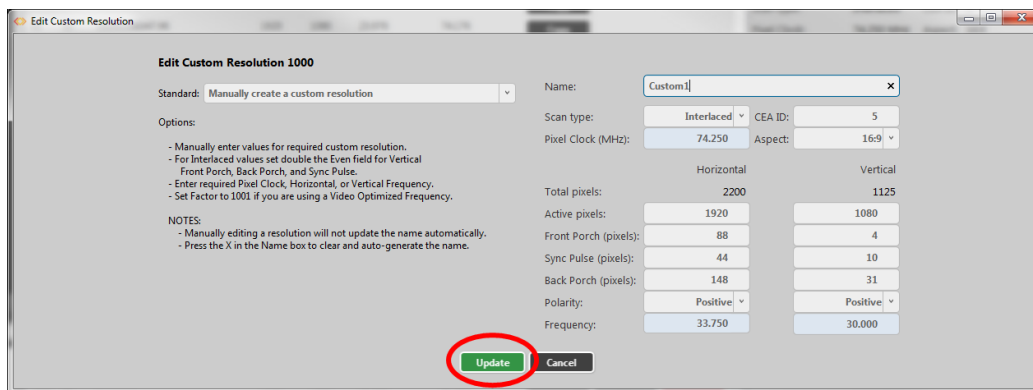


2. In the new window, you can edit various properties of the Custom Resolution. In the left column of the right-hand section, you can choose **Positive** or **Negative** from the drop-

down **Polarity** list under the **Horizontal** heading.



- When you have modified the **Horizontal Sync Polarity** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.



Default

N

Notes

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Sync Polarity**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Sync Polarity** changes.

Editing Vertical Active Pixels Property from CORIOdiscover Resolution Editor

Learn how to set the **Vertical Active pixels** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

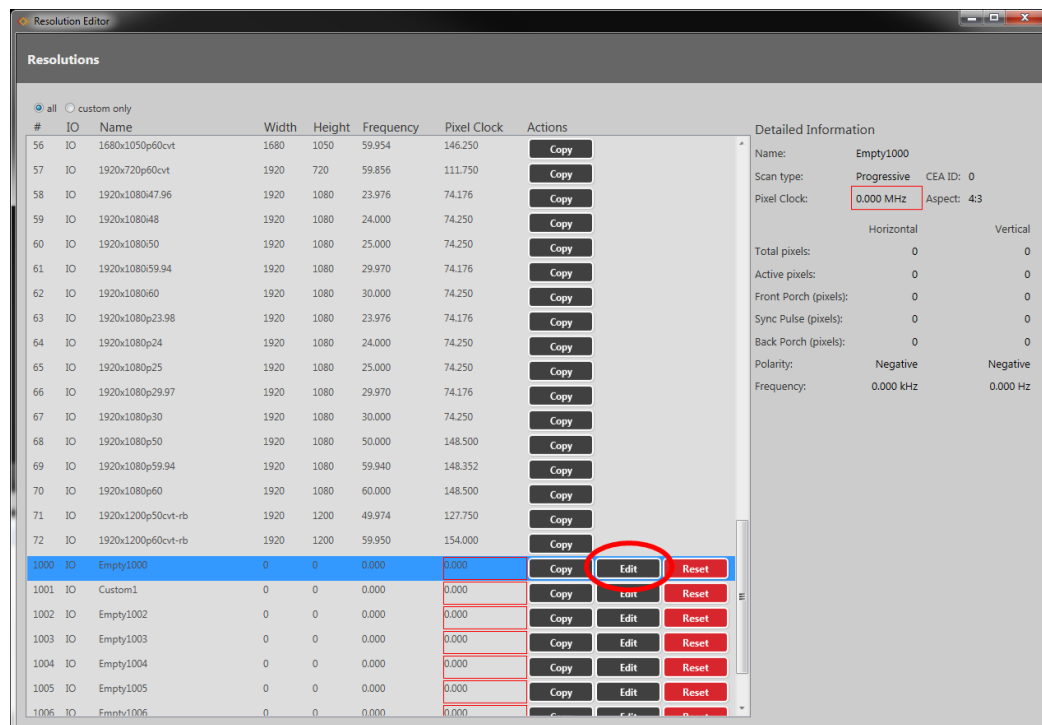
Description

The **Vertical Active** video is the height of the displayed image in pixels.

For example, for a Custom Resolution of 1024x768 this value would be 768.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.



2. In the new window, you can edit various properties of the Custom Resolution. In the right column of the right-hand section, you can type a number into the **Active pixels** field under

the **Vertical** heading.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Empty1000

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

Pixel Clock (MHz): 0.000

Aspect: 4:3

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

- When you have modified the **Active pixels** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Custom1

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

Pixel Clock (MHz): 74.250

Aspect: 16:9

	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel

Default

0

Notes

The valid range of values is 64 to 1200.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Active pixels**. However, the **Vertical Frequency** read-only field varies based on **Vertical Active pixels** changes.

Editing Vertical Front Porch Property from CORIOdiscover Resolution Editor

Learn how to set the **Vertical Front Porch** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

The **Vertical Front Porch** is the gap between the end of the Active Video and the start of the **Vertical Sync Pulse**, in pixels.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.

The screenshot shows the Resolution Editor window with a table of resolutions and a detailed information panel on the right. The 'Empty1000' resolution is selected, and its 'Edit' button is circled in red. The detailed information panel shows the 'Front Porch (pixels)' field highlighted with a red box, indicating it is the target of the edit.

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
56	IO	1680x1050p60cvt	1680	1050	59.954	146.250	Copy
57	IO	1920x720p60cvt	1920	720	59.856	111.750	Copy
58	IO	1920x1080i47.96	1920	1080	23.976	74.176	Copy
59	IO	1920x1080i48	1920	1080	24.000	74.250	Copy
60	IO	1920x1080i50	1920	1080	25.000	74.250	Copy
61	IO	1920x1080i59.94	1920	1080	29.970	74.176	Copy
62	IO	1920x1080i60	1920	1080	30.000	74.250	Copy
63	IO	1920x1080p23.98	1920	1080	23.976	74.176	Copy
64	IO	1920x1080p24	1920	1080	24.000	74.250	Copy
65	IO	1920x1080p25	1920	1080	25.000	74.250	Copy
66	IO	1920x1080p29.97	1920	1080	29.970	74.176	Copy
67	IO	1920x1080p30	1920	1080	30.000	74.250	Copy
68	IO	1920x1080p50	1920	1080	50.000	148.500	Copy
69	IO	1920x1080p59.94	1920	1080	59.940	148.352	Copy
70	IO	1920x1080p60	1920	1080	60.000	148.500	Copy
71	IO	1920x1200p50cvt-rb	1920	1200	49.974	127.750	Copy
72	IO	1920x1200p60cvt-rb	1920	1200	59.950	154.000	Copy
1000	IO	Empty1000	0	0	0.000	0.000	Copy Edit Reset
1001	IO	Custom1	0	0	0.000	0.000	Copy Edit Reset
1002	IO	Empty1002	0	0	0.000	0.000	Copy Edit Reset
1003	IO	Empty1003	0	0	0.000	0.000	Copy Edit Reset
1004	IO	Empty1004	0	0	0.000	0.000	Copy Edit Reset
1005	IO	Empty1005	0	0	0.000	0.000	Copy Edit Reset
1006	IO	Empty1006	0	0	0.000	0.000	Copy Edit Reset

Detailed Information for Empty1000:

- Name: Empty1000
- Scan type: Progressive CEA ID: 0
- Pixel Clock: 0.000 MHz Aspect: 4:3
- Total pixels: Horizontal 0, Vertical 0
- Active pixels: Horizontal 0, Vertical 0
- Front Porch (pixels): Horizontal 0, Vertical 0
- Sync Pulse (pixels): Horizontal 0, Vertical 0
- Back Porch (pixels): Horizontal 0, Vertical 0
- Polarity: Horizontal Negative, Vertical Negative
- Frequency: Horizontal 0.000 kHz, Vertical 0.000 Hz

2. In the new window, you can edit various properties of the Custom Resolution. In the right column of the right-hand section, you can type a number into the **Front Porch (pixels)**

field under the **Vertical** heading.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Empty1000

Scan type: Progressive CEA ID: 0

Pixel Clock (MHz): 0.000 Aspect: 4:3

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	0
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

- When you have modified the **Front Porch** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Custom1

Scan type: Interlaced CEA ID: 5

Pixel Clock (MHz): 74.250 Aspect: 16:9

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel

Default

0

Notes

The valid range of values is 1 to 2000.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

To calculate the **Vertical Front Porch**, **Vertical Sync Pulse** and **Vertical Back Porch** for an interlaced resolution, double the value of the even field. Interlacing standards are designed this way in order to present the values in a similar format to Progressive values.

