tvONE™
We Engineer Confidence™

CM2-547 CORIOmaster2™
CM2-541 CORIOmaster2™ LITE
CORIOgrapher™ V3.6 and above

User Guide V2.0

Firmware version G504 and above

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Welcome

Welcome to tvONE Help, the place to get help with your:

- CORIOmaster2™
- CORIOgrapher™

> ? Help
> Get more help
> You can read more online. To open the online help, select ? Help in CORIOgrapher, or visit help.tvone.com/r/docs/cm2/home/1.

Meet CORIOmaster2

CORIOmaster2 connects to a wide range of sources and displays, and works with CORIOgrapher™ software to allow you to build dynamic video installations with an easy-to-use visual interface.

Features

- Output to monitors, LED screens, and projectors, including devices that support 8K with quad 4K @60 Hz
- Our largest ever creative canvases at 64,000 x 64,000 pixels
- Consumes less electricity than an equivalent PC based system
- Wide range of inputs, including HDMI, DVI, SDI, HDBaseT™, 4K, and streaming media
- Supports 4:4:4, 4:2:2, or 4:2:0 chroma subsampling on supported modules
- Supports up to HDCP 2.2 on supported modules
- Embedded and S/PDIF audio support with S/PDIF audio module
- New front panel status screen
- Combination of different size and resolution of displays can be used
- Adjustable bezel compensation
- Edge blending of projectors
- Up-down-cross conversion
- Window luminance keying supported on all modules
- Control your video wall with CORIOgrapher, secure IP, or serial connection
- HTTP and HTTPS connectivity, RESTful multi-user control, WebSocket event monitoring
- Horizontal alignment on analog PC inputs
- Crestron module available
- CORIOmaster2: 4RU frame size, 12 Gigapixel, up to three video walls
- CORIOmaster2 LITE: 4RU frame size, 4 Gigapixel, 1 video wall

Meet CORIOgrapher

CORIOgrapher V3.6 is packed with features to help you create and manage your video walls.

- Simple, powerful, software interface
- Save window configurations as presets and transition between presets
- Rotate outputs in 1° increments
- Choose sources for windows
- Manage streaming media
- Use custom resolutions
- Manage EDID data
- See your changes instantly with live changes mode
- Undo and redo your work
- Control audio
- Configure labels, borders, and colors
- Position your displays and windows with pixel-precision

Get to know your products

Learn about the features and functions of your hardware.

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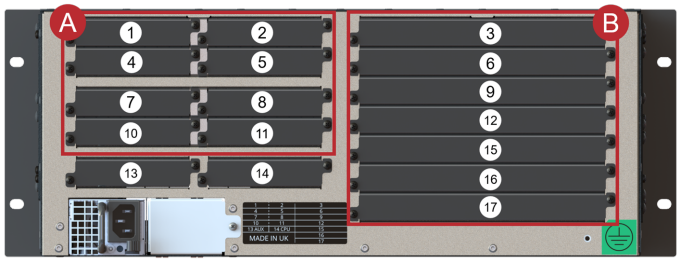
About your CORIOmaster2™

CORIOmaster2 connects to a wide range of sources and displays, and works with CORIOgrapher™ software to allow you to build dynamic video installations with an easy-to-use visual interface.

Slots



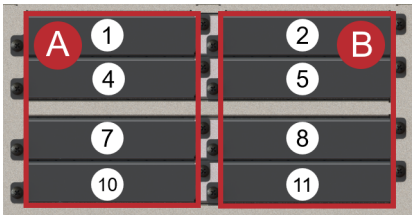
Your CORIOmaster2 has 17 slots.

Slots in area A are for input modules, slots in area B are for output modules. You can have up to eight input modules and up to seven output modules.

Slot 13 is for an S/PDIF and analog audio module, CM2-AUD-2IN-3OUT

Slot 14 is for a CPU module.

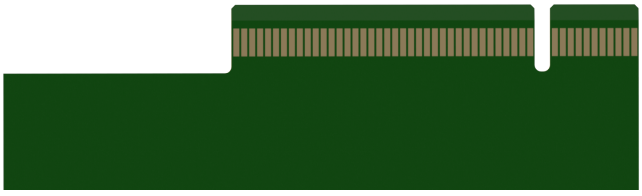
Rules for placing input modules



Standard bandwidth input modules can go in any position in column A and B, slots 1, 2, 4, 5, 7, 8, 10, and 11.

High bandwidth input modules can only go in column B, slots 2, 5, 8, and 11.

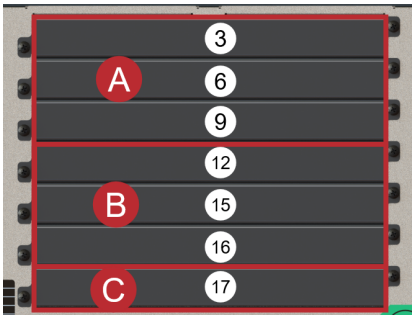
> **Risk of damage**
> Do not insert high bandwidth input modules in column A. The device and module can be damaged. If you are unsure contact your distributor.



Standard bandwidth module connector

High bandwidth module connector

Rules for placing output modules



Output slots are arranged into groups. Each group has the same amount of bandwidth. You must either:

- Fill all the slots of a group with modules

  You can either fill all the slots with output modules, or you can fill empty slots in the group with bonding modules.

  OR

- Leave all the slots of a group empty

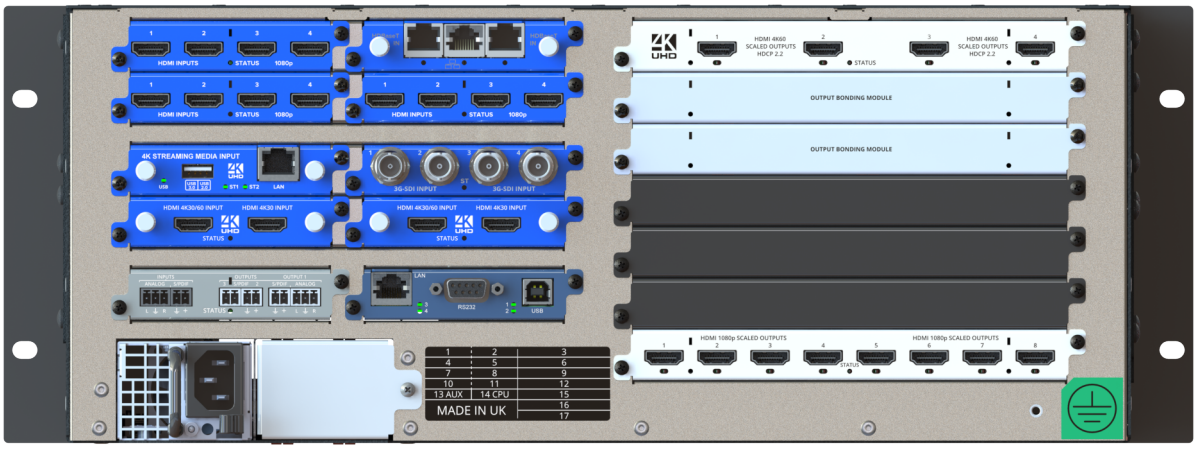
  You don't need to use bonding modules in groups that contain no output modules.

Place output modules in the first slot of each group first, starting with group C, slot 17. Fill empty slots with bonding modules.

Groups are linked by bandwidth and also by canvases in CORIOgrapher. You can only use the outputs in a single group together on the same canvas. You can use more than one group on the same canvas, but if you want to use more than one canvas, you must use more than one group.

Show me an example

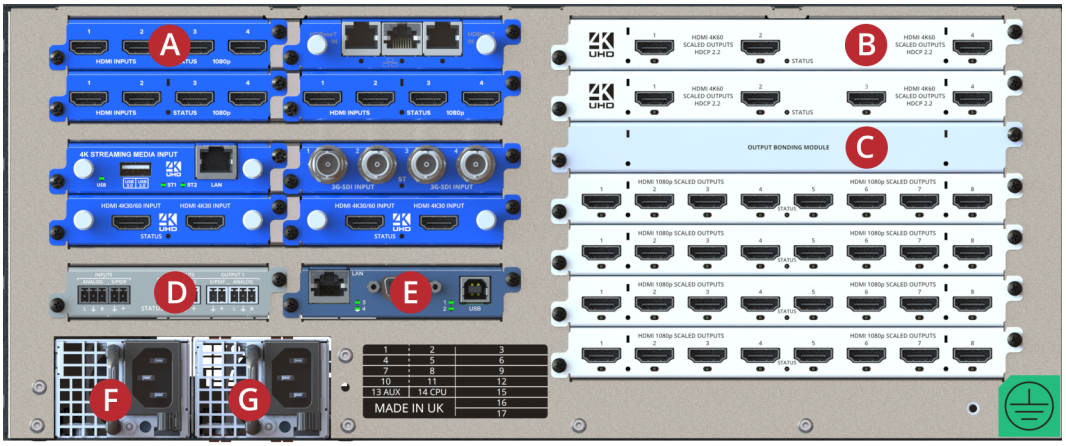
A CORIOmaster2 has two output modules. The first output module goes into group C, slot 17. The second goes into group A, slot 3. Bonding modules go into group A, slots 6 and 9. Group B contains no output modules, so it doesn't need any bonding modules.



CORIOmaster2 front panel

The front panel of your CORIOmaster2 includes a customizable status screen. The status screen can show the IP address of your CORIOmaster2, its status, and the name of the device.

CORIOmaster2 rear panel



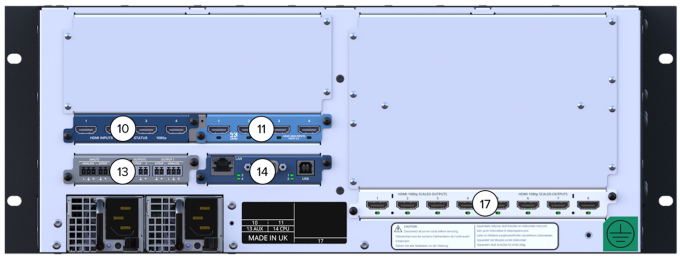
A	Input module (blue)	Connect to sources
B	Output module (white)	Connect to displays
C	Bonding module	Used to fill empty slots in a group
D	Optional audio module	Optional: connect to audio sources and/or playback devices
E	CPU module	Connect to your network with Ethernet Optional: connect to serial controller with RS-232 Optional: connect directly to a PC with Ethernet or RS-232
F	Power supply unit (PSU)	Connect to electrical outlet
G	Optional second PSU, sold separately	Optional: connect to electrical outlet

About your CORIOmaster2™ LITE

CORIOmaster2 connects to a wide range of sources and displays, and works with CORIOgrapher™ software to allow you to build dynamic video installations with an easy-to-use visual interface.

This guide uses the name CORIOmaster2 to mean CORIOmaster2, and CORIOmaster2 LITE systems, unless specifically stated.

Slots



Your CORIOmaster2 LITE has 5 slots.

Slots 10 and 11 are for input modules.

Slot 17 is for an output module.

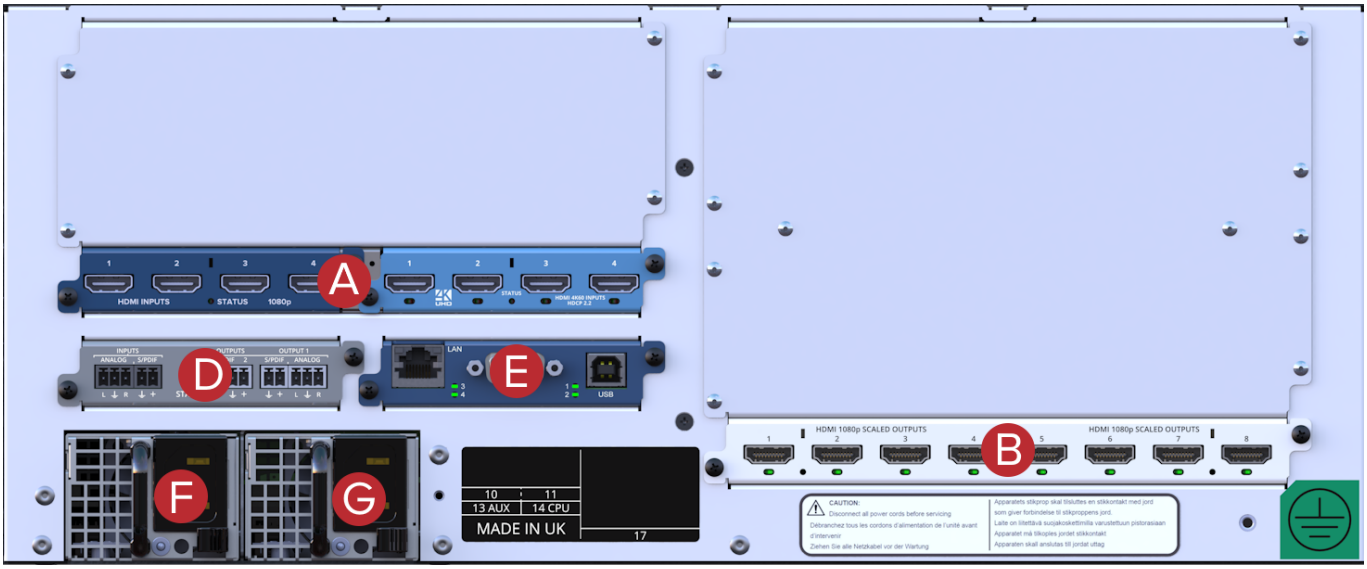
Slot 13 is for an S/PDIF and analog audio module, CM2-AUD-2IN-3OUT

Slot 14 is for a CPU module.

CORIOmaster2 LITE front panel

The front panel of your CORIOmaster2 LITE includes a customizable status screen. The status screen can show the IP address of your CORIOmaster2 LITE, its status, and the name of the device.

CORIOmaster2 LITE rear panel



A	Input module (blue)	Connect to sources
B	Output module (white)	Connect to displays
D	Optional audio module	Optional: connect to audio sources and/or playback devices
E	CPU module	Connect to your network with Ethernet Optional: connect to serial controller with RS-232 Optional: connect directly to a PC with Ethernet or RS-232
F	Power supply unit (PSU)	Connect to electrical outlet
G	Optional second PSU, sold separately	Optional: connect to electrical outlet

About modules

CORIOmaster2 supports a range of input and output modules, with model numbers starting with CM2-. Each module supports specific connections, but our range of adapters means you can connect almost any type of source to your CORIOmaster2.

See our range of available input and output modules for your CORIOmaster2 at help.tvone.com/r/docs/cm2/modules/1.

Input modules

Module	Product number	Connections
Quad 3G-SDI broadcast input module	CM2-3GSDI-4IN	4 x 3G-SDI up to 1080p @60 Hz
Dual DVI-U input module	CM2-DVIU-2IN	2 x DVI-U up to 1080p @60 Hz HDCP 1.4 compliant
Quad 1080p HDMI input module Read more about HDMI modules on page 12.	CM2-HDMI-4IN	4 x HDMI up to 1080p @60 Hz HDCP 1.4 compliant
Dual 4K HDMI input module Read more about HDMI modules on page 12.	CM2-HDMI-4K-2IN	2 x HDMI HDCP 1.4 compliant Supports up to 2 x 4K @30 Hz, or 1 x 4K @60 Hz
Quad 4K HDMI input module (*high bandwidth*) Read more about HDMI modules on page 12.	CM2-HDMI-4K-4IN	4 x HDMI up to 4K @60 Hz Supports 4:4:4, 4:2:2, or 4:2:0 chroma subsampling Supports up to HDCP 2.2
Dual 4K HDBaseT input module Read more about the HDBaseT module on page 11.	CM2-HDBT-2IN-1ETH	2 x HDBaseT Ethernet HDCP 1.4 compliant
Streaming media and 4K playback input module Read more about the Streaming media and 4K playback input module on page 10.	CM2-AVIP-IN-1USB-1ETH-128	1 x USB 3.0 1 x Ethernet 1x 128 GB SSD Supports up to 2 x 4K @30 Hz, or 1 x 4K @60 Hz

Output modules

Module	Product number	Connections
Quad 4K HDMI output module Read more about HDMI modules on page 12.	CM2-HDMI-4K-4OUT	4 x HDMI up to 4K@60 Hz Supports up to HDCP 2.2
Octad HDMI output module Read more about HDMI modules on page 12.	CM2-HDMI-HD-8OUT	8 x HDMI up to 1080p@60 Hz Supports up to HDCP 2.2

Bonding modules

Module	Product number
Output bonding module for CORIOmaster2 output modules.	CM2-BONDING

Read more about output bonding modules on page 137.