Interlaced Custom Resolutions require that the **Vertical Front Porch** is twice the even field.

For example, a **Vertical Front Porch** of 6 gives:

Odd field: 3.5

Even field: 3

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Front Porch**. However, the **Vertical Frequency** read-only field varies based on **Vertical Front Porch** changes.

Editing Vertical Sync Pulse Property from CORIOdiscover Resolution Editor

Learn how to set the **Vertical Sync Pulse** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

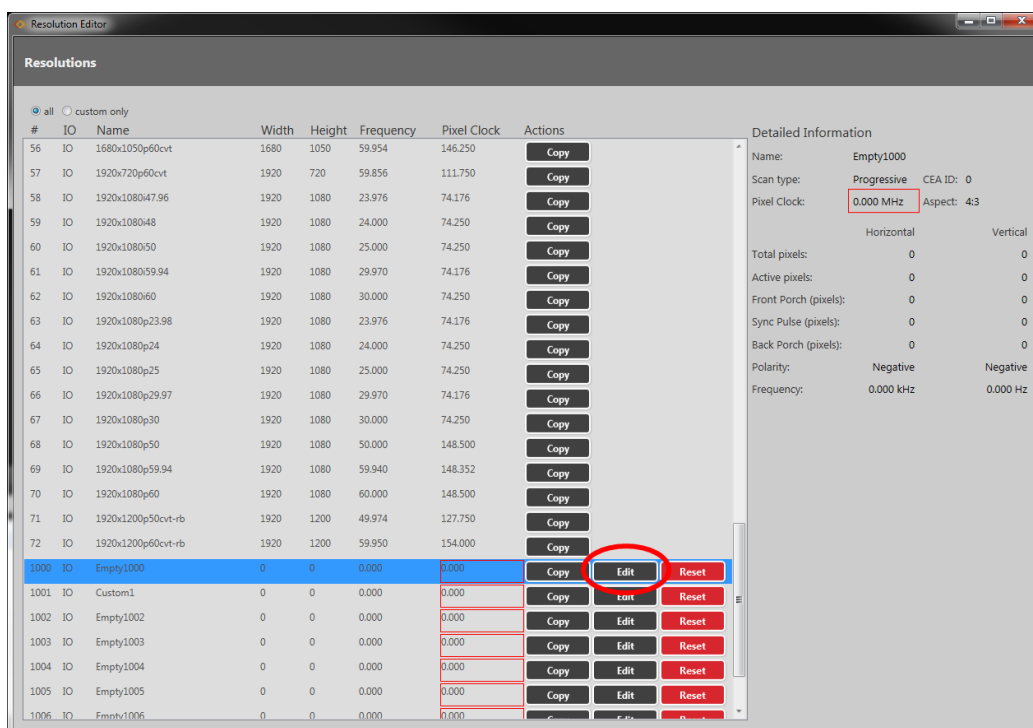
Description

The **Vertical Sync Pulse** identifies the start of each frame of video in the Custom Resolution.

Note that for **Interlaced** Custom Resolutions both odd and even frames will have a **Vertical Sync Pulse**.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.



2. In the new window, you can edit various properties of the Custom Resolution. In the right column of the right-hand section, you can type a number into the **Sync Pulse (pixels)** field

under the **Vertical** heading.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Empty1000

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

Pixel Clock (MHz): 0.000

Scan type: Progressive

CEA ID: 0

Aspect: 4:3

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

- When you have modified the **Sync Pulse** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Custom1

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

Pixel Clock (MHz): 74.250

Scan type: Interlaced

CEA ID: 5

Aspect: 16:9

	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel

Default

0

Notes

The valid range of values is 1 to 100.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

To calculate the **Vertical Front Porch**, **Vertical Sync Pulse** and **Vertical Back Porch** for an interlaced resolution, double the value of the even field. Interlacing standards are designed this way in order to present the values in a similar format to Progressive values.

Interlaced Custom Resolutions require that the **Vertical Sync Pulse** is twice the even field.

For example, a **Vertical Sync Pulse** of 10 gives:

Odd field:	5
Even field:	5

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Sync Pulse**. However, the **Vertical Frequency** read-only field varies based on **Vertical Sync Pulse** changes.

Editing Vertical Back Porch Property from CORIOdiscover Resolution Editor

Learn how to set the timing interval for the **Vertical Back Porch** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

The **Vertical Back Porch** is the gap between the end of the **Vertical Sync Pulse** and the beginning of the Active Video, in pixels.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.

The screenshot shows the Resolution Editor window with a table of resolutions and a detailed information panel on the right. The 'Empty1000' resolution is selected, and its 'Edit' button is circled in red. The detailed information panel shows the 'Pixel Clock' as 0.000 MHz and the 'Back Porch (pixels)' as 0.

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
56	IO	1680x1050p60cvt	1680	1050	59.954	146.250	Copy
57	IO	1920x720p60cvt	1920	720	59.856	111.750	Copy
58	IO	1920x1080i47.96	1920	1080	23.976	74.176	Copy
59	IO	1920x1080i48	1920	1080	24.000	74.250	Copy
60	IO	1920x1080i50	1920	1080	25.000	74.250	Copy
61	IO	1920x1080i59.94	1920	1080	29.970	74.176	Copy
62	IO	1920x1080i60	1920	1080	30.000	74.250	Copy
63	IO	1920x1080p23.98	1920	1080	23.976	74.176	Copy
64	IO	1920x1080p24	1920	1080	24.000	74.250	Copy
65	IO	1920x1080p25	1920	1080	25.000	74.250	Copy
66	IO	1920x1080p29.97	1920	1080	29.970	74.176	Copy
67	IO	1920x1080p30	1920	1080	30.000	74.250	Copy
68	IO	1920x1080p50	1920	1080	50.000	148.500	Copy
69	IO	1920x1080p59.94	1920	1080	59.940	148.352	Copy
70	IO	1920x1080p60	1920	1080	60.000	148.500	Copy
71	IO	1920x1200p50cvt-rb	1920	1200	49.974	127.750	Copy
72	IO	1920x1200p60cvt-rb	1920	1200	59.950	154.000	Copy
1000	IO	Empty1000	0	0	0.000	0.000	Copy Edit Reset
1001	IO	Custom1	0	0	0.000	0.000	Copy Edit Reset
1002	IO	Empty1002	0	0	0.000	0.000	Copy Edit Reset
1003	IO	Empty1003	0	0	0.000	0.000	Copy Edit Reset
1004	IO	Empty1004	0	0	0.000	0.000	Copy Edit Reset
1005	IO	Empty1005	0	0	0.000	0.000	Copy Edit Reset
1006	IO	Empty1006	0	0	0.000	0.000	Copy Edit Reset

Detailed Information for Empty1000:

- Name: Empty1000
- Scan type: Progressive CEA ID: 0
- Pixel Clock: 0.000 MHz Aspect: 4:3
- Total pixels: Horizontal 0, Vertical 0
- Active pixels: Horizontal 0, Vertical 0
- Front Porch (pixels): Horizontal 0, Vertical 0
- Sync Pulse (pixels): Horizontal 0, Vertical 0
- Back Porch (pixels): Horizontal 0, Vertical 0
- Polarity: Horizontal Negative, Vertical Negative
- Frequency: Horizontal 0.000 kHz, Vertical 0.000 Hz

2. In the new window, you can edit various properties of the Custom Resolution. In the right column of the right-hand section, you can type a number into the **Back Porch (pixels)**

field under the **Vertical** heading.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Empty1000

Scan type: Progressive CEA ID: 0

Pixel Clock (MHz): 0.000 Aspect: 4:3

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

The current values result in an unsupported resolution:
PixelClock: Unsupported (valid range is 13.5 to 162MHz)

	Horizontal	Vertical
Total pixels:	0	0
Active pixels:	0	64
Front Porch (pixels):	0	0
Sync Pulse (pixels):	0	0
Back Porch (pixels):	0	0
Polarity:	Negative	Negative
Frequency:	0.000	0.000

Update Cancel

- When you have modified the **Back Porch** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.