Audio modules

Module	Product number	Connections
S/PDIF and analog audio module Read more about the S/PDIF and analog audio module on page 20.	CM2-AUD-2IN-3OUT	Input: 1 x analog and 1 x S/PDIF Output: 1 x analog and 3 x S/PDIF

Power supply module

Module	Product number	Connections
Redundant PSU for 4RU series units	CM2-4RPS	1 x IEC power cord
Redundant 700W PSU for 4RU series units	CM2-4RPS-700	1 x IEC power cord

Adapters

You can use our adapters to connect any of the following formats to the DVI modules.

Adapter	Product number	Female connector
HDMI adapter	CMD1941	HDMI
Analog PC adapter	ZDH-2040	VGA
Analog RGBHV adapter	ZDB-2038	Analog RGBHV
YPbPr/YUV adapter	ZDR2042	YPbPr/YUV
YC (S-Video) adapter	ZDB2048	2 x composite video
YC (S-Video) adapter	ZDS2046	4-pin mini-DIN
Composite video adapter	ZDC-2050	BNC

About your Streaming media and 4K playback input module

The Streaming media and 4K playback input module allows you to decode and play:

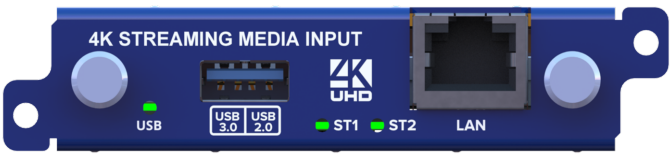
- Media and images from a USB drive
- Media and images from internal storage
- Video streams from IP sources.

  Sources include streaming server, and any device used with an IP encoder, for example, the Magenta™ Encoder-100.

Features

- Play two simultaneous channels of media, including IP streams
- Play video clips from USB drive up to 4K @30 Hz
- Play single IP streams up to 100 Mb/s
- Play dual IP streams up to 40 Mb/s
- Play still images up to 8K
- Play streams with low latency
- Play media from streaming server
- Create and save up to 20 playlists
- Primary channel supports up to 4K @30 Hz
- Secondary channel supports 1080p @60 Hz
- IP streams up to 4K @30 Hz
- Save up to 40 IP streams
- Full resolution and frame rate scaling
- Start playing media when your device starts
- Supports USB 3.0
- 8HD Player mode for synchronized playback of 8x 1080/30 fps files into 2x 4K @30 Hz inputs
- IP and Media playback labels
- FTP synchronization for media files
- Support AES CBC encrypted streams with 128 or 256 bit keys

For CORIOmaster2™, CM2-AVIP-IN-1USB-1ETH-128 comes with 128 GB internal storage



USB (LED)	Indicates the status of the USB drive. Green means that the USB drive is working correctly. Red means that the USB drive is over current.
USB 3.0 USB 2.0	Connect a USB drive to play media directly. For best results, we recommend using quality USB drives compatible with USB 3.0.
ST1 (LED)	Indicates the status of the module. Green means that the module is working correctly. Red means that the module is starting, or that there is a problem.
ST2 (LED)	Indicates the status of the sub-module. Green means that the sub-module is working correctly. Red means that the sub-module is starting, or that there is a problem.
LAN	Connect an Ethernet cable to play media over IP.

If any status indicator stays red, restart your CORIOmaster2™. If that doesn't work, contact tvONE support. Contact details are at the back of this guide.

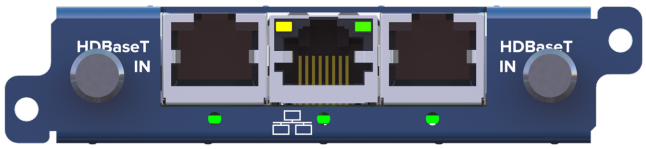
About your HDBaseT input module

The 4K HDBaseT™ modules allows you to receive uncompressed, high-resolution 4K video and audio from stand-alone transmitters located up to 150 m away. The input module also allows you to extend Ethernet to remote transmitters that support HDBaseT Class A and HDBaseT Class B.

See our range of active optical cables and signal extenders at help.tvone.com/r/docs/g/signal-extension

Features

- HDBaseT Class A to 150 m
- HDBaseT Class B to 60 m
- 1x channel 4K60 or 2x channels 4K30 or below
- Audio support



Status indicator (LED)	Indicates the status of the module by the LED directly below the middle RJ45 connector. Green means that the module is working correctly. Red means that the module is starting, or that there is a problem. Off means the module is powered down.
Ethernet links (LED)	Two LEDs built into the middle RJ45 connector. ■ Left LED Ethernet Link/Activity. ■ Right LED Ethernet speed, off for 10 Mbps or green for 100 Mbps.
HDBaseT link (LED)	Indicates the link status by the LED directly below the left and right RJ45 connectors. There is a green LED for the HDBaseT status and red LED for the HDMI status, they can combine to make orange.

LED status patterns	No Link	Ethernet Fallback	HDBaseT
No HDMI	off	fast green/off	green
HDMI with HDCP	red	orange/off	orange
HDMI without HDCP	red/off	orange/red/off	orange/green

If any status indicator stays red, restart your CORIOmaster2™. If that doesn't work, contact tvONE support. Contact details are at the back of this guide.

About your HDMI input and output module

The High-Definition Multimedia Interface (HDMI™) modules are a proprietary audio/video interface for transmitting uncompressed video data and compressed or uncompressed digital audio data from an HDMI-compliant source device.

See our range of active optical cables and signal extenders at help.tvone.com/r/docs/g/signal-extension

STATUS (LED)	Indicates the status of this module. Green means that the module is working correctly. Red means that the module is starting, or that there is a problem. Off means the module is powered down.

If any status indicator stays red, restart your CORIOmaster2™. If that doesn't work, contact tvONE support. Contact details are at the back of this guide.

What does the status LED under the HDMI connector mean?

HDMI (LED) Indicates the status by the LED directly below the HDMI connectors on supported modules.

LED status patterns	
off	No signal
green	Valid signal with HDCP 2.2
green/short off	Valid signal with HDCP 1.4
orange	Valid signal without HDCP
red	HDCP problem
red/off	Fault or unrecognized resolution

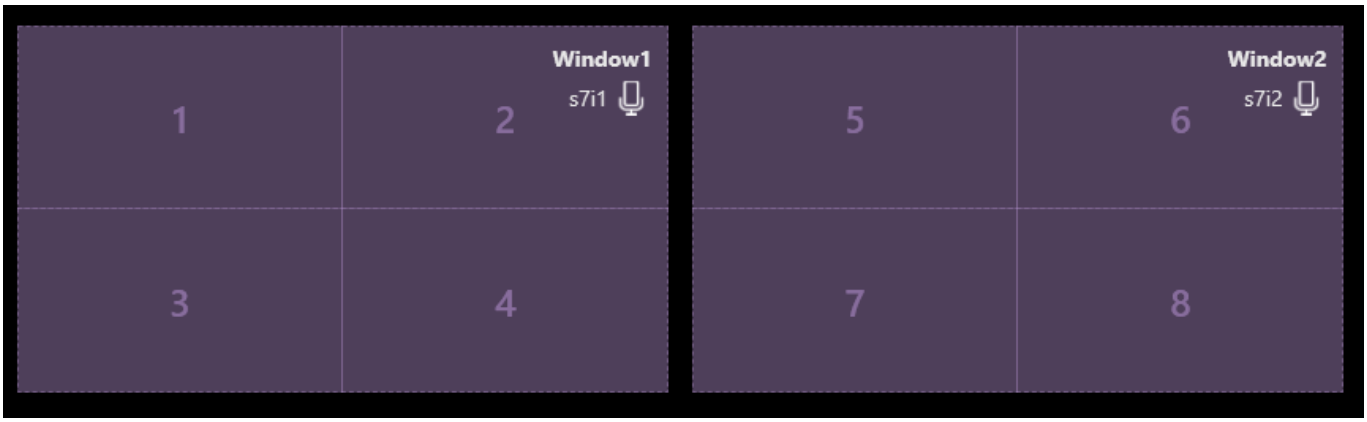
8HD Player – Synchronized playback mode

> The streaming media and 4K playback module has two different operating modes.

The 8HD player is designed to play up to 8x 1080p30 media files from the module's internal drive. Playback will occur in perfect synchronization into each of the four quadrants of a UHQ (4K) window and in this mode two of these windows are available to place on a canvas.

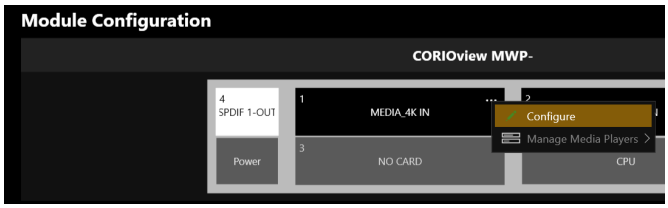
For example four files are shown with one 4K30 window. A media file has been cut in to 4x 1080p30 files.

In synchronized mode the windows placed on the canvas from the module are as shown. The window is separated in to four quadrants by dotted lines and the quadrants are numbered from 1 to 4 on the first window and from 5 to 8 on the second window.

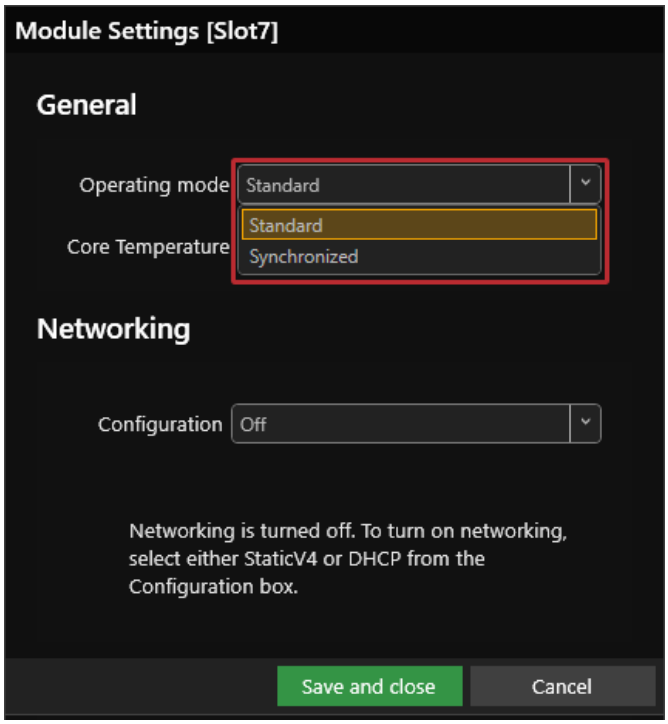


How to change the operating mode?

1. To change the operating mode in CORIOgrapher, select ⚙ Settings > Module Configuration
2. Find the Streaming media and 4K playback module that you want to set up, and select ••• > Configure



3. Change the operating mode from Standard to Synchronized.

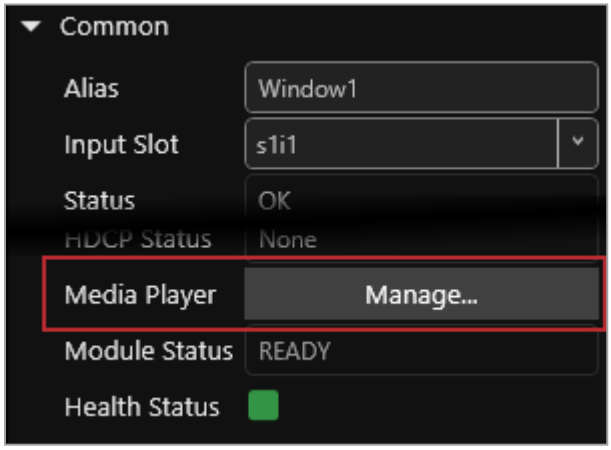


4. Select Save and close to change operating mode.
5. The Streaming media and 4K playback module will reboot into the synchronized mode.

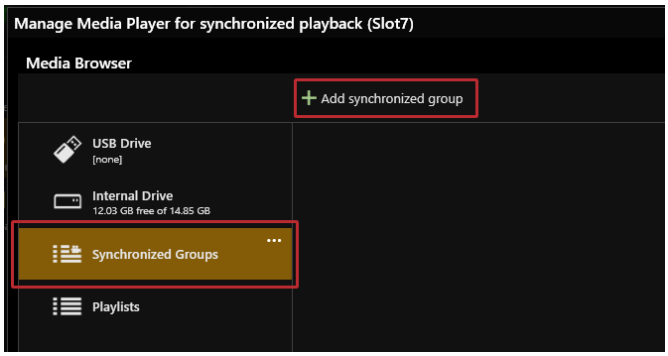
How do I setup and play my media?

To playback the files we must set up at least one synchronized group.

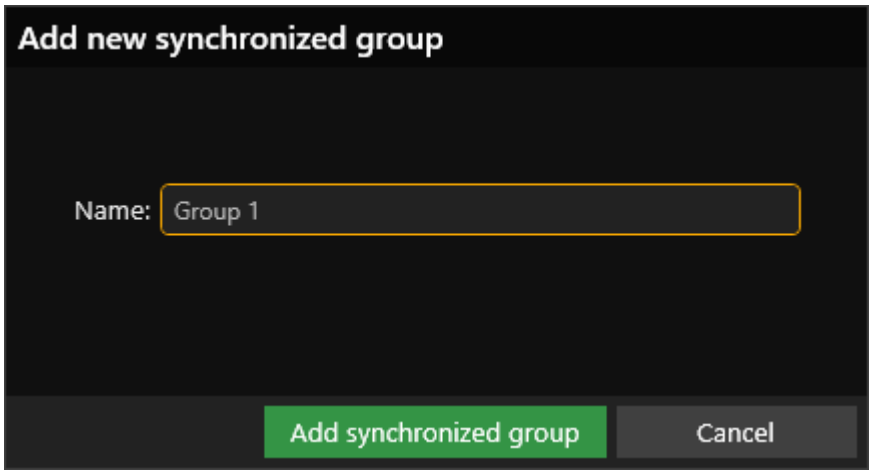
1. Double-click the window you wish to play media, and from Properties, select (Media Player) Manage.]



2. Select Synchronized Groups then + Add synchronized group

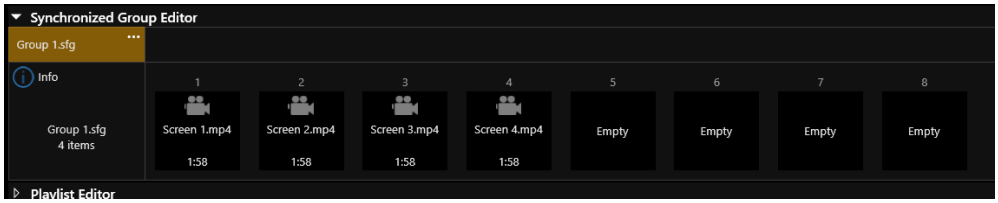


3. Give your group a name (must be unique and max of 64 characters)

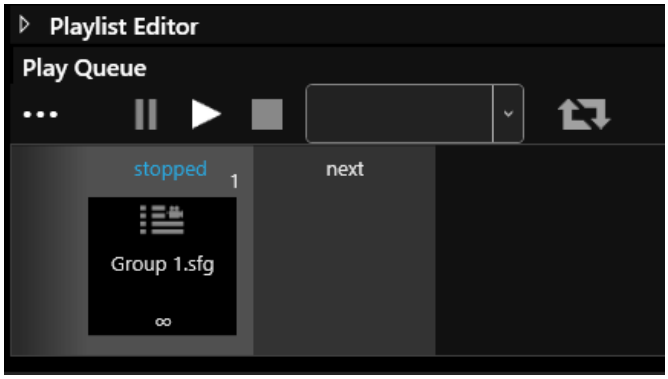


4. Drag and drop files from your Internal Drive to each empty slot (up to 8)

> The files can be in any order in the group, but they will play back into the quadrant for the number selected, for example a clip placed in position 8 will playback in the quadrant numbered 8.