Edit Custom Resolution 1000

Standard: Manually create a custom resolution

Name: Custom1

Scan type: Interlaced CEA ID: 5

Pixel Clock (MHz): 74.250 Aspect: 16:9

Options:

- Manually enter values for required custom resolution.
- For Interlaced values set double the Even field for Vertical Front Porch, Back Porch, and Sync Pulse.
- Enter required Pixel Clock, Horizontal, or Vertical Frequency.
- Set Factor to 1001 if you are using a Video Optimized Frequency.

NOTES:

- Manually editing a resolution will not update the name automatically.
- Press the X in the Name box to clear and auto-generate the name.

	Horizontal	Vertical
Total pixels:	2200	1125
Active pixels:	1920	1080
Front Porch (pixels):	88	4
Sync Pulse (pixels):	44	10
Back Porch (pixels):	148	31
Polarity:	Positive	Positive
Frequency:	33.750	30.000

Update Cancel

Default

0

Notes

The valid range of values is 1 to 100.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

To calculate the **Vertical Front Porch**, **Vertical Sync Pulse** and **Vertical Back Porch** for an interlaced resolution, double the value of the even field. Interlacing standards are designed this way in order to present the values in a similar format to Progressive values.

Interlaced Custom Resolutions require that the **Vertical Back Porch** is twice the even field.

For example, a **Vertical Back Porch** of 69 gives:

Odd field: 34

Even field: 34.5

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Back Porch**. However, the **Vertical Frequency** read-only field varies based on **Vertical Back Porch** changes.

Editing Vertical Sync Polarity Property from CORIOdiscover Resolution Editor

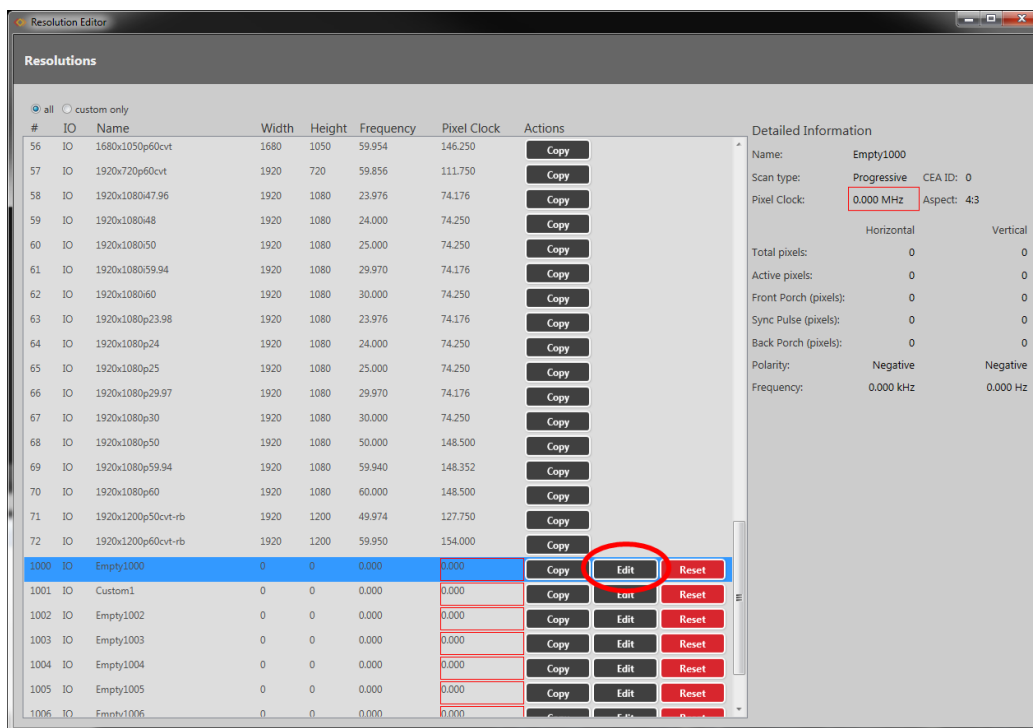
Learn how to set the **Vertical Synchronization Polarity** for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

The **Vertical Sync Pulse** separates the video fields in the Custom Resolution. It can be either **Positive** or **Negative**. This value is the **Vertical Sync Polarity**.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.



2. In the new window, you can edit various properties of the Custom Resolution. In the right column of the right-hand section, you can choose **Positive** or **Negative** from the drop-

down **Polarity** list under the **Vertical** heading.

The screenshot shows the 'Edit Custom Resolution' dialog box. The 'Standard' is set to 'Manually create a custom resolution'. The 'Name' is 'Empty1000'. The 'Scan type' is 'Progressive'. The 'Pixel Clock (MHz)' is 0.000. The 'Aspect' is 4:3. The 'Polarity' dropdown menu is set to 'Negative'. The 'Update' button is highlighted with a red circle.

- When you have modified the **Vertical Sync Polarity** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.

The screenshot shows the 'Edit Custom Resolution' dialog box. The 'Standard' is set to 'Manually create a custom resolution'. The 'Name' is 'Custom1'. The 'Scan type' is 'Interlaced'. The 'Pixel Clock (MHz)' is 74.250. The 'Aspect' is 16:9. The 'Polarity' dropdown menu is set to 'Positive'. The 'Update' button is highlighted with a red circle.

Default

N

Notes

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Sync Polarity**. However, the **Vertical Frequency** read-only field varies based on **Vertical Sync Polarity** changes.

Editing CEA ID Property from CORIOdiscover Resolution Editor

Learn how to set the **CEAID** (Consumer Electronics Association Digital Television Profile, as defined in CEA-861-D) for a Custom Resolution via the Resolution Editor in CORIOdiscover.

Description

This attribute is to be used only when creating a Custom Resolution as defined in CEA-861-D.

Instructions

1. From the Resolution Editor window, scroll to the Custom Resolutions section and press the **Edit** button next to the Custom Resolution you want to edit.

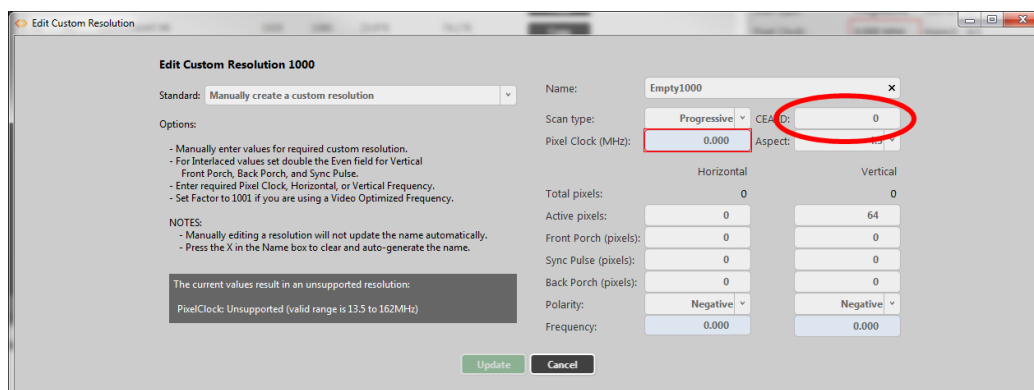
The screenshot shows the Resolution Editor window with a table of resolutions and a detailed information panel on the right. The 'Empty1000' resolution is selected, and its 'Edit' button is circled in red.

#	IO	Name	Width	Height	Frequency	Pixel Clock	Actions
56	IO	1680x1050p60cvt	1680	1050	59.954	146.250	Copy
57	IO	1920x720p60cvt	1920	720	59.856	111.750	Copy
58	IO	1920x1080i47.96	1920	1080	23.976	74.176	Copy
59	IO	1920x1080i48	1920	1080	24.000	74.250	Copy
60	IO	1920x1080i50	1920	1080	25.000	74.250	Copy
61	IO	1920x1080i59.94	1920	1080	29.970	74.176	Copy
62	IO	1920x1080i60	1920	1080	30.000	74.250	Copy
63	IO	1920x1080p23.98	1920	1080	23.976	74.176	Copy
64	IO	1920x1080p24	1920	1080	24.000	74.250	Copy
65	IO	1920x1080p25	1920	1080	25.000	74.250	Copy
66	IO	1920x1080p29.97	1920	1080	29.970	74.176	Copy
67	IO	1920x1080p30	1920	1080	30.000	74.250	Copy
68	IO	1920x1080p50	1920	1080	50.000	148.500	Copy
69	IO	1920x1080p59.94	1920	1080	59.940	148.352	Copy
70	IO	1920x1080p60	1920	1080	60.000	148.500	Copy
71	IO	1920x1200p50cvt-rb	1920	1200	49.974	127.750	Copy
72	IO	1920x1200p60cvt-rb	1920	1200	59.950	154.000	Copy
1000	IO	Empty1000	0	0	0.000	0.000	Copy Edit Reset
1001	IO	Custom1	0	0	0.000	0.000	Copy Edit Reset
1002	IO	Empty1002	0	0	0.000	0.000	Copy Edit Reset
1003	IO	Empty1003	0	0	0.000	0.000	Copy Edit Reset
1004	IO	Empty1004	0	0	0.000	0.000	Copy Edit Reset
1005	IO	Empty1005	0	0	0.000	0.000	Copy Edit Reset
1006	IO	Empty1006	0	0	0.000	0.000	Copy Edit Reset

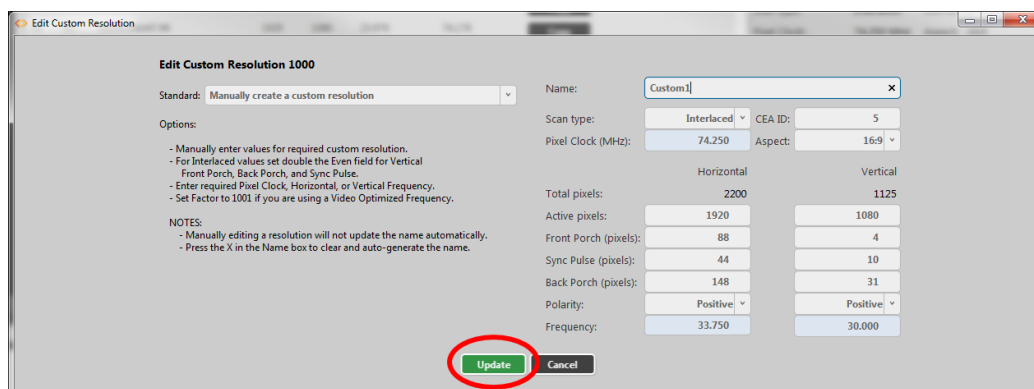
Detailed Information for Empty1000:

- Name: Empty1000
- Scan type: Progressive CEA ID: 0
- Pixel Clock: 0.000 MHz Aspect: 4:3
- Total pixels: Horizontal 0, Vertical 0
- Active pixels: Horizontal 0, Vertical 0
- Front Porch (pixels): Horizontal 0, Vertical 0
- Sync Pulse (pixels): Horizontal 0, Vertical 0
- Back Porch (pixels): Horizontal 0, Vertical 0
- Polarity: Horizontal Negative, Vertical Negative
- Frequency: Horizontal 0.000 kHz, Vertical 0.000 Hz

- In the new window, you can edit various properties of the Custom Resolution. In the top right corner, you can type a value into the **CEA ID** field.



- When you have modified the **CEA ID** as desired, click the **Update** button at the bottom of the window to commit changes and return to the Resolution Editor.



Default

0

Notes

This field value must be 0 or a value specified in the CEA Standard Profile, as defined in CEA-861-D.

The CEA identifier information option does not affect the Custom Resolution. It is there strictly for providing attached equipment with information on the resolution. When defining a Custom Resolution, only set this value if you are configuring it to comply with the CEA Profile for that value.



Caution: If the value of **CEA ID** is not 0 and the Custom Resolution does not conform to the CEA Profile for that value, the result is undefined and behavior may not be as expected.

Accessing Resolution Editor from the Command Line

Using Command Line Interface for Resolution Editing

If you are not confident with the command line interface, please use the GUI provided; however, if you are comfortable with the command line and wish to use it instead of the user interface, there are a set of commands that can be used to configure the unit.

To use the command line interface, you need to connect to the unit via either serial or Ethernet, using a terminal emulator. The unit confirms the connection by providing a carat at the start of the line.

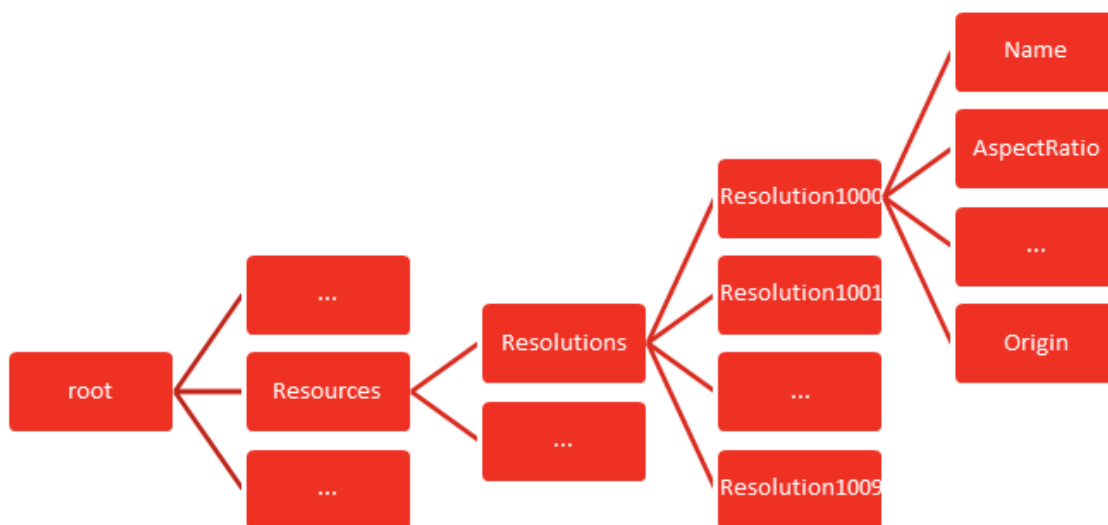
Log in by using the command `login (<username>, <password>)` - for example, `login (admin, adminpw)` and pressing Enter or Return. If the login is successful, the unit will confirm that you have logged in and you can begin using commands.

If you are not confident with these steps, it is recommended that you use the software user interface provided by tvONE. Virtually every task that can be done via command line is also available in the software.

Listing Resolutions from Command Line

If you are not confident with the command line interface, please use the GUI provided; however, if you are comfortable with the command line and wish to use it instead of the user interface, the relevant commands are outlined in this and subsequent sections.

The `Resolutions` command (in the `Resources` menu) contains ten Custom Resolutions. Each resolution can be tailored to your exact requirements from the command line by configuring the relevant attributes, outlined below.



Command

```
Resources.Resolutions
```

Description

Custom Resolutions are accessed from the `Resources` menu, under the `Resolutions` option.

All the built-in and Custom Resolutions configurations may be viewed from this menu; Custom Resolutions can also be modified here.

Built-in Resolutions are numbered sequentially from 1; Custom Resolutions are numbered sequentially from 1000 - the ten Custom Resolution slots available are **Resolution1000** to **Resolution1009** inclusive.

Example

```
Resources.Resolutions.Resolution1
```

```
Resources.Resolutions.Resolution2
```

...
Resources.Resolutions.Resolution1000
...
Resources.Resolutions.Resolution1009

Listing Resolution Properties from Command Line

Various details specific to a resolution are saved on a per-resolution basis. You can view settings for built-in resolutions; you can view and edit settings for Custom Resolutions.

Command

```
Resources.Resolutions.Resolution1
```

Description

List the attributes of this resolution.