5. Synchronized groups can now be added to a playlist

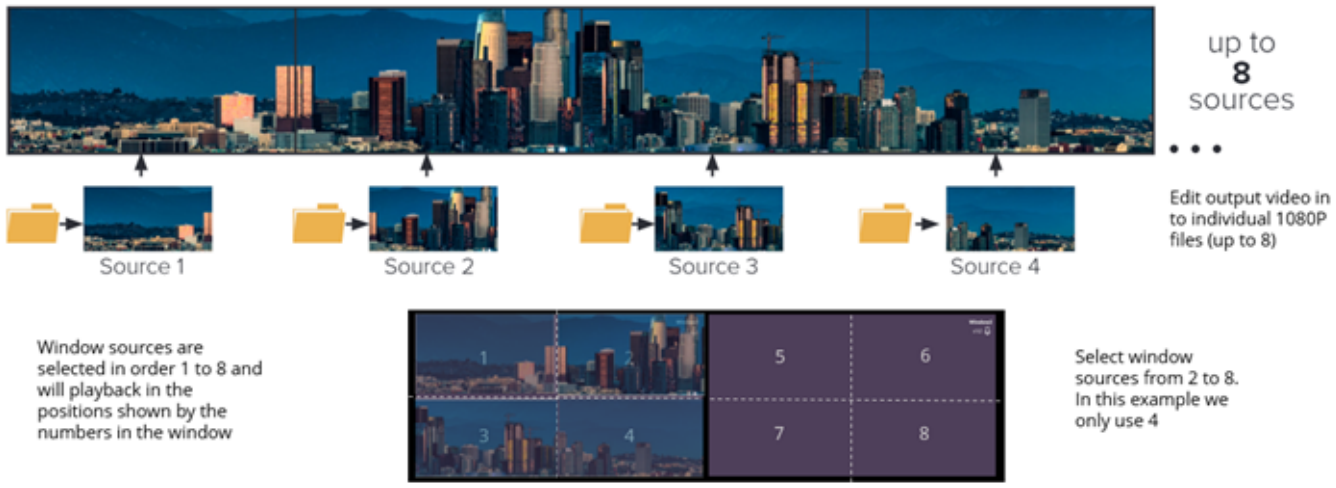


Notes about playing media

- Media files should be the same resolution and frame rate
- Ideally, they should be from the same source, for example a video belt, but they can be different files.
- The longest file will determine playback time for the group and if there are shorter files the window will hold the last frame until the last file has finished playing before moving to the next synchronized group in the playlist or repeat if you have that option selected.
- The files should have the same presentation timestamps (PTS) to be frame synchronized for playback.
- Audio for the window is taken from the clip in position 1 only
- Only synchronized groups can be added to a playlist (not individual media files or stills)
- Synchronized groups can only be added to a play queue when the module is in synchronized mode.

How to position displays and windows?

For example displays 1 through 4 must be physically placed under the correct window quadrant on the canvas for the content to playback into the correct display.



The displays must be positioned physically under the window content as the window cannot be split in to separate parts.

Four 1080p30 files can playback in to one 4K30 window.

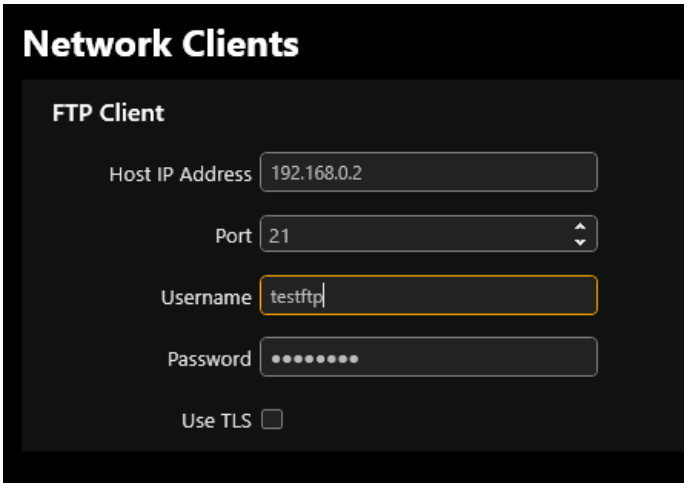
FTP Server media synchronization

Media files can now be synchronized to your streaming media and 4K playback module over a network from an FTP server.

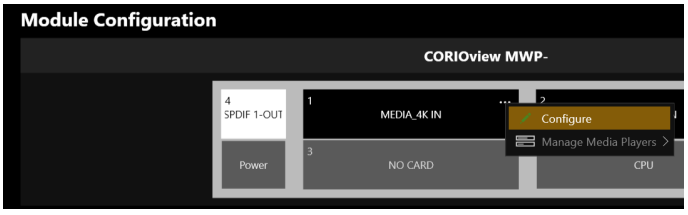
First set up your FTP server. The FTP server needs to be on the same network as your Streaming media and 4K playback module. Set up a user with a username and password.

Set up a shared folder for the user on your FTP server where you can put your contents. Your FTP settings must point the server to the shared folder.

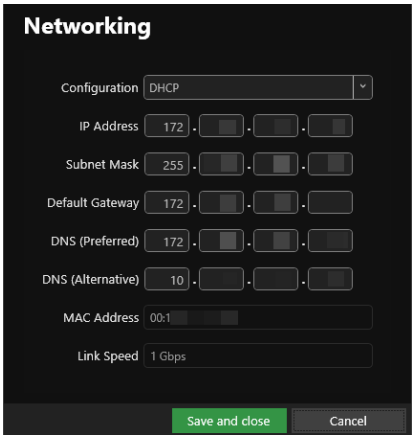
Set up its credentials in CORIOgrapher™ by navigating to settings then network clients. Enter your FTP server IP address, port, username, and password.



Connect your Streaming media and 4K playback module to the network and navigate to module configuration. Go to the module and click the ••• in the top right-hand corner then select Configure from the drop-down menu.



Go to Networking and select DHCP to obtain an IP address automatically or set up a static IP address. Save and close to confirm the settings.



To synchronize the shared FTP folder with the streaming media and playback module send the following API command using an external device or by using the console in CORIOgrapher.

(Slot<N>.Storage.Local.StartFTPSync())

<N> is the slot number where your media streaming and playback module is installed.

As an example where your streaming media module is in slot number 2 the following API command should be sent **Slot2.Storage.Local.StartFTPSync()**

If this was done for the first time a folder will be created in the root of the Internal Drive in the module called **ftpc**. Inside this folder two further ones will be created, **content** and **staging**. The FTP server will now synchronize with a folder on the module's internal drive. Files are first copied to the staging folder and once downloaded will be moved to the content folder.

All new files will be copied

Files with the same file name as already stored files will be copied if the file is different and will replace files on the Internal Drive in playlists the next point of playback. Files cannot be deleted on the module’s internal drive by synchronization. This must be done manually.

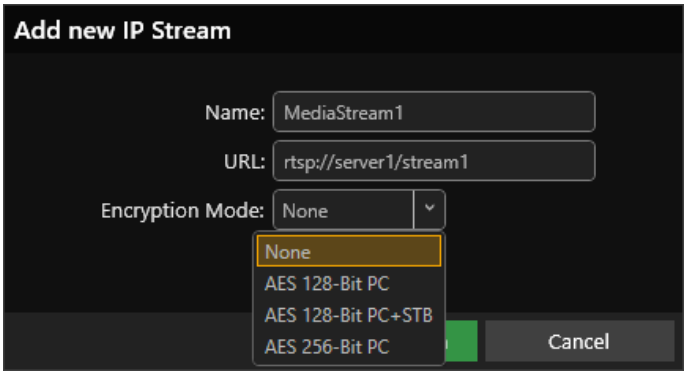
It is important to note that the credentials for the FTP server are not set up per module but per CORIOmaster chassis. If you have more than one module in your chassis, they will need to synchronize with the same server and therefore will all receive the same files. Each module though will need to be synchronized separately as the API command is by slot number. Each module can select which files to play using playlists.

AES file decryption

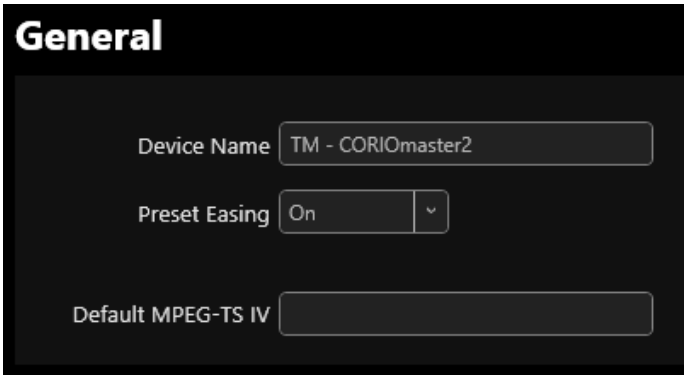
AES encrypted streams can be decrypted by the module. The streams must have been encoded using the AES CBC method and have 128 bit or 256 bit encryption keys. The streams must also be MPEG-TS streams.

Each stream needs an encryption mode key and an IV code. The encryption mode key is per stream and the IV is a 128 bit code that is for the whole system.

Select the type of stream encryption when adding the new IP stream



Add the HEX encryption key for the stream into the stream properties box. The key will be provided by the stream provider.

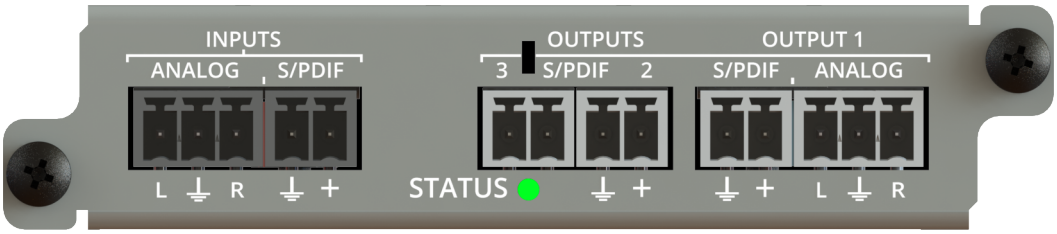


Enter the Default MPEG-TS IV into the General area in settings. The IV must be set as this is used for every item in the queue and the user cannot edit this value per stream.

Help If you need help to set up AES then contact your distributor, or tvONE support.

About your S/PDIF and analog audio module

You can use 3.5 mm terminal block connectors to connect to a range of audio inputs and outputs.



INPUTS, ANALOG	Connect an analog audio device.
INPUTS, S/PDIF	Connect a digital audio device.
OUTPUT 1 S/PDIF ANALOG	Connect an analog or digital device to play audio from the video installation on canvas 1.
OUTPUT 2	S/PDIF output. Connect a digital device to play audio from the video installation on canvas 2.
OUTPUT 3	S/PDIF output. Connect a digital device to play audio from the video installation on canvas 3.
STATUS (LED)	Indicates the status of the module. Green means that the module is working correctly. Red means that there is a problem.

If any status indicator stays red, restart your CORIOmaster2. If that doesn't work, contact tvONE support. Contact details are at the back of this guide.

Supported formats

The S/PDIF and analog audio module supports all audio formats outputted as PCM with a frequency of 48 kHz.

Inputs

Your S/PDIF and analog audio module has two inputs, one analog and one digital input.

You can use inputs from the S/PDIF and analog audio module as breakaway audio only.

> **What's breakaway audio?**
>
> Breakaway audio is independent of the windows on your video wall. It doesn't change when the sources playing in your windows change. The audio is sent to all enabled outputs.

Outputs

Your S/PDIF and analog audio module has three outputs. Each output is locked to a canvas in the Editor. Output 1 is locked to canvas 1, output 2 is locked to canvas 2, and so on.

Output 1 has one analog and one S/PDIF digital port. You can send the same output to both ports, but you cannot send a different output to each port. Because output 1 is locked to canvas 1, only canvas 1 is capable of sending both analog and digital audio.

To choose a canvas, select a canvas number from Canvas.

Outputs 2-3 each have one digital S/PDIF output.

Hardware recommendations

At tvONE, we design our products to the highest quality standards. To get the best results from our products, we recommend that you use the best quality connectors, cables, and adapters. Consider the points below when you choose accessories and position equipment.

- For best results at resolutions of 1080p60 or below with HDMI or DVI, use cables under 15 m long, or shorter if you use connection adapters. If you need to place your products more than 15 m apart, use active optical cables or a signal extender.

  For best results at resolutions of 4K60 or higher with HDMI, use cables under 2-3 m, or shorter if you use connection adapters. If you need to place your products more than 3 m apart, use active optical cables or a signal extender.

  See our range of active optical cables and signal extenders at help.tvone.com/r/docs/g/signal-extension.
- For best results with HDMI, use High Speed, Premium High Speed, or Ultra High Speed HDMI cables.
- For best results with DisplayPort, use certified cables under 2 m long.
- In industrial environments, use shielded Ethernet cables.

  Shielded Ethernet cables are often marked F/UTP, FTP, or STP. Use shielded Cat 6 or above cables with HDBaseT input and output modules and Streaming media and 4K playback input modules.
- Use good quality USB 3.0 drives.
- For more hardware recommendations for your product, see the specification sheet.

Read more about HDMI at hdmi.org.

Read more about DisplayPort at displayport.org.

Get help with your Magenta Encoder-100

The Magenta Encoder-100 works with your CORIOmaster2™ product.

Read about configuring your Magenta Encoder-100 at help.tvone.com/r/docs/cm2/encoder-100/1.

Set it up

This section contains everything you need to know about installing and setting up your video installation with CORIOmaster2™ and CORIOgrapher™.

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- Planning a video installation 23
- Installing your hardware 24

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- CORIOgrapher™ system requirements 27
- About CORIOgrapher™ 28
- Getting started with CORIOgrapher™ 29
- Naming input and output ports and channels 31
- Enabling secure mode 33
- About HDCP 34
- Keying windows on your CORIOmaster2™ 38
- Creating a video installation 41
- Testing your video installation 45
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  - Naming your CORIOmaster2™ 49
  - Choosing your working units 49
  - Customizing the front panel of your CORIOmaster2™ 50
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  - Resetting your CORIOmaster2™ to factory default settings 52
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  - Configuring network settings for streaming media 57
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Planning and installing video installations

The first step towards creating a video installation with your CORIOmaster2™ is planning and setting up your hardware.

In this section

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Planning a video installation

It's really helpful to write a plan before you start installing. A plan saves you time and effort later, and helps you make sure you have all the equipment you need.

Download the printable plan from help.tvone.com/r/docs/cm2/home/1

If you can't print and fill out the plan, think about the following questions:

Overall effect

- What do you want your video wall to look like?
- How large is your video wall?
- What do you want to accomplish?

Displays

> Video tearing
> Using a mixture of frame rates and/or resolutions can cause video tearing. For best results, make sure all your displays use the same frame rate.

- How many displays do you need?
- What sizes are the displays?
- What are the bezel sizes of the displays?
- What is the native resolution of each display?
- Do you need displays that support HDCP (High-bandwidth Digital Content Protection)?
- How many projectors do you need?
  - Do you need to blend the edges of displays?
  - How much overlap do you need?

Sources or inputs

- What types of source do you need?
- What is the native resolution of each source?
- What is the frame rate of each source?
- Will the sources be available at all times that the video wall is operating?
- Is there any switching or processing before the source reaches your CORIOmaster2™?

Windows

- How many windows do you need to create the effect you want?

  Include all windows, even those that are not active all the time.
- What level of quality do you need for each window?

  In some cases, you can't have the highest quality for all your windows. Which windows can be lower quality?

What is a window?

A window is a container for a source input. You can have multiple windows playing the same source. You can resize, move, and rotate windows in the video wall editor.

Presets

- Do you want to use presets in your video wall?
- What type of control system will you use to operate the video wall and change between presets?

What is a preset?

A preset stores information about windows, including positions, transitions, and effects such as borders or rotation. You can save presets and recall them later from the dashboard.

Installing your hardware

Once you have planned and collected your hardware, you can set it up. First install your displays and place your sources. Then connect your displays to your output modules and your sources to your input modules.

Who can do this?

Anyone can do this task, but we recommend that you consult a qualified AV installer.