Example

For a default resolution:

```
Resources.Resolutions.Resolution1
Resources.Resolutions.Resolution1.Name = 640x480p60
Resources.Resolutions.Resolution1.Aspect = 4:3
Resources.Resolutions.Resolution1.CanFramelock = No
Resources.Resolutions.Resolution1.PixelClock = 25175000
Resources.Resolutions.Resolution1.ScanType = p
Resources.Resolutions.Resolution1.HActive = 640
Resources.Resolutions.Resolution1.HFrontPorch = 16
Resources.Resolutions.Resolution1.HSyncPulse = 96
Resources.Resolutions.Resolution1.HBackPorch = 48
Resources.Resolutions.Resolution1.VActive = 480
Resources.Resolutions.Resolution1.VFrontPorch = 10
Resources.Resolutions.Resolution1.VSyncPulse = 2
Resources.Resolutions.Resolution1.VBackPorch = 33
Resources.Resolutions.Resolution1.HSyncPolarity = N
Resources.Resolutions.Resolution1.VSyncPolarity = N
Resources.Resolutions.Resolution1.CEAID = 1
Resources.Resolutions.Resolution1.Origin = tvONE
!Done Resources.Resolutions.Resolution1
```

For a Custom Resolution:

```
Resources.Resolutions.Resolution1000
Resources.Resolutions.Resolution1000.Name = MyResolution
Resources.Resolutions.Resolution1000.Aspect = 4:3
Resources.Resolutions.Resolution1000.PixelClock = 111750000
Resources.Resolutions.Resolution1000.ScanType = p
Resources.Resolutions.Resolution1000.HActive = 1920
Resources.Resolutions.Resolution1000.HFrontPorch = 96
Resources.Resolutions.Resolution1000.HSyncPulse = 192
Resources.Resolutions.Resolution1000.HBackPorch = 288
Resources.Resolutions.Resolution1000.VActive = 720
Resources.Resolutions.Resolution1000.VFrontPorch = 3
Resources.Resolutions.Resolution1000.VSyncPulse = 10
Resources.Resolutions.Resolution1000.VBackPorch = 15
Resources.Resolutions.Resolution1000.HSyncPolarity = N
Resources.Resolutions.Resolution1000.VSyncPolarity = P
Resources.Resolutions.Resolution1000.CEAID = 0
Resources.Resolutions.Resolution1000.Origin = Example
!Done Resources.Resolutions.Resolution1000
```

Notes

Custom Resolutions can only be modified; they cannot be created or deleted. If you wish to remove saved details, **Reset** the Custom Resolution to default settings. This is equivalent to deleting, but the slot is still available for future use.

If a Custom Resolution is being used on an output and you change an **Attribute** (other than **Name**), the resolution will be reapplied on the output and the connection to the output device will be renegotiated. If you change the **Name Attribute**, the output will revert to the default built-in resolution.

You can configure a Custom Resolution by copying the values from a similar built-in or Custom Resolution and modifying as needed. See "Creating a Custom Resolution From a Built-In Resolution" on page 226.

Once you have configured a Custom Resolution, use `System.SaveAllSettings()` to ensure that your changes are persistent and not lost after powering off.



Caution: It is possible to apply an invalid Custom Resolution to an output.

Editing Resolution Properties from Command Line

Various details specific to a resolution are saved on a per-resolution basis. You can edit settings for Custom Resolutions. Each property is covered separately.

Editing Name Property from Command Line

Learn how to set a name for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.Name
```

Description

Lists the user-readable name for this resolution. Set up the name as something meaningful for you, within the limitations of the permissible characters. (See Note below.)

Example

```
Resources.Resolutions.Resolution1000.Name = NewCustomResolution
Resources.Resolutions.Resolution1000.Name = NewCustomResolution
!Done Resources.Resolutions.Resolution1000.Name =NewCustomResolution
```

Default

The default **Name** is the string “EmptyNNNN” where ‘NNNN’ is the number of the Custom Resolution. Note that Resolution1000 is “Empty1000”, Resolution1001 is “Empty1001”, Resolution1009 is “Empty1009” and so forth.

```
Resources.Resolutions.Resolution1000.Name
Resources.Resolutions.Resolution1000.Name = Empty1000
!Done Resources.Resolutions.Resolution1000.Name
```

Notes

The **Name** attribute has the following limitations:

- must be no more than 23 characters
- only valid printable ASCII characters may be used
- must have no spaces (underscore is valid)

The system does not check for duplicate names - if more than one Custom Resolution has the same name, when you set a Custom Resolution of that name to an output, unexpected behavior may result.

If you change the **Name** attribute of a Custom Resolution that you have already set to an output, the output will revert to the default built-in resolution for that output. To continue using the same Custom Resolution with that output, re-apply it to the output.

It is possible to set a Custom Resolution that has not been configured to an output. This is intentional.

If you wish to use a Custom Resolution with CORIOgrapher the **Name** must conform to the following format:

[width]x[height][scantype][rate][optional]

where:

[width]	width in pixels	num
[height]	height in pixels	num
x	the letter x	x
[scantype]	either <i>i</i> for interlaced or <i>p</i> for progressive.	<i>i</i> or <i>p</i>
[rate]	the frame rate (this must be at least one character and may contain a period if relevant)	num
[optional]	any optional text	null or string

•

For example, the following are valid **Name** formats for use with CORIOgrapher:

- 1280x720i40055D
- 1280x720p6test
- 1280x720p59.94
- 1280x720i50
- 280x72i30



Caution: If you use CORIOgrapher with a **Name** that does not conform to the format described above, you may experience unexpected consequences.

Editing Aspect Property from Command Line

Learn how to set the **Aspect** ratio for a Custom Resolution via the command line. This is used on the CORIOmaster and CORIOmaster mini to assist in signal conversion when an input and output have different aspect ratio.

Command

```
Resources.Resolutions.Resolution1000.Aspect
```

Description

Lists the **Aspect** ratio for this Custom Resolution in the form width:height (in units of equal size).

Example

```
Resources.Resolutions.Resolution1000.Aspect = 16:6  
Resources.Resolutions.Resolution1000.Aspect = 16:6  
!Done Resources.Resolutions.Resolution1000.Aspect = 16:6
```

Default

4:3

Notes

Valid available **Aspect** ratios are:

- 16:9
- 4:3
- 5:4
- 16:10
- 5:3
- 1:1
- 16:6

The system cannot accept any other aspect ratios.

Aspect ratios are used on the CORIOmaster and CORIOmaster mini only, not on CORIOmaster or CORIOmaster mini.

Listing Framelock Properties from Command Line

Learn how to view the **Can Framelock** attribute for a Custom Resolution via the command line. **Can Framelock** is a read-only attribute indicating whether this Custom Resolution is suitable for use with the Framelock feature.

Command

```
Resources.Resolutions.Resolution1000.CanFramelock
```

Description

This attribute indicates whether a Custom Resolution may be used with the Framelock mechanism.

- Yes The Custom Resolution is compatible with the Framelock mechanism and may be used as either an Input or Output to Framelock.
- No The Custom Resolution is not compatible with the Framelock feature.

Example

```
Resources.Resolutions.Resolution1000.CanFramelock  
Resources.Resolutions.Resolution1000.CanFramelock = No  
!Done Resources.Resolutions.Resolution1000.CanFramelock
```

Note

An **Input** to Framelock is the source that is to be used as the Framelock reference.

An **Output** to Framelock is to be locked to the reference input.

Currently this is always “No”.

This property is not available in the CORIOdiscover Resolution Editor.

Editing Pixel Clock Property from Command Line

Learn how to set the **Pixel Clock** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.PixelClock
```

Description

The **Pixel Clock** value is the speed of the **Pixel Clock** in pixels per second.

The minimum and maximum values are dependent on the following:

$$p = h * v * f$$

where:

p	Pixels per second
h	Horizontal total pixels
v	Vertical total pixels
f	Frame rate in frames per second

For example, for 1920x1080p60, h=2200, v=1125, and f=60. This gives $p = 2200 * 1125 * 60 = 148.5\text{MHz}$

Example

```
Resources.Resolutions.Resolution1000.PixelClock = 148500000  
Resources.Resolutions.Resolution1000.PixelClock = 148500000  
!Done Resources.Resolutions.Resolution1000.PixelClock = 148500000
```

Default

0

Notes

The valid range for the **Pixel Clock** is 13.5MHz to 162MHz. As the value in pixels is a function of resolution (including frame rate), the minimum and maximum value in **Pixel Clock** varies with the resolution.

For example:

The minimum **Pixel Clock** at 640x480p60 is $800 * 525 * 59.94 = 25.175\text{MHz}$ (Note that p60 is nomenclature - the rate is actually 59.94MHz)

The maximum **Pixel Clock** at 1600x1200p60 is $2160 * 1250 * 60 = 162\text{MHz}$

To calculate the **Vertical Front Porch**, **Vertical Sync Pulse** and **Vertical Back Porch** for an interlaced resolution, double the value of the even field. Interlacing standards are designed this way in order to present the values in a similar format to Progressive values.

In the CORIOdiscover Resolution Editor, the **Horizontal Frequency** and **Vertical Frequency** read-only fields are derived from the **Pixel Clock** value.

Editing Scan Type Property from Command Line

Learn how to set the **Scan Type** for a Custom Resolution via the command line as either Interlaced or Progressive.

Command

```
Resources.Resolutions.Resolution1000.ScanType
```

Description

The **Scan Type** state of this Custom Resolution has two options:

- p Progressive scan mode
- i Interlaced scan mode

Example

```
Resources.Resolutions.Resolution1000.ScanType = i  
Resources.Resolutions.Resolution1000.ScanType = i  
!Done Resources.Resolutions.Resolution1000.ScanType = i
```

Default

Progressive (p)

Notes

Only Progressive (p) or interlaced (i) are valid options.