Placing your CORIOmaster2™ and displays

When you decide where to place your hardware, consider these points:

- Availability of electrical outlets
- Distance from CORIOmaster2 to sources and displays

  For best results at resolutions of 1080p60 or below with HDMI or DVI, use cables under 15 m long, or shorter if you use connection adapters. If you need to place your products more than 15 m apart, use active optical cables or a signal extender.

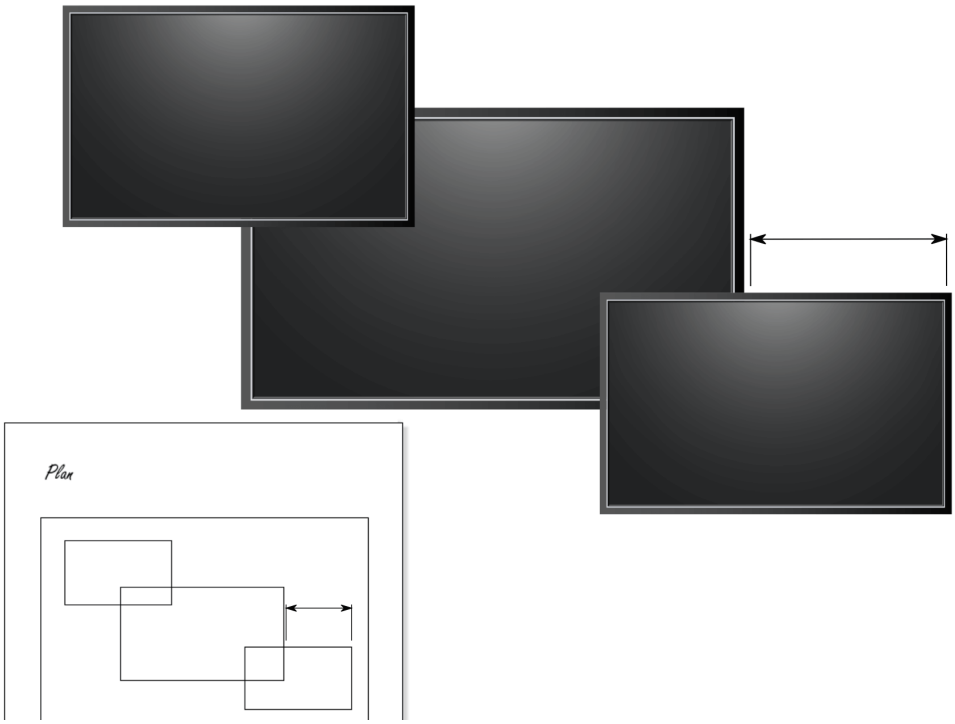
  For best results at resolutions of 4K60 or higher with HDMI, use cables under 2-3 m, or shorter if you use connection adapters. If you need to place your products more than 3 m apart, use active optical cables or a signal extender.

  Read about our adapters on page 9.

  See our range of active optical cables and signal extenders at help.tvone.com/r/docs/g/signal-extension.
- Make sure your devices are within the operating specification.
- Installation environment

  In industrial environments, use shielded Ethernet cables.

Position your displays and sources



1. Use your plan to help you position your displays, which can be screens and/or projectors.
   Make sure you note all the measurements, so you can make an accurate video wall in CORIOgrapher™.
2. Position your sources. Follow the advice above when you choose where to put your sources.
3. Connect your displays or projectors to the output modules of your CORIOmaster2.

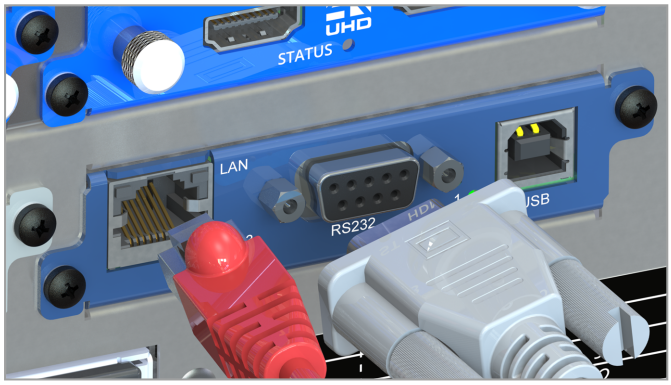
It is recommended to use a cable mount to reduce the stress on the connector caused by heavy cables. See the installation instructions that came with your module or device.

Keep a note of which display is connected to which port. You can use this information later when you name inputs and outputs in CORIOgrapher. You can also label the inputs and outputs directly.

4. Connect your sources to the input modules of your CORIOmaster2.

Keep a note of which source is connected to which port. You can use this information later when you name inputs and outputs in CORIOgrapher.

5. Connect your CORIOmaster2 to your network. If you want to control your CORIOmaster2 with a serial controller, connect a serial controller.



6. Connect your CORIOmaster2 to an electrical outlet and power on.

Optional redundant PSU requires connection to a separate electrical outlet.

You can now create your video wall in CORIOgrapher.

Setting up a video installation in CORIOgrapher™

When you've finished installing your hardware and connected everything to your CORIOmaster2™, you can create your video installation in CORIOgrapher.

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Creating and testing your first video installation

Learn how to create and test a basic video installation.

- Creating a basic video installation
- Testing your video installation

CORIOgrapher™ system requirements

CORIOgrapher:

- Works with PCs running Windows® 10 and 11
- Does not work with touch-screen-only devices, including tablets or phones
- Works with Microsoft Surface Pros and similar touch screen devices
  Full support for touch screen devices is under development
- Installs Windows .NET 4.8, if you don't have it
- Needs 600 MB of disk space during installation
- Is approximately 60 MB in size once installed

To use the preview feature, your PC must have Windows Media Player installed, and it must have been launched at least once. Preview performance depends on the specifications of your PC and number of windows in your installation.

About CORIOgrapher™

CORIOgrapher is the software that controls your CORIOmaster2™. You can create up to three video installations, with multiple screens and windows, and add transitions and effects for a state-of-the-art dynamic video installation.

CORIOgrapher main areas

Home

Home is where you connect to a device, load a configuration from a file, or create an offline configuration.

Editor

CORIOmaster and CORIOmaster2 only.

Editor is where you create your installations on each canvas.

- If you have a CORIOmaster or CORIOmaster mini, you can create up to four canvases.
- If you have a CORIOmaster micro, you can create up to two canvases.
- If you have a CORIOmaster2, you can create up to three canvases.

Dashboard

Dashboard is where you control the actions of your canvases.

Standby

CORIOview and CORIOmaster micro only.

Standby puts your device into standby mode.

Help

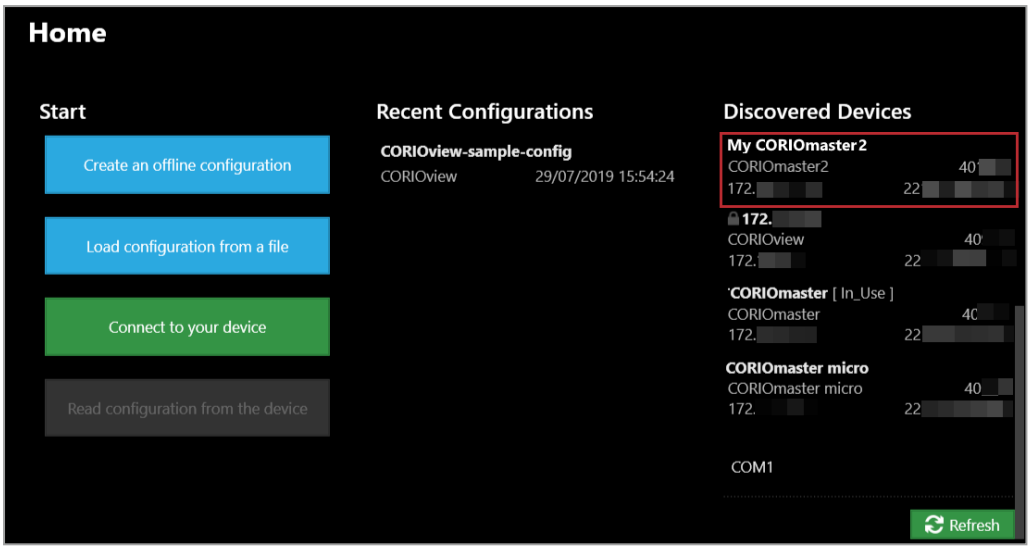
Help opens tvONE help for your product.

Settings

Settings is where you configure your system, network, modules, and more.

Getting started with CORIOgrapher™

When you first open CORIOgrapher, you see Home.



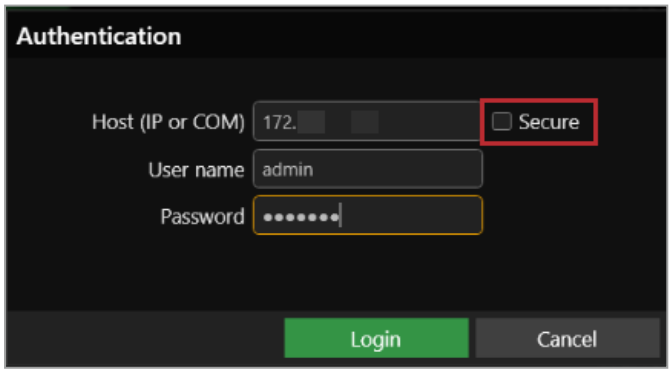
- If you've already set up your hardware, you can connect to your CORIOmaster2™ and get information about its configuration of modules.
- If you haven't set up your hardware yet, you can create a configuration offline. Or, you can load a configuration from a file, if you have one. You can save your configuration, and send the configuration to your CORIOmaster2 later. You can also use saved configurations to configure other CORIOmaster2 units.

Read about setting up hardware on page 24.

To connect to your CORIOmaster2 and get its configuration

The easiest way to get started using CORIOgrapher is to get the configuration of inputs and outputs directly from your CORIOmaster2.

1. From Home, select your CORIOmaster2 from Discovered Devices.
   If your CORIOmaster2 isn't in the list, select Refresh.
   If you can't see your CORIOmaster2, read troubleshooting advice on page 122.
2. Enter your administrator login details.
   When you first log in as an administrator, enter the username `admin` and password `adminpw`. Leave the Secure option clear.



   If Host (IP or COM) doesn't contain an IP address, read troubleshooting advice on page 123.
3. When you are logged in to your CORIOmaster2, select Read to get its configuration.

To log in with secure mode

You can communicate securely with your CORIOmaster2. To use secure mode, enable secure mode.

Read about enabling secure mode on page 33.

When secure mode is active, in Home you can see a lock next to the name of the CORIOmaster2.

To create a configuration offline

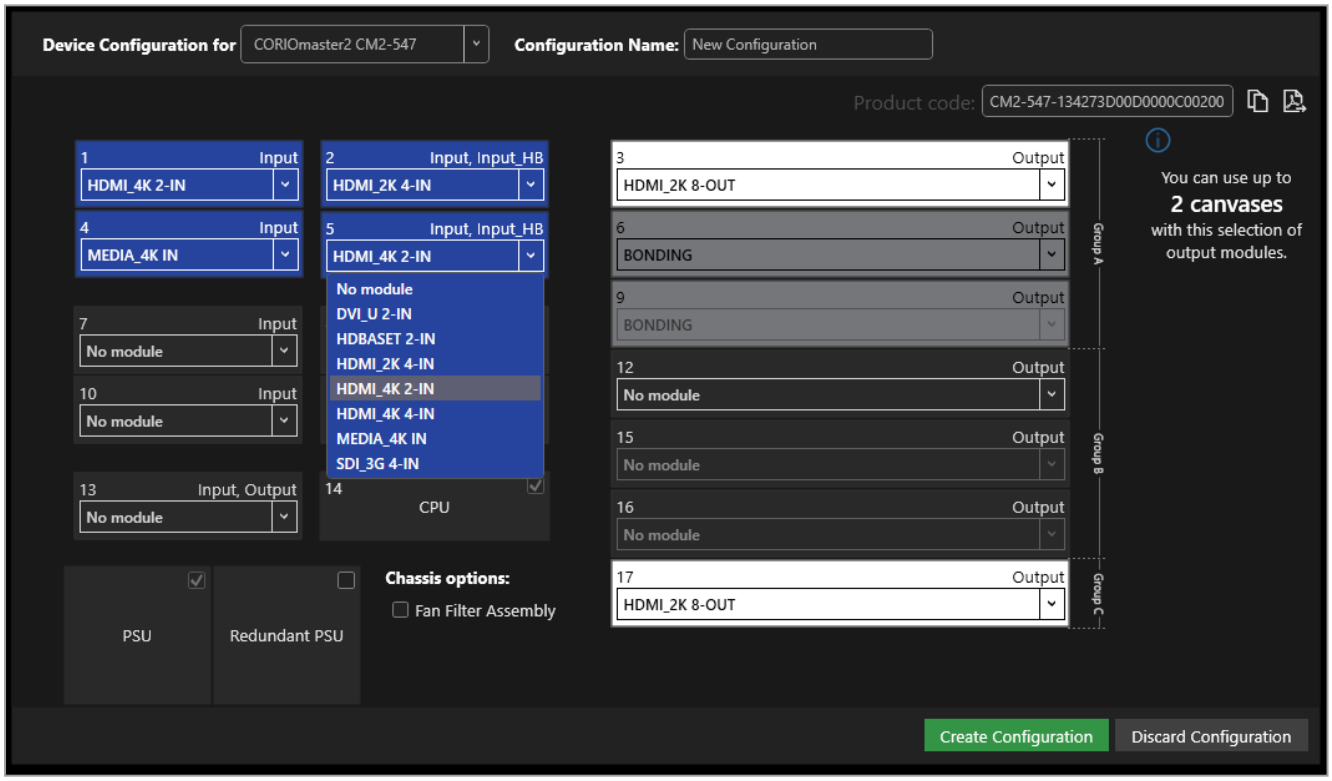
You don't need to be connected to a CORIOmaster2 to create video installations, but you do need to recreate the configuration of your CORIOmaster2 so that you're using the correct inputs, outputs, bonding modules, and devices.

You can also create offline configurations to help you decide what hardware you need.

1. From Home, select Create an offline configuration.
2. In Configuration Editor, choose a device, and give your configuration a name.
3. If you have a product code, enter it in Product code to automatically populate your modules.

OR

4. If you do not have a product code, for each slot, choose a module from the list.



- The number of slots available depends on your device.
- You don't have to use all the slots.
- If you are creating a configuration for an existing CORIOmaster2, match your configuration to the modules of your CORIOmaster2.
- If you are creating a configuration to help you decide what modules you need, there are some guidelines on where to put your modules.

  Read about the configuration of a CORIOmaster2 on page 3.

5. OPTIONAL: You can copy the product code to the clipboard, so you can paste the product code in to your email or document.

6. OPTIONAL: You can export the product configuration summary to a PDF file to include in your documentation.

> Peripherals may have to be manually set.

> You should export your configuration to a PDF file before selecting Create Configuration, as you will not be able to do this later.

To send a configuration to your CORIOmaster2

You can send a configuration to your CORIOmaster2 from Home. You can either create a configuration offline, or load a saved configuration.

1. Create or load a configuration.
2. In Home, select your device from Discovered Devices and enter your administrator login details.
   The default username is `admin` and the default password is `adminpw`.
3. Select Send.

Naming input and output ports and channels

You can name the input and output ports and channels for each slot in CORIOgrapher™.

Why should I name input and output ports and channels?

CORIOgrapher uses aliases to give each input or output port or channel in each slot a unique name. For example, the first port in slot 1 is named s1i1 for slot 1 input 1. These unique identifiers tell you the position, but not what is connected to that input or output.

Name your ports and channels with something that indicates what is connected to the port, or playing on the channel. Doing this can help you identify what is what in your configuration, and makes it easier for you to see quickly which source is playing in which window. For example, you might rename s1i1 to Camera 1.

Naming the channels of a Streaming media and 4K playback input module

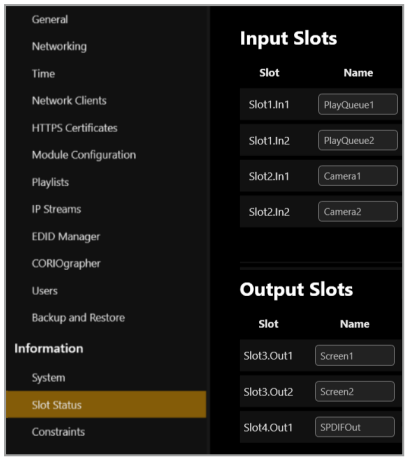
The Streaming media and 4K playback input module has two channels. Each channel refers to a play queue, not to a specific streaming source. If you intend to build play queues with multiple sources, for example, one or two streaming sources and media items from a USB drive, then consider unique names such as PlayQueue1 and PlayQueue2. If you intend to always have just one streaming source in a play queue, then you could use names like WOWZAstream, or LectureTheatreStream.

Naming rules

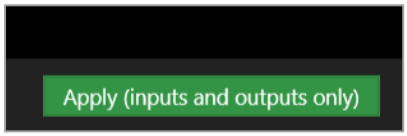
Names must be unique and start with a letter. They can contain letters, numbers, and underscores, and can be up to 21 characters long.

To name input and output ports

1. In CORIOgrapher, select Settings > Slot Status.
2. For each port, enter a useful name.



3. To save your new names, select Apply (inputs and outputs only).



If you are creating an offline configuration, select Editor > Save to file.

Enabling secure mode

You can use secure mode to encrypt information you send and receive from your CORIOmaster2™.

About secure mode

Secure mode uses HTTPS to encrypt all communication between CORIOgrapher™, or another secure controller, and your CORIOmaster2. HTTPS encryption uses TCP port 443.

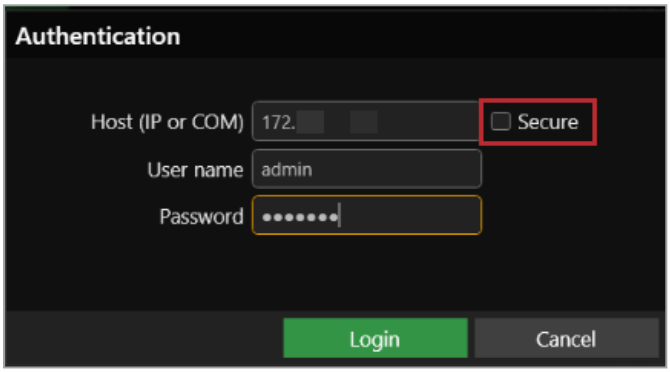
When secure mode is active, in Home you can see next to the name of the CORIOmaster2.

> Secure mode disables unsecured connections over Ethernet. Unencrypted third-party controllers do not work over Ethernet when you use secure mode. You can still use unsecured controllers that are connected directly to your CORIOmaster2, using the serial port of the CPU module.

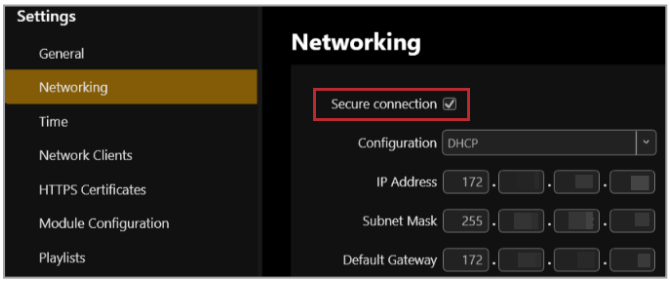
Read troubleshooting advice on page 125.

Enabling secure mode

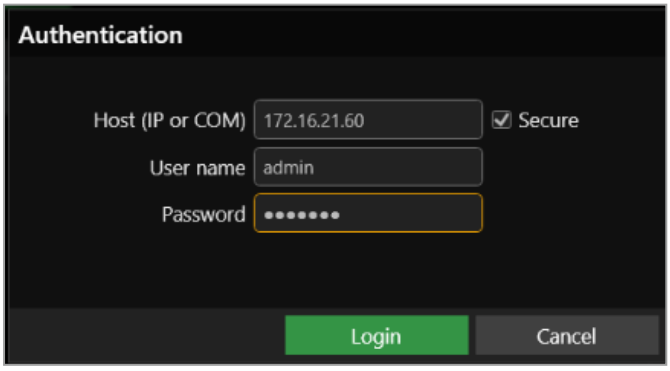
1. Clear the Secure option and log in to CORIOgrapher.



2. Select Settings > Networking.
3. Select Secure connection.



4. Select Save > Yes. CORIOmaster2 restarts.
5. Select Secure and log in.



About HDCP

What is HDCP?

High-bandwidth Digital Content Protection (HDCP) is a form of digital copy protection developed to prevent copying of digital audio and video content as it is sent between devices, for example protecting the content as it travels from a Blu-ray player to an amplifier to your TV.

What support does my CORIOmaster2™ have for HDCP?

Your CORIOmaster2 can support video inputs and displays with no HDCP or with HDCP versions 1.4, or 2.2 when using supported modules.

Read about modules on page 8.

How does my CORIOmaster2 handle mixing of HDCP versions?

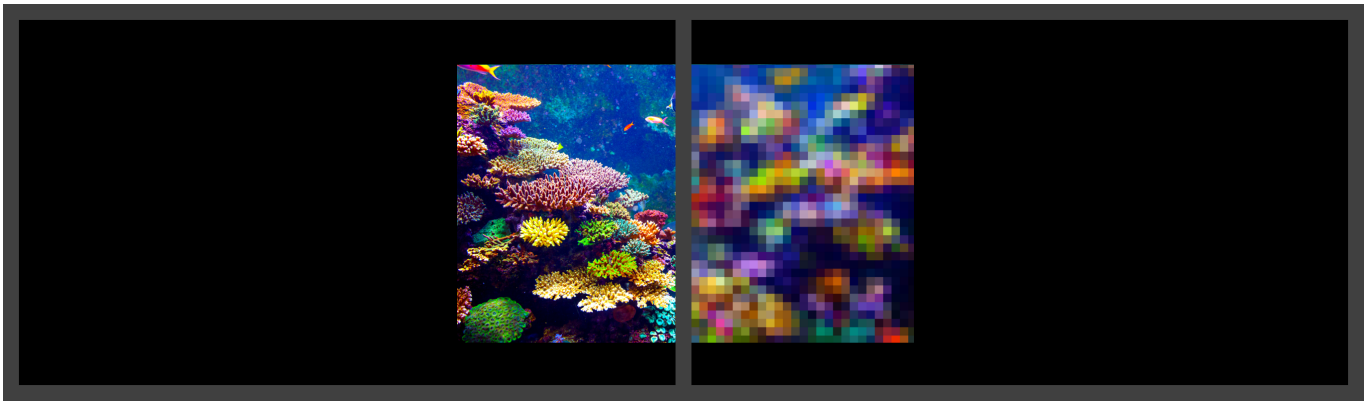
CORIOmaster2 will pixelate the portion of a window on displays that are using a lower HDCP encryption than required by the input sources, for example a Blu-ray player.

Use this table to identify HDCP compatibility between your sources and displays:

		Displays		
	HDCP versions	**None**	**1.4**	**2.2**
Sources	**None**	✔	✔	✔
	1.4	Pixelated	✔	✔
	2.2	Pixelated	Pixelated	✔

Show me an example of window pixelation

The left display has HDCP encryption high enough for the input source, but the right display doesn't, so the part of the window shown in the right display is pixelated.



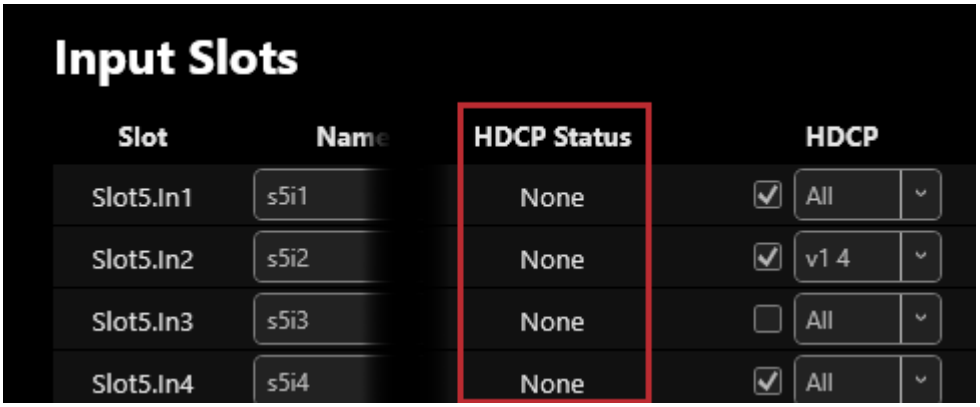
How do I change the HDCP version of an input?

Your CORIOmaster2's inputs negotiate with each connected source which version of HDCP to use, and the source will then make decisions on how to present the content, which may be no video.

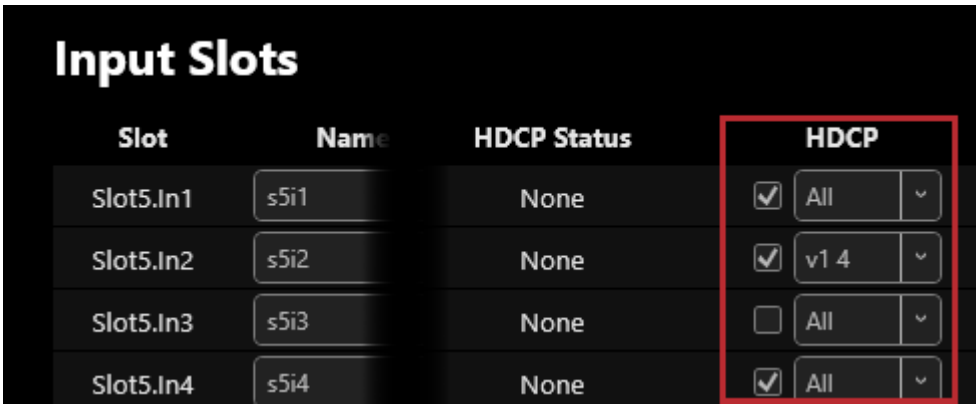
You can choose to disable HDCP support, and on supported modules which version the input will try to negotiate. This may help to force the source to send content in a particular version, for example you have HDCP 2.2 sources but only HDCP 1.4 displays.

- **Bulk updating the input HDCP properties**

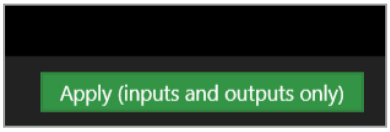
1. In CORIOgrapher, select Settings > Slot Status.
2. When connected to your device the HDCP Status will automatically update to show the version negotiated with the source.



3. For each port, select if HDCP is enabled and if available which HDCP version to negotiate with the source.



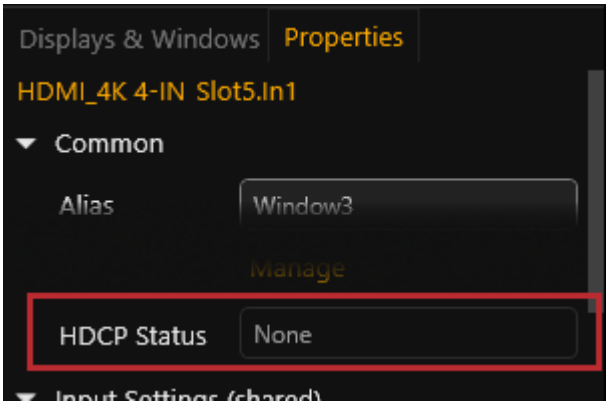
4. To save your changes, select Apply (inputs and outputs only).



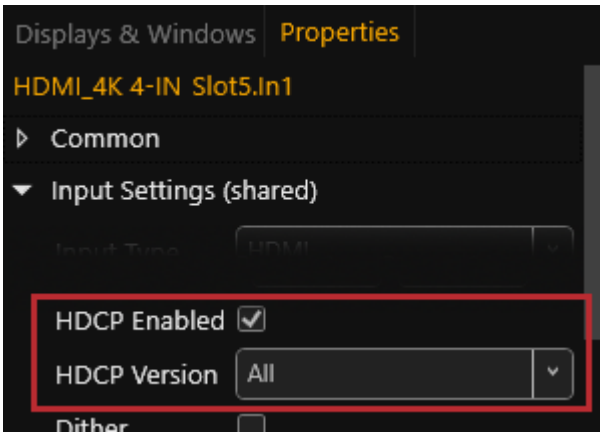
5. If you are creating an offline configuration, select Editor > Save to file.

- **Individually from each window**

1. In CORIOgrapher, select Editor, double-click the window to open Properties,
2. When connected to your device the HDCP Status will automatically update to show the version negotiated with the source.



3. If you do not require HDCP you can disable it by clearing the HDCP Enabled option, or if available, select the HDCP Version which will force the input to try to negotiate that version with the source.



4. When you are happy, select Take and then Set device startup to save the take on your CORIOmaster2, so your changes will be restored on start up.
5. If you are creating an offline configuration, select Save to file.

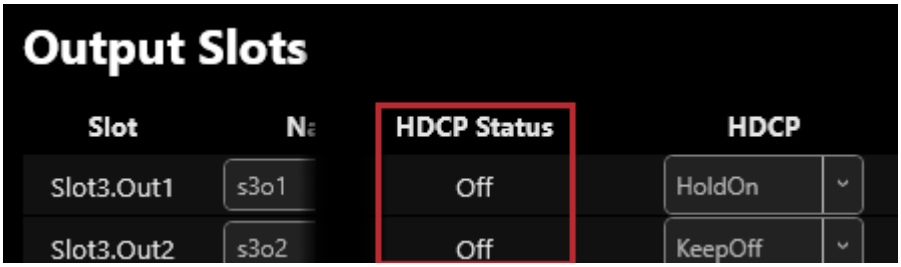
How do I change the HDCP support of an output?

Your CORIOmaster2's outputs negotiate with each connected display which version of HDCP to use.

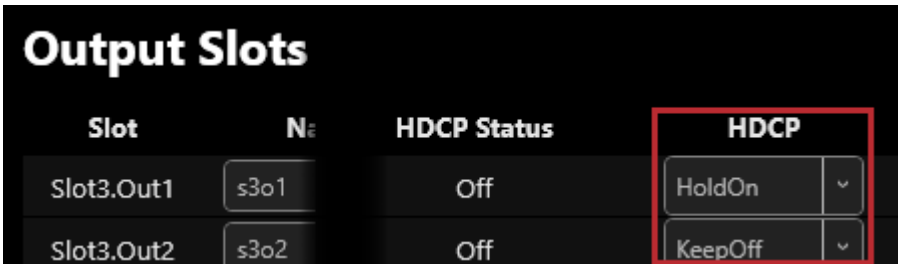
> You are not allowed to output HDCP encrypted content on unencrypted or lower HDCP version displays.

- **Bulk updating the output HDCP properties**

1. In CORIOgrapher, select Settings > Slot Status.
2. When connected to your device HDCP Status will automatically update to show if HDCP is active.

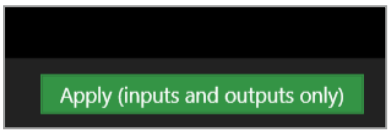


3. For each port, select the HDCP mode to tell the output how to handle the display.



   - HoldOn: Keeps HDCP active
   - KeepOff : Turns off HDCP

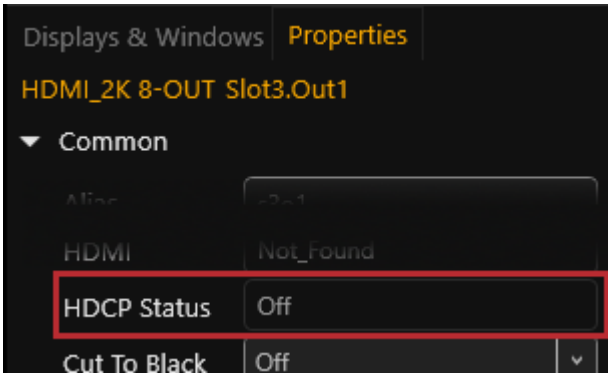
4. To save your changes, select Apply (inputs and outputs only).