Editing Horizontal Active Pixels Property from Command Line

Learn how to set the **Horizontal Active pixels** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.HActive
```

Description

The **Horizontal Active** video is the width of the displayed image in pixels.

For example, for a Custom Resolution of 1024x768 this value would be 1024.

Example

```
Resources.Resolutions.Resolution1000.HActive = 1024
```

```
Resources.Resolutions.Resolution1000.HActive = 1024
```

```
!Done Resources.Resolutions.Resolution1000.HActive = 1024
```

Default

0

Notes

The valid range of values is 64 to 1920.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Active pixels**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Active pixels** changes.

Editing Horizontal Front Porch Property from Command Line

Learn how to set the **Horizontal Front Porch** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.HFrontPorch
```

Description

The **Horizontal Front Porch** is the gap between the end of the Active Video and the start of the **Horizontal Sync Pulse**, in pixels.

Example

```
Resources.Resolutions.Resolution1000.HFrontPorch = 96  
Resources.Resolutions.Resolution1000.HFrontPorch = 96  
!Done Resources.Resolutions.Resolution1000.HFrontPorch = 96
```

Default

0

Notes

The valid range of values is 1 to 2000.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Front Porch**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Front Porch** changes.

Editing Horizontal Sync Pulse Property from Command Line

Learn how to set the **Horizontal Sync Pulse** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.HSyncPulse
```

Description

The **Horizontal Sync Pulse** identifies the start of each row of pixels (line of video) in the Custom Resolution.

Example

```
Resources.Resolutions.Resolution1000.HSyncPulse = 8  
Resources.Resolutions.Resolution1000.HSyncPulse = 8  
!Done Resources.Resolutions.Resolution1000.HSyncPulse = 8
```

Default

0

Notes

The valid range of values is 8 to 500.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Sync Pulse**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Sync Pulse** changes.

Editing Horizontal Back Porch Property from Command Line

Learn how to set the timing interval for the **Horizontal Back Porch** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.HBackPorch
```

Description

The **Horizontal Back Porch** is the gap between end of the **Horizontal Sync Pulse** and the beginning of the Active Video in pixels.

Example

```
Resources.Resolutions.Resolution1000.HBackPorch = 288  
Resources.Resolutions.Resolution1000.HBackPorch = 288  
!Done Resources.Resolutions.Resolution1000.HBackPorch = 288
```

Default

0

Notes

The valid range of values is 1 to 2000.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Back Porch**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Back Porch** changes.

Editing Horizontal Sync Polarity Property from Command Line

Learn how to set the **Horizontal Synchronization Polarity** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.HSyncPolarity
```

Description

The **Horizontal Sync Pulse** is a single short pulse which identifies the start of each row of pixels (line of video) in the Custom Resolution. It can be either **Positive** or **Negative**. This value is the **Horizontal Sync Polarity**.

Example

```
Resources.Resolutions.Resolution1000.HSyncPolarity = N  
Resources.Resolutions.Resolution1000.HSyncPolarity = N  
!Done Resources.Resolutions.Resolution1000.HSyncPolarity = N
```

Default

N

Notes

Only the case-insensitive values N (or n) for **Negative** and P (or p) for **Positive** polarity will be accepted.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Horizontal Sync Polarity**. However, the **Horizontal Frequency** and **Vertical Frequency** read-only fields vary based on **Horizontal Sync Polarity** changes.

Editing Vertical Active Pixels Property from Command Line

Learn how to set the **Vertical Active pixels** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.VActive
```

Description

The **Vertical Active** video is the height of the displayed image in pixels (lines).

For example, for a Custom Resolution of 1024x768 this value would be 768.

Example

```
Resources.Resolutions.Resolution1000.VActive = 768  
Resources.Resolutions.Resolution1000.VActive = 768  
!Done Resources.Resolutions.Resolution1000.VActive = 768
```

Default

0

Notes

The valid range of values is 64 to 1200.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Active pixels**. However, the **Vertical Frequency** read-only field varies based on **Vertical Active pixels** changes.

Editing Vertical Front Porch Property from Command Line

Learn how to set the **Vertical Front Porch** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.VFrontPorch
```

Description

The **Vertical Front Porch** is the gap between the end of the Active Video and the start of the **Vertical Sync Pulse**, in pixels.

Example

```
Resources.Resolutions.Resolution1000.VFrontPorch = 3
Resources.Resolutions.Resolution1000.VFrontPorch = 3
!Done Resources.Resolutions.Resolution1000.VFrontPorch = 3
```

Default

0

Notes

The valid range of values is 1 to 100.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

To calculate the **Vertical Front Porch**, **Vertical Sync Pulse** and **Vertical Back Porch** for an interlaced resolution, double the value of the even field. Interlacing standards are designed this way in order to present the values in a similar format to Progressive values.

Interlaced Custom Resolutions require that the **Vertical Front Porch** is twice the even field.

For example, a **Vertical Front Porch** of 6 gives:

Odd field:	3.5
Even field:	3

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Front Porch**. However, the **Vertical Frequency** read-only field varies based on **Vertical Front Porch** changes.

Editing Vertical Sync Pulse Property from Command Line

Learn how to set the **Vertical Sync Pulse** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.VSyncPulse
```

Description

The **Vertical Sync Pulse** identifies the start of each frame of video in the Custom Resolution.

Note that for **Interlaced** Custom Resolutions both odd and even frames will have a **Vertical Sync Pulse**.

Example

```
Resources.Resolutions.Resolution1000.VSyncPulse = 2  
Resources.Resolutions.Resolution1000.VSyncPulse = 2  
!Done Resources.Resolutions.Resolution1000.VSyncPulse = 2
```

Default

0

Notes

The valid range of values is 1 to 100.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

To calculate the **Vertical Front Porch**, **Vertical Sync Pulse** and **Vertical Back Porch** for an interlaced resolution, double the value of the even field. Interlacing standards are designed this way in order to present the values in a similar format to Progressive values.

Interlaced Custom Resolutions require that the **Vertical Sync Pulse** is twice the even field.

For example, a **Vertical Sync Pulse** of 10 gives:

Odd field:	5
Even field:	5

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Sync Pulse**. However, the **Vertical Frequency** read-only field varies based on **Vertical Sync Pulse** changes.

Editing Vertical Back Porch Property from Command Line

Learn how to set the timing interval for the **Vertical Back Porch** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.VBackPorch
```

Description

The **Vertical Back Porch** is the gap between end of the **Vertical Sync Pulse** and the beginning of the Active Video in pixels.

Example

```
Resources.Resolutions.Resolution1000.VBackPorch = 15  
Resources.Resolutions.Resolution1000.VBackPorch = 15  
!Done Resources.Resolutions.Resolution1000.VBackPorch = 15
```

Default

0

Notes

The valid range of values is 1 to 100.

For a valid Custom Resolution, you must configure this property to a value within the valid range.

To calculate the **Vertical Front Porch**, **Vertical Sync Pulse** and **Vertical Back Porch** for an interlaced resolution, double the value of the even field. Interlacing standards are designed this way in order to present the values in a similar format to Progressive values.

Interlaced Custom Resolutions require that the **Vertical Back Porch** is twice the even field.

For example, a **Vertical Back Porch** of 69 gives:

Odd field:	34
Even field:	34.5

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Back Porch**. However, the **Vertical Frequency** read-only field varies based on **Vertical Back Porch** changes.

Editing Vertical Sync Polarity Property from Command Line

Learn how to set the **Vertical Synchronization Polarity** for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.VSyncPolarity
```

Description

The **Vertical Sync Pulse** separates the video fields in the Custom Resolution. It can be either **Positive** or **Negative**. This value is the **Vertical Sync Polarity**.

Example

```
Resources.Resolutions.Resolution1000.VSyncPolarity = N  
Resources.Resolutions.Resolution1000.VSyncPolarity = N  
!Done Resources.Resolutions.Resolution1000.VSyncPolarity = N
```

Default

N

Notes

Only the case-insensitive values N (or n) for **Negative** and P (or p) for **Positive** polarity will be accepted.

In the CORIOdiscover Resolution Editor, the **Pixel Clock** is not affected by any changes to the **Vertical Sync Polarity**. However, the **Vertical Frequency** read-only field varies based on **Vertical Sync Polarity** changes.