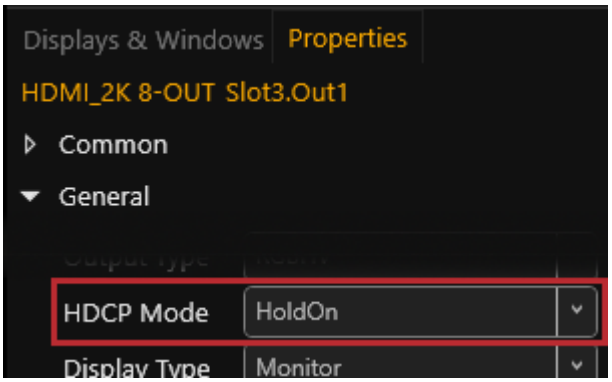
5. If you are creating an offline configuration, select Editor > Save to file.

- **Individually from each display**

1. In CORIOgrapher, select Editor, double-click the display to open Properties,
2. When connected to your device HDCP Status will automatically update to show if HDCP is active.



3. Select the HDCP Mode to tell the output how to handle the display.



   - HoldOn: Keeps HDCP active
   - KeepOff : Turns off HDCP

4. When you are happy, select Take and then Set device startup to save the take on your CORIOmaster2, so your changes will be restored on start up.
5. If you are creating an offline configuration, select Save to file.

Keying windows on your CORIOmaster2™

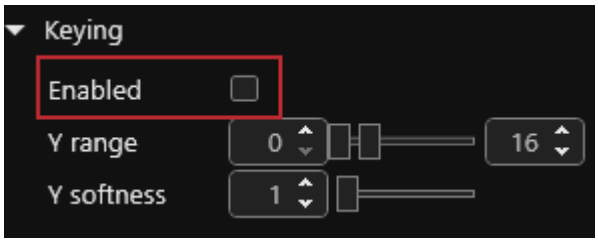
Your device supports luminance keying on all modules. Keying makes parts of the window become transparent in real time.

What is Luminance keying?

Luminance keying determines background objects from foreground objects by the difference in the luminance (brightness) levels.

How to enable keying on a window?

1. From Editor, double-click the window you want to enable keying on.
2. From Properties, open Keying > check Enabled.



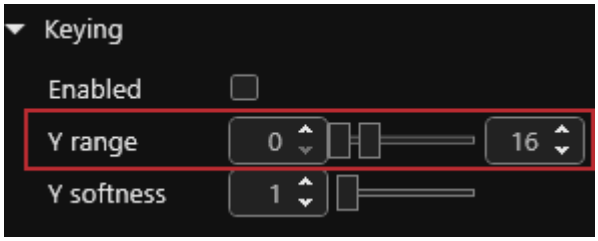
is shown on a window when keying is enabled.

Keyed windows can use as much as three times the bandwidth of un-keyed windows.

Sources that have very thin lines may show scaling artifacts at certain window sizes. Try adjusting the size by a small amount.

Window borders will still work but are not keyed.

3. Adjust the Y range upper and lower sliders to choose the luminance range to be keyed.



To key through black set the sliders to 0 and 16.
To key through white set the sliders to 240 and 255.

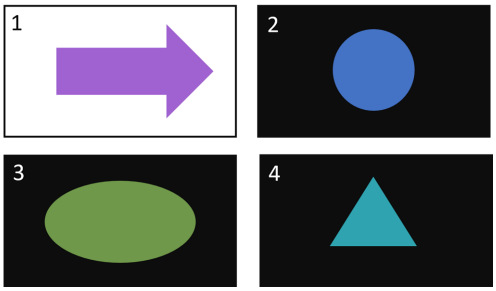
4. Adjust the Y softness slider to choose how much anti-aliasing is used to soften the edges.

Why are my overlapping windows not keying like I expected?

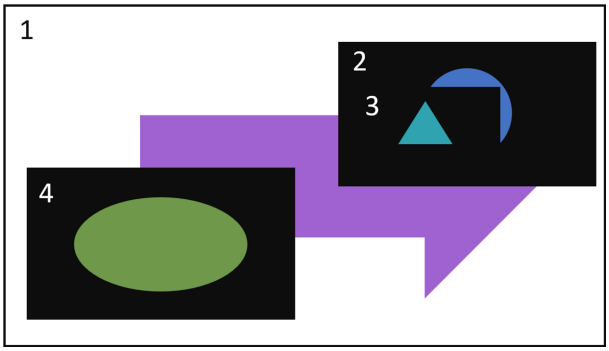
Window keying is only between two windows or the black background of the canvas. If your keyed windows overlap then you many get undesirable results.

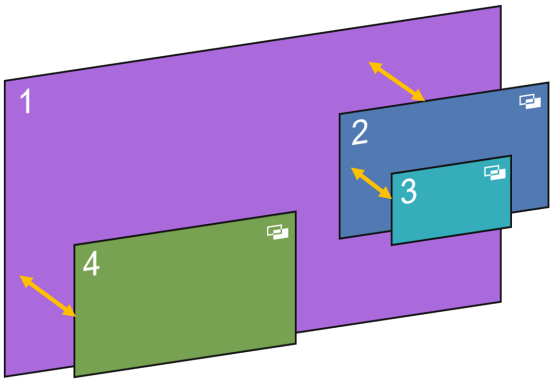
Here is an example of what you might see. Window 1 is the background, window 2 and 3 are overlapping keyed windows, and windows 4 does not overlap other keyed windows.

- Sources of the windows

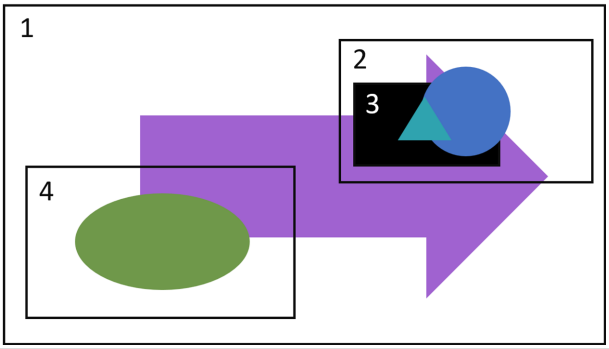


- Display with all window keying turned off





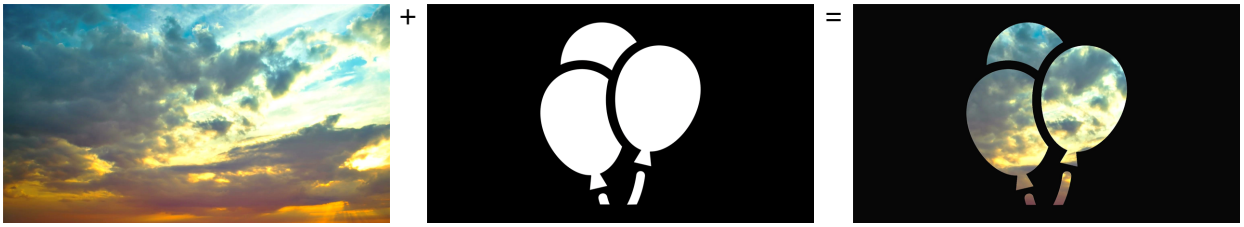
- Window 2 and Window 4 keys through black to show window 1.
- Overlapped keyed windows 2 and 3, show black of window 2, instead of window 1.



Show me examples of keying

White logo keyed using black to remove the background

Cut out keyed through white



Creating a video installation

To create a video installation in CORIOgrapher™, you need sources and displays. Make sure you've either loaded your configuration from your CORIOmaster2™, or created an offline configuration.

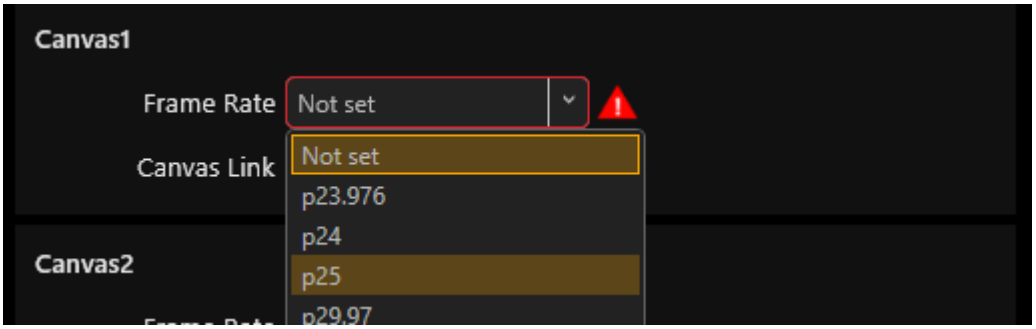
Read about reading the configuration from your CORIOmaster2™ on page 29.

Read about creating an offline configuration on page 30.

To create a video installation on a canvas

1. In Editor, choose a canvas.

2. If the canvas frame rate is unset, the Device and Canvases Settings dialog shows, select a frame rate for this canvas.



> Canvas frame rates help identify displays on the same canvas with different frame rates that could cause issues with stuttering or tearing, for example, if you select p60 the editor will highlight red any display that is not progressive 60 Hz.

3. OPTIONAL: Select the device locking mode and set the available options.

> **Do I want Synclock or Framelock?**
>
> Synclock synchronizes outputs on the same canvas using an internal clock, so they display video frames at the same time. If required you can link multiple canvases to synchronize their outputs together. Synclock is the default mode.
>
> Framelock uses an external reference input to synchronize the outputs on your canvas. There is only one external reference clock for your device. You can select which canvases are locked. If the canvas is not locked to a external reference input then Synclock is used.
>
> > It can take up to 1 minute to lock onto the selected reference input.
> > The reference input frame rate must exactly match the output frame rate.

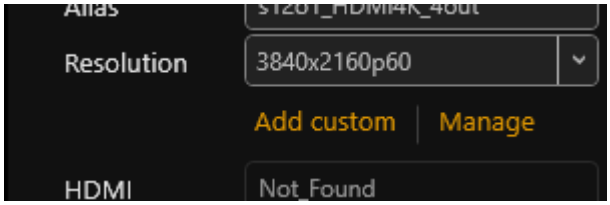
> You can change the settings later from Editor > Canvas panel > select .

4. Select Show assets and open Displays.
5. OPTIONAL, but RECOMMENDED: Assign equipment to the display by selecting the , then select the equipment you want to assign to the display, and then select Assign. When you add the display to a canvas the values from the equipment will automatically be used, so you don't have to set them manually.

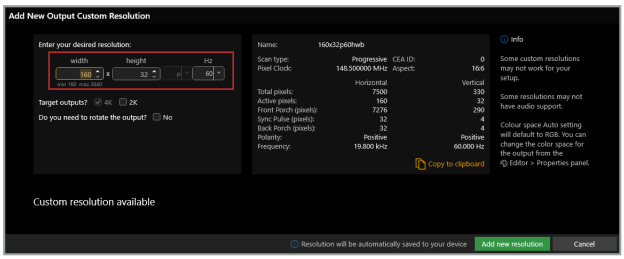
> You can change or assign equipment later by selecting the display, then from the Properties panel, open Equipment, select Assign.

6. OPTIONAL: If the display resolution is not listed there are two possibilities:
    1. The module does not support the resolution you require, for example you want a 4K resolution on a 2K output. You will need to use a different module that supports your required resolution.

2. The resolution is not in the built-in list. If supported by the module, you can add a custom resolution by selecting Add custom or Manage.



- Add custom opens a dialog that targets the module requirements. We've created a custom resolution algorithm that maximizes the likelihood that the resolution will work in your setup.

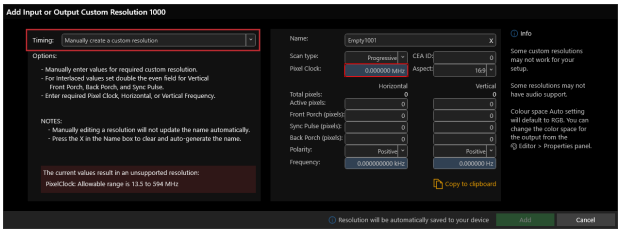


> Adding or selecting a resolution will also select the resolution for the display.

> If the resolution frame rate does not match the canvas frame rate you will see a warning from the Editor display.

Read about custom resolutions on page 62.

- Manage opens the advanced dialog where you can manually enter timing values or use one of the timing providers.



> Changing the values of a resolution may make it incompatible with the display.

> Deleting a resolution that is used will cause the display to revert to a default resolution.

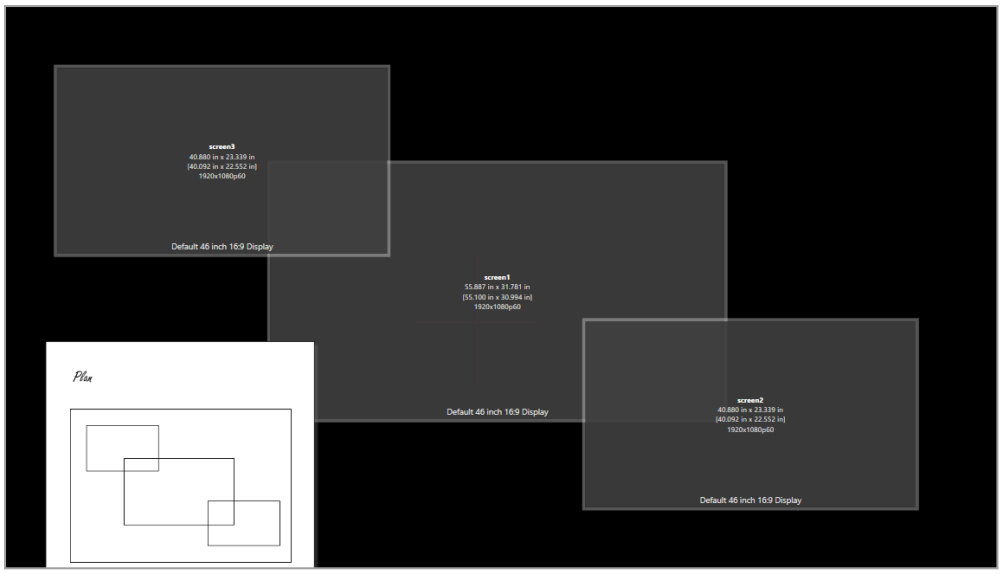
Read about custom resolutions on page 62.

7. OPTIONAL: If your output module supports port cloning, you can clone an output onto a second display. Both displays show the same output at the same resolution.

   From Properties > Clone Output select On.

8. For each display you want to use in your video installation, select + to add a display.

9. Arrange the displays on the canvas until they match your plan.



10. Add one or more windows. In Assets, open Sources.

> Read about updating existing presets when you add more windows on page 77.

> Read about setting up your windows for keying on page 38.

11. For each source you want to play in your video installation, select to add a dedicated window, or to add a free window.

Do I want a dedicated window or a free window?

Dedicated windows are the quickest windows to add. They are locked to a source and the best possible quality for the input. You can add one dedicated window per source. The color of dedicated windows is always cyan.

Free windows take a bit longer to set up but are more flexible. You can change the source playing in the window and select the quality you want to use. The best quality available for a free window depends on the number and quality of windows on your canvas. The color of free windows depends on their quality.

If you only want one source playing in a window with a simple setup process, choose dedicated windows. If you want to have more control, for example, change the source playing in a window with a preset, choose free windows.

What are window qualities?

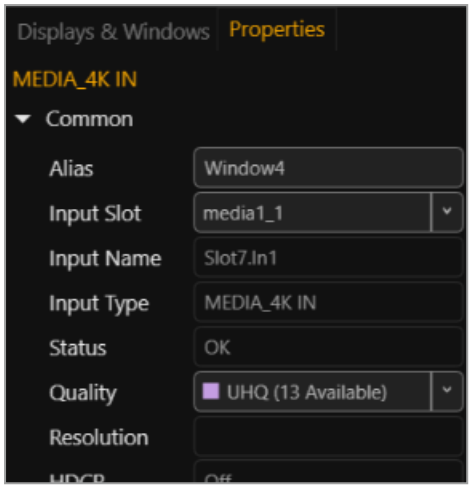
The different window qualities allow you to fine-tune your device to maximize the available canvas bandwidth. For example when you want a lot of windows, windows are always small, or a window is not the main focus, then your windows don't require the full input resolution or bandwidth. The input might be resized to fit within the selected window quality dimensions.

- HQ (High Quality) are green, and up to 1024x1280 pixels
- EHQ (Extra High Quality) are blue, and up to 2048x1280 pixels
- UHQ (Ultra High Quality) are purple, and up to 4096x2560 pixels

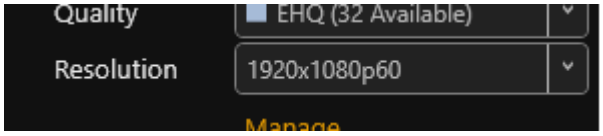
> **Minimum window quality for high bandwidth resolutions**
> 3840x2160p30 or greater require at least EHQ.
> 3840x2160p60 or greater require at least UHQ.

> When adding a window to the canvas CORIOgrapher will automatically pick the window quality based on the type of input and available device resources. You can then change the window quality.

12. To customize a window, for example, to add a border, or change the quality of a free window, double-click the window to open Properties, and make your changes.

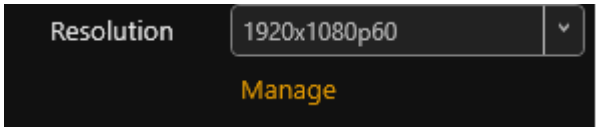


13. RECOMMENDED: If you are not connected to a device you can select the input's resolution used for the bandwidth calculations.



> Be aware that the resolution may change when you connect to your device and the real resolution is measured from the source.

14. OPTIONAL: If the source resolution is not listed there are two possibilities:
    1. The module does not support the resolution the source is trying to send.
    2. The resolution is not in the built-in list. If supported by the module, you can add a custom resolution by selecting Manage.



15. When you are happy with your video wall, select Take and then Set device startup to save the take on your CORIOmaster2™, so your changes will be restored on start up.

Before you start using your video installation, it's a good idea to test it to make sure everything is connected properly.

Read about testing your video installation on page 45.

Read about HDCP on page 34.

Read about window keying on page 38.

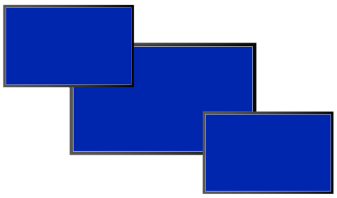
Testing your video installation

Once you've created your basic video installation, make sure that you've correctly connected all your hardware, and named and positioned your displays and windows correctly in CORIOgrapher™.

> Testing your video installation is much easier if you've named your input and output ports and channels.
> Read more on page 31.

1. Add displays and windows.
   Read more on page 41.
2. Select Take to send the configuration on the canvas to your device.

3. Check that your video installation looks correct.
   Make sure that each source is playing, and check that the picture is assembled correctly.



✖ Not the source you were expecting, blue screen, display keeps dropping signal, or no image.

Possible causes:

- Source connected incorrectly
- Input ports named incorrectly
- Source not playing
- Source resolution not supported
- Display does not support HDCP
- Source does not support the required number of HDCP keys
- Poor quality or damaged cables

✔ Source correct, connected, and playing.

✖ Image appears in the wrong places.

Possible causes:

- Displays arranged incorrectly in CORIOgrapher
- Output ports named incorrectly
- Displays connected incorrectly

✔ Source and displays connected and arranged correctly.

4. If you can't resolve these issues, you might need to contact tvONE support.
   See contact details on page 142.

5. When you are happy with your video wall, select Take and then Set device startup to save your settings on your device.

If your video wall is displaying the right sources in the right windows, but doesn't look quite right, you can use the settings in Editor to refine your video wall and make it more accurate.

You can now set up and test audio.

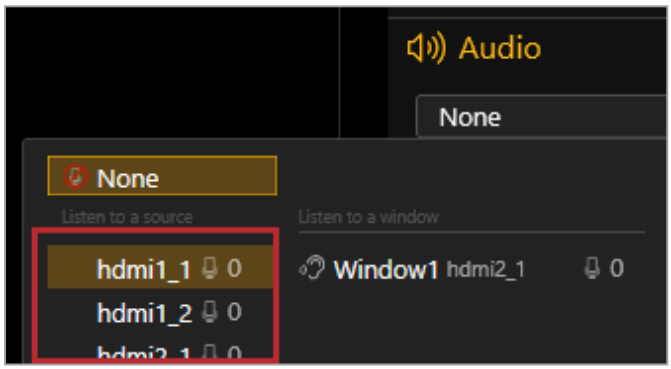
Set up and test audio

Your CORIOmaster2™ supports embedded audio in uncompressed PCM format.

Testing embedded audio inputs

1. From Editor, select Live changes.

2. Select an audio source from the list.



You hear the audio source from all the displays and output devices associated with this canvas.

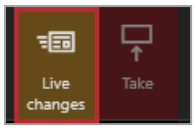
3. Select each source in turn.

If you cannot hear a source:

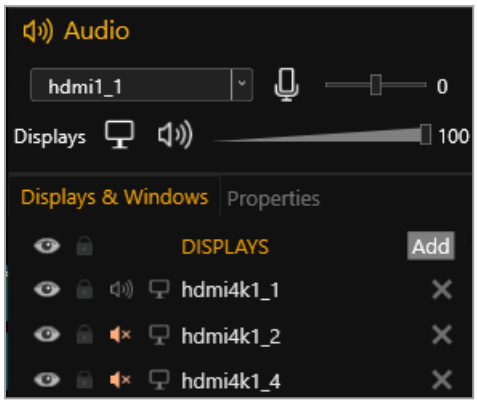
- check the audio settings of the source device.
- On Editor, make sure the source is not muted. A muted source shows .
- In Settings > Slot Status, make sure Audio Enabled is selected for the source.
- If you cannot hear any sources, check the audio settings of the output devices.
- If your source is a stream with low latency, your CORIOmaster2 mutes the audio.
  Read more about playing streams on page 93.
- The Streaming media and 4K playback input module only supports the following embedded audio formats:
  - mp3
  - aac

Testing embedded audio outputs

1. From Editor, select Live changes.

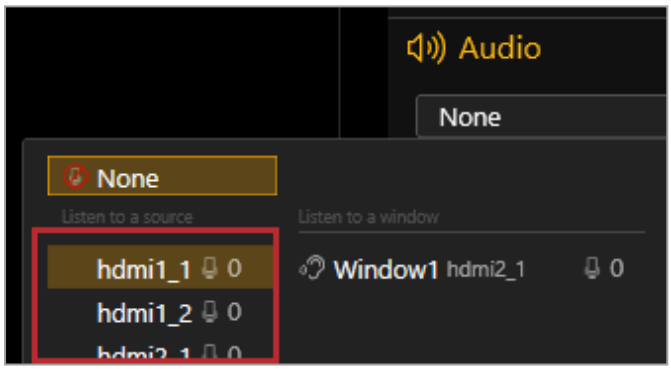


2. From Displays & Windows, mute all the displays, except the one you want to test.



Select to mute a display, and to unmute a display.

3. Select an audio source from the list.



You hear the audio source from the display that isn't muted.

4. Mute and unmute each display until you have heard audio from all displays.

If you can't hear audio:

- Check the audio settings on the display itself.
- In Editor, make sure the source is not muted. A muted source shows .
- In Settings > Slot Status, make sure Audio Enabled is selected for the source and for the display.
- If your source is a stream with low latency, CORIOmaster2 mutes the audio.
  Read more about playing streams on page 93.
- The Streaming media and 4K playback input module only supports the following embedded audio formats:
  - mp3
  - aac

Read about what to do if you can't hear audio on page 128.

Settings

You can manage device settings, network settings, and user settings. You can also get information about your CORIOmaster2™, and name your modules.

In this section

Device settings 49
- Naming your CORIOmaster2™ 49
- Choosing your working units 49
- Customizing the front panel of your CORIOmaster2™ 50
- Backing up and restoring your settings 50
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- Creating and editing users 53
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- Configuring network settings for your CORIOmaster2™ 55
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Playlist settings 59
- Renaming playlists and moving playlists between modules 59
- Deleting playlists 59

Managing encoders and streams 60

Resolution Editor 62
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Device settings

Administrators can configure settings for your CORIOmaster2™, including creating and changing its name, changing the measurement units you use to create video walls, backing up and restoring your configuration, and resetting the CORIOmaster2 to its factory default settings.

In this section

Naming your CORIOmaster2™ 49
Choosing your working units 49
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Naming your CORIOmaster2™

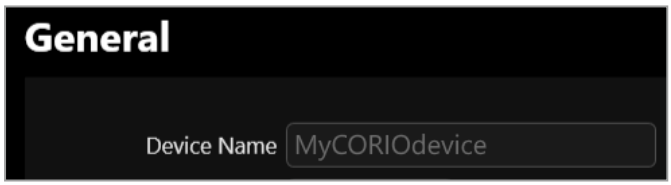
You can give your CORIOmaster2 a unique name.

Why should I name my CORIOmaster2?

If you have more than one CORIOmaster2 unit on your network, giving each unit a unique name can make it easier to find and log in to that unit quickly.

To name your CORIOmaster2

1. Select ⚙ Settings > General.
2. Enter a name for your CORIOmaster2.



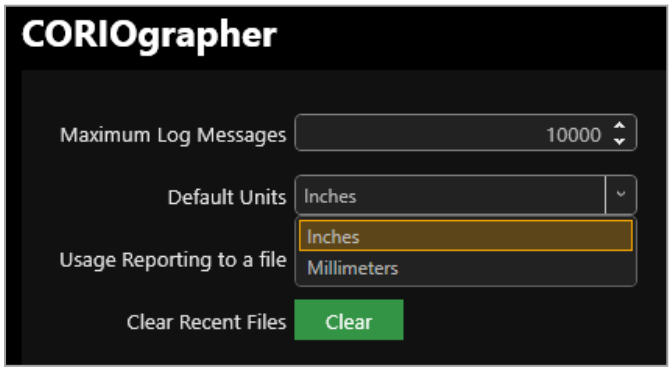
3. Select Save.

Choosing your working units

You can choose to work in inches or millimeters when you build video installations in CORIOgrapher™.

To choose a unit

1. Select ⚙ Settings > CORIOgrapher.
2. From Default Units, choose your preferred units.



Customizing the front panel of your CORIOmaster2™

You can choose what information appears on the screen on the front panel of your CORIOmaster2.

1. Select ⚙ Settings > Front panel > Settings.
2. Select or change the options you want to customize the front panel and display.
3. Select Save front panel settings.

Backing up and restoring your settings

You can save your settings to a file on your CORIOmaster2™, or to a file on your computer. You can restore your settings from either file. You can share a file saved on a computer between several CORIOmaster2 units that have the same configuration of modules.

Backing up your settings on your CORIOmaster2

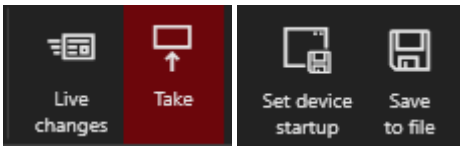
Settings that are saved on your CORIOmaster2

All settings are saved to a backup file on your CORIOmaster2, including:

- Presets
- Configuration, including custom names
- Canvases
- The play queue of a Streaming media and 4K playback input module
- Network settings
- Manually added streams

What isn't saved to your CORIOmaster2

Any work that you have not saved to the device, with Take and Set device startup, will not be saved to the CORIOmaster2 backup file.



It is recommended you save your configuration to a file to keep a backup on your computer.

Read about backing up to a file on page 51..

To back up your settings on your CORIOmaster2

1. Check that you've saved all your work.
2. Select Settings > Backup and Restore > Backup.

Restoring your settings from your CORIOmaster2

1. Select Settings > Backup and Restore.
2. Select Restore.

Backing up your settings to a file on your computer

Settings that are saved on your computer

Most settings are saved to a backup file on your computer, including:

- Presets
- Configuration, including custom names
- Canvases
- Network settings
- Manually added streams
- Custom resolutions

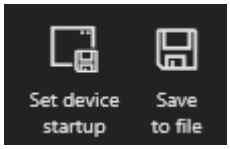
Note: device name and network settings are saved as part of the backup file, but are not included when you restore settings to your device. This allows you to share the backup file between devices without causing conflicts with names and network settings.

What isn't saved to your computer

The play queue and playlists of a Streaming media and 4K playback input module aren't saved to your computer.

To back up your settings to a file on your computer

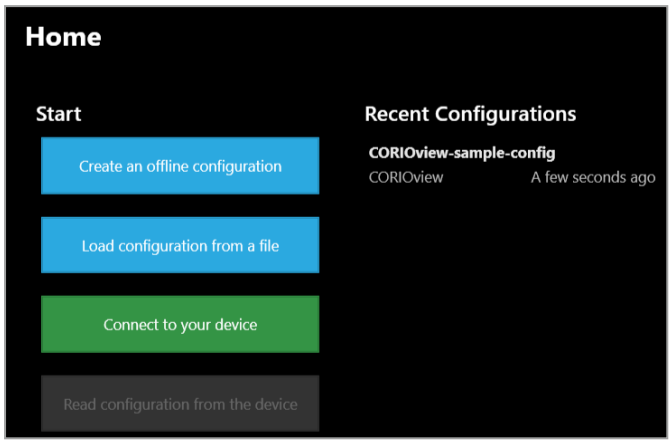
1. Select Editor > Save to file.



2. Choose a location for the file, and save.

Restoring or copying settings from a file on your computer

1. Connect to the CORIOmaster2 that you want to update with saved settings.
2. Select Home.
3. Under Recent Configurations, select a saved file.



If you can't see your file in the list, select Load configuration from a file and browse to your file.

Problems sharing settings between CORIOmaster2 units

You can't share saved settings between devices with different configurations of modules.

You might not be able to copy settings from one CORIOmaster2 to another if they have very different firmware versions, or you might lose some data in the process.

Resetting your CORIOmaster2™ to factory default settings

Why restore factory default settings?

If your CORIOmaster2 has become unstable, you have repeated errors that you can't fix, or you need to remove all settings and presets, you can reset your CORIOmaster2 to its factory default settings.

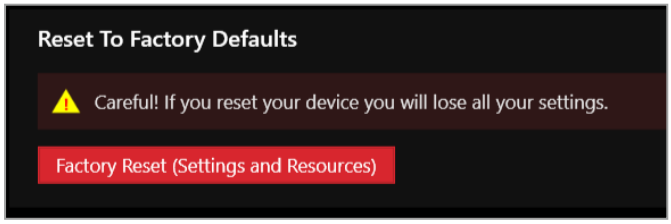
> When you reset your CORIOmaster2 to factory default settings, all of your settings and configurations are deleted.

Before you reset your CORIOmaster2, you might want to back up your configuration. When you set up your CORIOmaster2, you can restore your configuration.

Read about backing up and restoring your configuration on page 50.

To reset your CORIOmaster2 to factory default settings

1. Select Settings > General.
2. Select Factory Reset.



User settings

Administrators can create and edit users, change user roles, and enable specific timeout times. Users and power users can change their own passwords.

In this section

Creating and editing users 53
Changing other users' passwords 54
Changing your own password 55

Creating and editing users

You can create and edit users, change user roles, and enable specific timeout times. You can have up to four additional users.

Who can do this?

Administrators can do this task.

What are user roles?

CORIOgrapher has three types of user, administrator, power user, and user.

	Users	Power Users	Administrators
Use the dashboard, including loading presets and using audio controls	✔	✔	✔
Send configurations to your CORIOmaster2		✔	✔
Create offline configurations		✔	✔
Save and load configurations		✔	✔
Use the console		✔	✔
Create and edit video installations		✔	✔
Create and edit presets		✔	✔
Set window and display properties, including disabling audio		✔	✔
Change settings, including creating and editing other users			✔
Set up a new CORIOmaster2			✔

Why set a timeout time?

By default, a connection to a CORIOmaster2™ must stay active, or it is disconnected after five minutes. An active connection sends at least one command to the CORIOmaster2 every five minutes.

To stay connected while idle for more than five minutes, set a longer timeout time for each user. You can also allow the user to stay connected permanently, with no timeout time, by clearing the Enable timeout option.

> Locking out other users
> CORIOgrapher only allows one connection at a time. If you allow any user to connect permanently, or with a long timeout time, they can lock out other users. This can also prevent commands from other devices reaching the CORIOmaster2.
> If you want to allow multiple users to control a CORIOmaster2, use our REST API with WebSocket events.
> Visit our API site at api.tvone.com.