Editing CEAIID Property from Command Line

Learn how to set the **CEAIID** (Consumer Electronics Association Digital Television Profile, as defined in CEA-861-D) for a Custom Resolution via the command line.

Command

```
Resources.Resolutions.Resolution1000.CEAIID
```

Description

This attribute is to be used only when creating a Custom Resolution as defined in CEA-861-D.

Example

```
Resources.Resolutions.Resolution1000.CEAIID = 0  
Resources.Resolutions.Resolution1000.CEAIID = 0  
!Done Resources.Resolutions.Resolution1000.CEAIID = 0
```

Default

0

Notes

This field value must be 0 or a value specified in the CEA Standard Profile, as defined in CEA-861-D.

The CEA identifier information option does not affect the Custom Resolution. It is there strictly for providing attached equipment with information on the resolution. When defining a Custom Resolution, only set this value if you are configuring it to comply with the CEA Profile for that value.



Caution: If the value of **CEAIID** is not 0 and the Custom Resolution does not conform to the CEA Profile for that value, the result is undefined and behavior may not be as expected.

Editing Origin Property from Command Line

Learn how to set the **Origin** for a Custom Resolution via the command line, to provide a string identifying the origin of the Custom Resolution.

Command

```
Resources.Resolutions.Resolution1000.Origin
```

Description

Set the user-readable **Origin** property to something meaningful for you, within the limitations of the permissible characters. For example, if you create a Custom Resolution from the CVT list, it may be useful to have "CVT" in this field; for a CEA Standard Profile it may be useful to have "CEA".

Example

```
Resources.Resolutions.Resolution1000.Origin = Example  
Resources.Resolutions.Resolution1000.Origin = Example  
!Done Resources.Resolutions.Resolution1000.Origin = Example
```

Default

The default **Origin** is an empty, zero-length string:

```
Resources.Resolutions.Resolution1000.Origin  
Resources.Resolutions.Resolution1000.Origin =  
!Done Resources.Resolutions.Resolution1000.Origin
```

Notes

The Origin attribute has the following limitations:

- must be no more than 19 characters
- only valid printable ASCII characters may be used
- must have no spaces (underscore is valid)

This property is not available in the CORIOdiscover Resolution Editor.

Command Line Resolutions

List Usable Resolutions by Name

Get a list of the usable resolutions for a given slot.

Command

```
Slots.Slot1.Module_Resolutions()
```

(In this case, Slot 1 is used as an example - any valid slot number can be used in that context.)

Description

List all the usable resolutions.

Example

```
Slots.Slot16.Module_Resolutions()  
640x480p60;4:3;  
640x480p72;4:3;  
...  
1920x1200p50cvt-rb;16:10;  
1920x1200p60cvt-rb;16:10;  
MyResolution;16:6  
!Done Slots.Slot16.Module_Resolutions()
```

Default

A list of all the built-in resolutions.

Notes

These resolutions are for use with input or output modules.

List Resolutions by Index

Get a list of the output resolutions by index (resolution name)

Command

```
Slots.Slot16.Resolutions
```

(In this case, Slot 16 is used as an example - any valid slot number can be used in that context.)

Description

List all the resolutions.

Example

```
Slots.Slot16.Resolutions
Slots.Slot16.Resolutions.Resolution1 = <...>
Slots.Slot16.Resolutions.Resolution2 = <...>
...
Slots.Slot16.Resolutions.Resolution71 = <...>
Slots.Slot16.Resolutions.Resolution72 = <...>
Slots.Slot16.Resolutions.Resolution1000 = <...>
Slots.Slot16.Resolutions.Resolution1001 = <...>
...
Slots.Slot16.Resolutions.Resolution1009 = <...>
!Done Slots.Slot16.Resolutions
```

Default

A list of all the resolutions.

Notes

For use with output modules only.

Read Output Resolution

Read which resolution is currently set for an output.

Command

```
Slots.Slot16.Out1.Resolution
```

(In this case, Slot 16 and Out 1 are used as an example - any valid slot number and output number can be used in that context.)

Description

Reads the resolution currently set for an output.

Example

```
Slots.Slot16.out1.Resolution
```

```
Slots.Slot16.out1.Resolution = NewCustomResolution
```

```
!Done Slots.Slot16.out1.Resolution
```

Default

1280x720p60

Notes

If the properties of the Custom Resolution are changed, then the resolution will be reapplied on the output and the connection to the output device will be renegotiated.

If the **Name** of a Custom Resolution is changed, then the output will return to its default and you will need set the output to the new Custom Resolution **Name**.

If more than one Custom Resolution has the same name, when you set a Custom Resolution of that name to an output, unexpected behavior may result.

Custom Resolutions cannot be applied to an SDI output.

Specific Resolutions by Index

Get information on a specific output resolution by index (resolution name).

Command

```
Slots.Slot16.Resolutions.Resolution1000
```

(In this case, Slot 16 and Resolution 1000 are used as an example - any valid slot number and resolution number can be used in that context.)

Description

Lists the following attributes of the specified Resolution:

- **Name**
- **Aspect**
- **CanFramLock** ("Can Framelock")

Example

For a built-in resolution:

```
Slots.Slot16.Resolutions.Resolution1
Slots.Slot16.Resolutions.Resolution1.Name = 640x480p60
Slots.Slot16.Resolutions.Resolution1.Aspect = 4:3
Slots.Slot16.Resolutions.Resolution1.CanFramelock = No
!Done Slots.Slot16.Resolutions.Resolution1
```

For a Custom Resolution:

```
Slots.Slot16.Resolutions.Resolution1000
Slots.Slot16.Resolutions.Resolution1000.Name = MyResolution
Slots.Slot16.Resolutions.Resolution1000.Aspect = 4:3
Slots.Slot16.Resolutions.Resolution1000.CanFramelock = No
!Done Slots.Slot16.Resolutions.Resolution1000
```

Default

The configuration of the specified resolution.

Notes

For use with output modules only.

Set Output Resolution

Set which resolution an output will use.

Command

```
Slots.Slot16.Out1.Resolution = 1280x720p60
```

(In this case, Slot 16, Out 1, and 1280x720p60 are used as an example - any valid slot number, output number, and resolution can be used in that context.)

Description

Sets the resolution to be used for an output.

Example

```
Slots.Slot16.out1.Resolution = Empty1  
Slots.Slot16.out1.Resolution = Empty1  
!Done Slots.Slot16.out1.Resolution = Empty1
```

Default

1280x720p60

Notes

If the properties of the Custom Resolution are changed, then the resolution will be reapplied on the output and the connection to the output device will be renegotiated.

If the **Name** of a Custom Resolution is changed, then the output will return to its default and you will need set the output to the new Custom Resolution **Name**.

If more than one Custom Resolution has the same name, when you set a Custom Resolution of that name to an output, unexpected behavior may result.

Custom Resolutions cannot be applied to an SDI output.

Read Input Resolution

Read the reported resolution for an input.

Command

```
Slots.Slot1.In1.Set_Resolution or Slots.Slot1.In1.Measured_Resolution
```

(In this case, Slot 1 and In 1 are used as an example - any valid slot number and input number can be used in that context.)

Description

Reads the currently detected resolution on an input.

Example

```
Slots.Slot1.In1.Set_Resolution
```

```
Slots.Slot1.In1.Set_Resolution = NewCustomResolution
```

```
!Done Slots.Slot1.In1.Set_Resolution
```

or

```
Slots.Slot1.In1.Measured_Resolution
```

```
Slots.Slot1.In1.Measured_Resolution = NewCustomResolution
```

```
!Done Slots.Slot1.In1.Measured_Resolution
```

Default

n/a - the behavior is to show the name of the detected resolution or nothing if no signal is detected.

Notes

Set_Resolution and Measured_Resolution are duplicate commands and produce identical results.

If a Custom Resolution and a built-in resolution are both within the selection tolerance, the Custom Resolution will be selected.

Custom Resolutions cannot be detected on an SDI input.

Command Line - Resolutions

Resolutions are used in the **Slot** menu for both inputs and outputs. However, it is only possible to set a Resolution on an output. Input Resolutions are read-only - the values are set by the incoming video signal.

Note that when detecting input resolutions, if both a Custom Resolution and a built-in Resolution are within the selection tolerance, then the Custom Resolution will be selected.

Use Custom Resolution on an Output

The Resolution used by an output is set using the `Resolution` attribute - see "Set Output Resolution" on page 307.

The steps involved in using a Custom Resolution on an output are:

1. Set up a Custom Resolution with appropriate details for the output you wish to use.
2. Connect a display that supports the signal as described in your Custom Resolution.
3. Set the Custom Resolution for the desired slot and output.

Example

```
Slots.Slot16.out1.Resolution = MyResolution  
Slots.Slot16.out1.Resolution = MyResolution  
!Done Slots.Slot16.out1.Resolution = MyResolution
```

Use Custom Resolution on an Input

The Resolution of an input is detected automatically. If a Custom Resolution and a built-in resolution are both within the selection tolerance, the Custom Resolution will be selected.

The steps involved in using a Custom Resolution on an input are:

1. Set up a Custom Resolution with appropriate details for the source you wish to use.
2. Connect the source that has the matching signal as described in your Custom Resolution.
3. Check that the Custom Resolution is detected correctly with either the `Measured_Resolution` or `Set_Resolution` as described in "Read Input Resolution" on page 308.

Example

```
Slots.Slot1.In1.Measured_Resolution  
Slots.Slot1.In1.Measured_Resolution = MyResolution  
!Done Slots.Slot1.In1.Measured_Resolution
```


Troubleshooting

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Troubleshooting Connection Issues

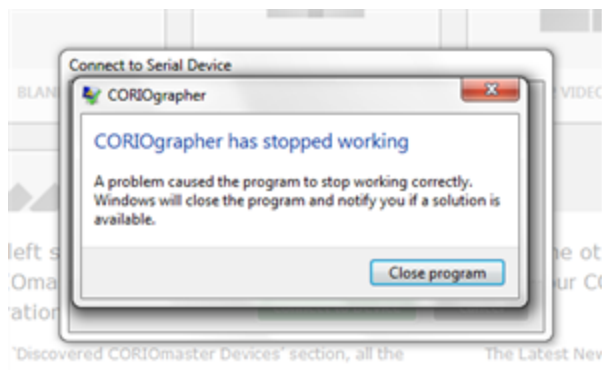
If your CORIOmaster has been configured but is not appearing in the Connect to a Device pane, either under a Group or the Discovered CORIOmaster Devices heading, follow the steps here to troubleshoot the connection. Test the connection again after each step to see if the issue has been resolved.

1. Ensure that the CORIOmaster is turned on and the LED on the front panel of the machine is green.
2. Physically turn the CORIOmaster off and on again, wait till the front panel LED is green again.
3. Click the Refresh button at the bottom of the pane, to ensure that all available devices are discovered.
4. If connecting via Ethernet, verify the physical connection between the CORIOmaster and the network (and between the PC and the network). Be sure that both devices are on the same network and subnet.
If connecting via serial cable, verify the physical connection between the CORIOmaster and the PC.
5. Verify that the CORIOmaster is running firmware version M307 or later. If it is not, you will need to upgrade the firmware. See "Updating Firmware of Existing Units" on page 319.
6. If the device still fails to appear, connect to the CORIOmaster using a serial cable and click the Connect via Serial to a CORIOmaster... option in the Connect to a Device pane. Follow the steps for initial configuration as described in "Configure Connection via Serial" on page 21

Troubleshooting Crash During Login

In some cases, if you are using a serial connection to your CORIOmaster with a USB-to-RS-232 adapter, CORIOgrapher may crash during connection. This is most likely to happen when you have changed settings and restarted the unit and are attempting to connect again.

If this happens, you receive an alert:



This occurs when the USB-to-serial adapter crashes because the unit is not yet fully booted at the time of the login attempt. If you experience this issue, make sure you wait until the LED on the front of the unit is green before you connect.

Troubleshooting Framelock or Genlock with SDI Input Modules

If you are trying to use Framelock or Genlock with an SDI module as a reference input, be aware that some resolutions are not able to be locked properly. We recommend that you try a different resolution if possible.

The only two SD-SDI input resolutions, 720x487i59.94 and 720x576i50, cannot be used as reference signals for Framelock or Genlock. Other SDI inputs and any SDI outputs are unaffected.

Troubleshooting License Issues

Your license key is located on a sticker on the outside of the CORIOgrapher installation disc's protective sleeve. The key is a 25-digit hexadecimal code broken into five groups of five digits.

If you have any problems with your license code not being accepted by the CORIOgrapher software, please contact [tvONE Support](#) with your invoice number and they can assist you in resolving the issue.

Troubleshooting No Preview Video Clips When Using Preview Icon

If you are in the Video Wall editor and the Preview windows do not show the video as expected:

1. Check the PC that CORIOgrapher is installed on to ensure that Windows Media Player has been installed. If it has not been installed, install it free from the [Microsoft Windows website](#).
2. Launch the Windows Media Player - until the first time Windows Media Player is launched, the file types are not correctly associated and the Preview function will not work.

These steps should resolve any issues with Preview not showing the video as expected. If the issue persists, proceed with more general troubleshooting including using Windows Task Manager to check resource utilization and the Event Log to check for errors.

Updating Firmware of Existing Units

If your CORIOmaster did not ship with firmware version M307 or later, you will need to update the firmware before the unit can be used with the most recent version of the CORIOgrapher software. This update must be done through RS-232 and Ethernet connections.

For units that are running firmware version M300 or later, any subsequent firmware updates can be administered easily via the CORIOdiscover or CORIOgrapher applications. (See "Firmware and Defaults - Update Firmware" on page 164 for details.)

The instructions below are relevant for any CORIOmaster units running firmware prior to version M300.

Backing Up Settings

To back up your existing settings to internal memory:

1. Connect via RS-232 or Ethernet using the control UI or a terminal emulator of your choice. Be aware that the CORIOmaster defaults to port 10001. If using RS-232, default baud rate is 115200.
2. In the command line, type `System.BackupToSDCard()`
The unit returns `!Done System.BackupToSDCard` which indicates that the command has been accepted but not yet completed. The system then displays feedback showing data backing up to the internal memory.
When the backup is complete, the display shows `Backup:Complete`.

Updating Firmware

To obtain new firmware, go to <http://www.tvone.com/firmware-updates> and search for your product. Download the .zip file which contains two files, the firmware (.dat file) and a PLSBOOT file.

The CORIOmaster has been designed to update both software and firmware even more easily once the unit is updated to use the CORIOgrapher. To get the CORIOmaster to that point, one more update is required. After powering up the unit and logging in using the RS-232 port, the new firmware is uploaded from a PC connected via the unit's rear USB connector, as follows:

Connecting a PC to the CORIOmax and Transferring Files

1. Connect a PC to the CORIOmaster unit via the unit's rear USB port. If this is the first time the PC has been connected, the PC may request drivers for the Serial Emulator. If drivers are not available, cancel the driver installation.
The PC locates an external drive called `TVONE`, which is the internal SD card on the CORIOmax.
2. In order to update the firmware, you need to drop two files into the root directory of this drive.
 - a) The first file is a PLSBOOT file which is a 12-character long file that defines which of the firmware files to load. (The PLSBOOT file can also be directly edited on the drive if necessary.)
 - b) The second is the firmware file, which contains all the sub-files required to load the

system. There can be any number of firmware files in the directory; the PLSBOOT file will tell the system which to use during startup. The name of the firmware file varies depending on the model of the unit and version of firmware. The CORIOmaster firmware files are named Mxxx_M00.dat (where Mxxx is the version number of the firmware).

3. Verify that you have copied both the new firmware file and PLSBOOT file into the root directory of the TVONE drive.

Running the Firmware Update

1. After transferring the new firmware and PLSBOOT files, eject the TVONE drive safely, disconnect the USB cable and return to the RS-232 control.
2. From the command line, type `Coriomax.software_update()`
The reply shows that the PLSBOOT has been found and that it is loading the Mxxx_XXX.dat file. The process checks the file for integrity and starts erasing the flash files, deleting and replacing the contents. When the process is complete, a message appears stating Update successful followed by an automatic system reboot.
If the update fails at any stage, a command prompt appears: `TVONE>`
If this happens, start the update process again at Connecting a PC to the CORIOmaster and Transferring Files above.

Restoring Backed-Up Settings

To restore your settings from backed-up memory:

1. Connect via RS-232 or Ethernet using the control UI or a terminal emulator, as in the first step of Backing Up Settings.
2. In the command line, type `System.RestoreBackup()`
The unit returns `!Done System.RestoreBackup` which indicates that the command has been accepted but not yet completed. The unit then displays feedback showing data restoring from the internal memory.
When the restore is complete, the display shows `Restore:Complete`.
3. Reboot the unit to initiate the restored settings.