To create a new user, or edit an existing user

1. Select ⚙ Settings > Users.
2. To create a new user, choose an empty slot. To edit an existing user, find that user's details.
3. Enter a username.

   Usernames must start with a letter, and can contain only letters, numbers, and underscores.
4. Select a user role.
5. Enter and confirm a password.

   Passwords must be between 5 and 32 characters and can contain any combination of alphanumeric characters and symbols. Passwords cannot contain spaces.
6. Select Enable timeout, and enter or select a timeout time from 1–540 minutes.

   > tvONE recommends a timeout time from 1–5 minutes.
7. Select Save.

Changing other users' passwords

You can make changes to other users' accounts.

Who can do this?

Administrators can do this task.

Password rules

Passwords must be between 5 and 32 characters and can contain any combination of alphanumeric characters and symbols. Passwords cannot contain spaces.

To change other users' passwords

1. Select ⚙ Settings > Users.
2. Find the user whose password you wish to change and enter and confirm the new password.

Changing your own password

Who can do this?

Administrators, power users, and users can do this task.

Password rules

Passwords must be between 5 and 32 characters and can contain any combination of alphanumeric characters and symbols. Passwords cannot contain spaces.

To change your password

1. Select ⚙ Settings > Users.
2. Find your user details and enter and confirm your new password.

Network settings

Administrators can configure network settings for CORIOmaster2™ units and Streaming media and 4K playback input modules.

In this section

Configuring network settings for your CORIOmaster2™ 55
Configuring network settings for streaming media 57

Configuring network settings for your CORIOmaster2™

You can choose a DHCP or static IP address, and configure your static IP settings.

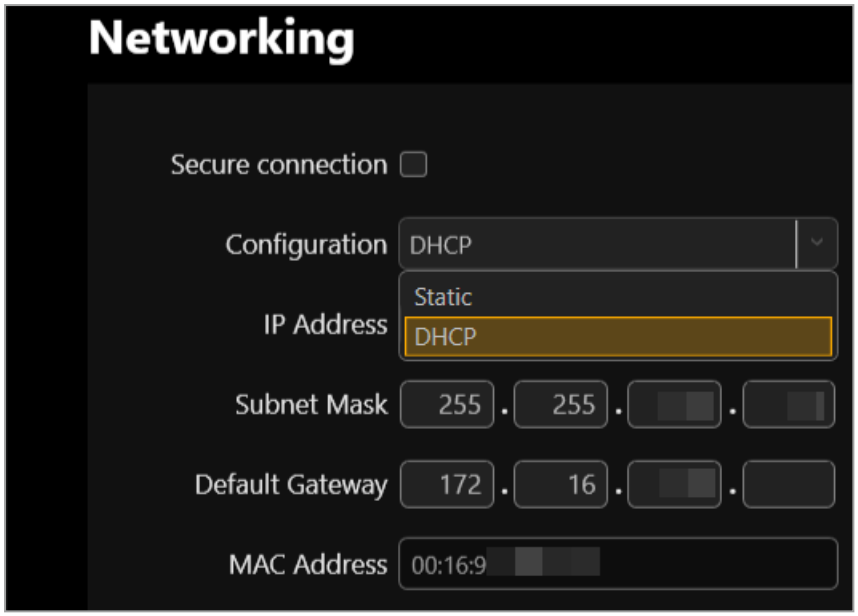
Before you start

If you want to use a static IP address, you need some information about the range of available IP addresses on your network. Your network administrator should be able to help you.

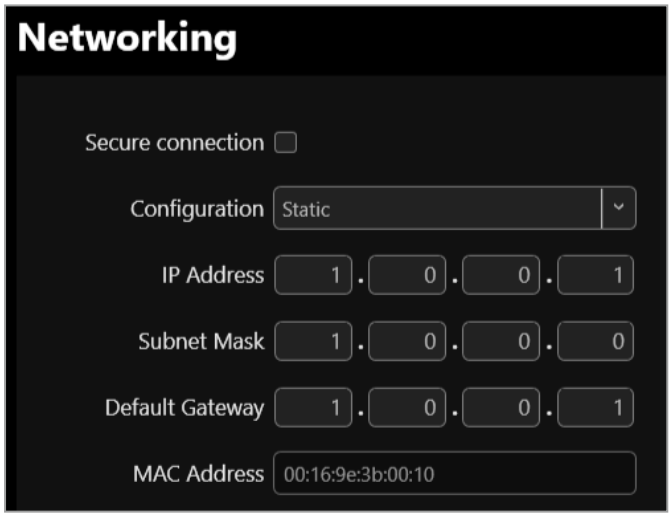
> **Static IP address**
> If you choose a static IP address, make sure you enter a unique value for your IP address. Using the same IP address for multiple devices can cause your devices to disconnect. Contact your network administrator for help.

To configure network settings for your CORIOmaster2

1. In CORIOgrapher, select ⚙ Settings > Networking.
2. Choose an IP configuration.



   - If you choose DHCP, an IP address is assigned to you.
   - If you choose Static, configure your IP address.
3. OPTIONAL: Configure your static IP address.



   - Enter a value for your IP address and subnet mask.
   - If your CORIOmaster2 and PC are on different networks, enter a value for your gateway.

   If you need help with network settings, contact your network administrator.

Configuring network settings for streaming media

If you want to stream media over your network, or from the internet, configure the network settings for your Streaming media and 4K playback input module.

If you only want to use your Streaming media and 4K playback input module to play media from a USB drive, you don't need to configure network settings.

Read about configuring your Magenta Encoder-100 at help.tvone.com/r/docs/cm2/encoder-100/1.

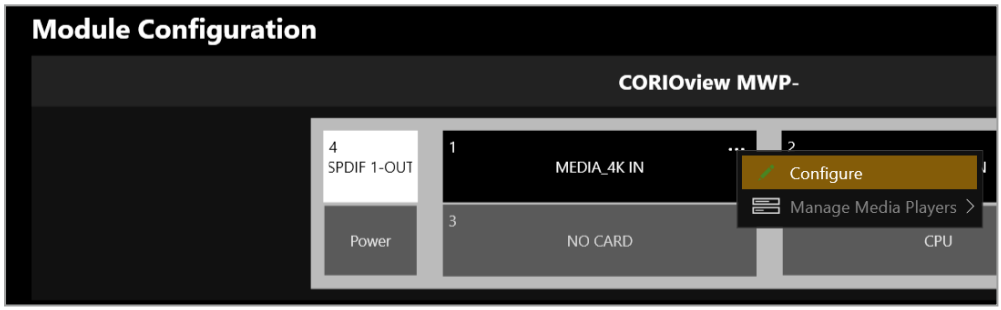
About static IP addresses

If you want to use a static IP address, you need some information about the range of available IP addresses on your network. Your network administrator should be able to help you.

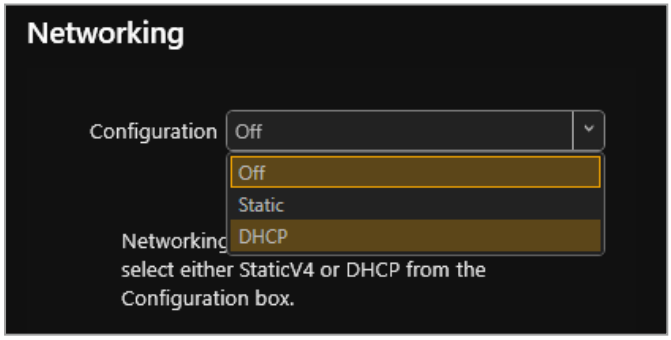
> **Static IP address**
> If you choose a static IP address, make sure you enter a unique value for your IP address. Using the same IP address for multiple devices can cause your devices to disconnect. Contact your network administrator for help.

To configure network settings for streaming media

1. In CORIOgrapher, select Settings > Module Configuration.
2. Find the Streaming media and 4K playback module that you want to set up, and select ••• > Configure.

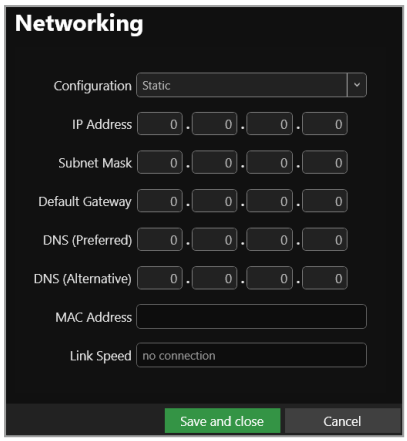


3. Choose an IP configuration.



- If you choose DHCP, an IP address is assigned to you.
- If you choose Static, the last static IP address you saved is available to edit. If you haven't previously saved a static IP address, default values for a static IP address are available to edit.

4. OPTIONAL: Configure your static IP address.

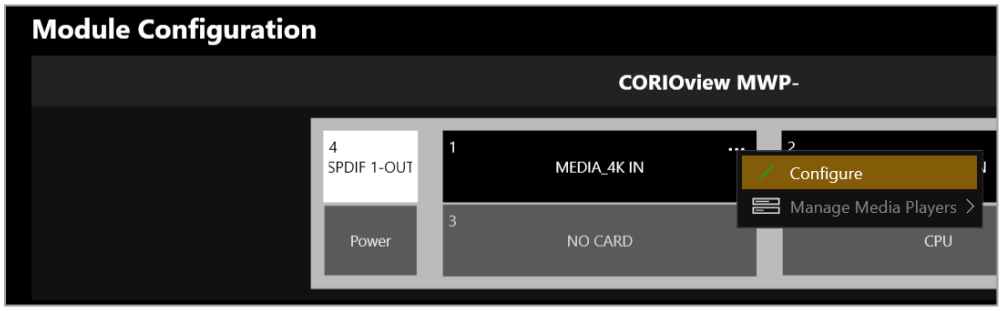


- Enter a value for your IP address and subnet mask.
- If you want to stream from the internet, for example from a Wowza server, enter a value for your gateway.
- If you want to refer to a source by name, enter a value for DNS.

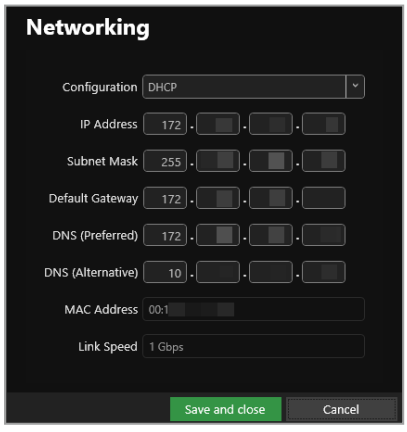
If you need help with network settings, contact your network administrator.

Finding the MAC address of your Streaming media and 4K playback input module

1. In CORIOgrapher, select Settings > Module Configuration.
2. Find the Streaming media and 4K playback module that you want to set up, and select ••• > Configure.



3. Read the MAC address.



Playlist settings

If you have a Streaming media and 4K playback input module, you can view the status of your playlists, delete all playlists or individual playlists, move playlists between modules, and rename playlists.

In this section

Renaming playlists and moving playlists between modules 59
Deleting playlists 59

Renaming playlists and moving playlists between modules

You can see a list of all your playlists on all your Streaming media and 4K playback input modules. You can rename your playlists and move them between modules.

> Playlists created in one mode are not displayed in other modes as they are not compatible with the playback method.

Renaming your playlists

1. In CORIOgrapher, select Settings > Playlists.
2. Find the playlist you want to rename, and enter a new name.

Moving playlists

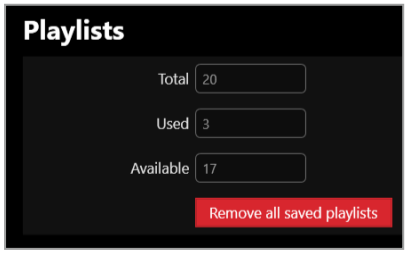
1. In CORIOgrapher, select Settings > Playlists.
2. Find the playlist you want to move and select the new module from the list.

Deleting playlists

If you have a Streaming media and 4K playback input module, you can delete all your playlists, or individual playlists.

Deleting all your playlists

1. In CORIOgrapher, select Settings > Playlists.
2. Select Remove all saved playlists.



Deleting individual playlists

1. In CORIOgrapher, select ⚙ Settings > Playlists.
2. Find the playlist you want to delete.
3. Select Remove.

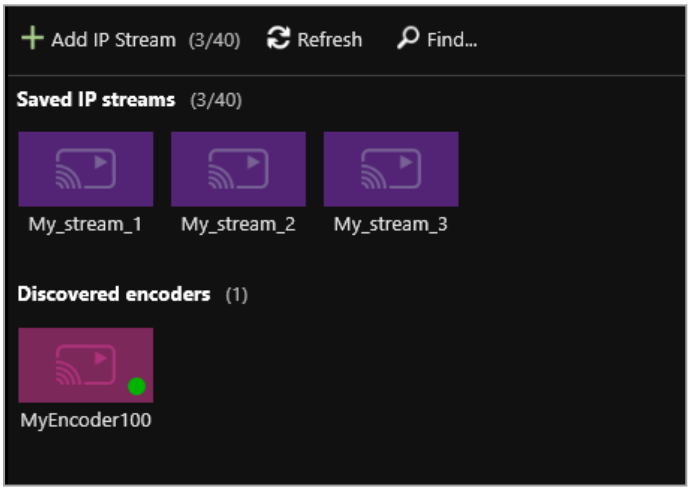
Managing encoders and streams

You can view and manage all your encoders and saved streams.

Select ⚙ Settings > IP Streams.

Managing your encoders

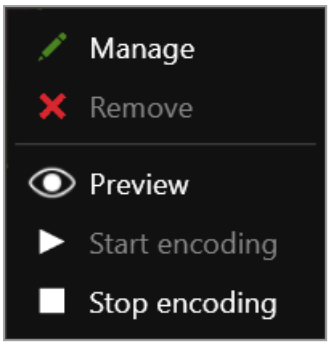
Encoders that CORIOgrapher™ detects appear under Discovered encoders.



You can:

- Refresh the list of encoders.
- Search for an encoder that doesn't appear automatically.
- Select an encoder to see details about that encoder.
- Select ••• to:
  - Manage the encoder, or change your configuration.
    Read about configuring your Magenta Encoder-100 at help.tvone.com/r/docs/cm2/encoder-100/1.
  - Remove an inactive encoder.
  - Preview the stream from an encoder.

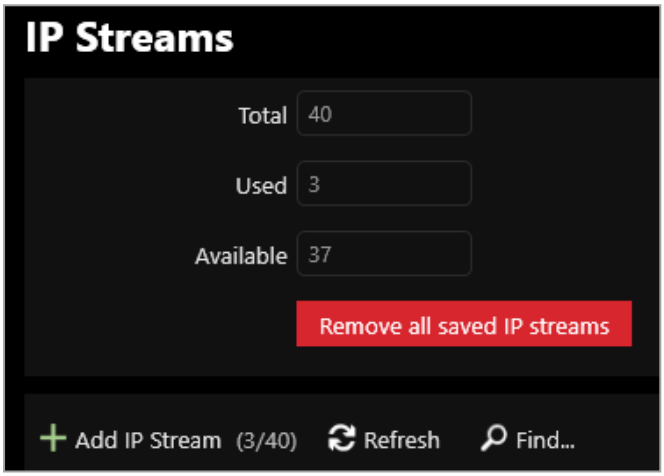
- Start or stop encoding.



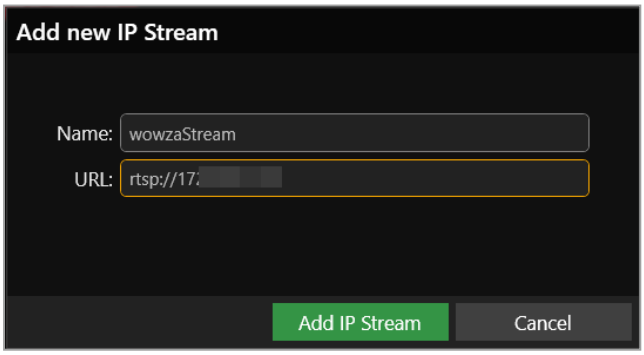
Managing your saved streams

Streams that you add and save manually appear under Saved IP streams.

- You can see how many streams you have, and how many slots you have left.
- You can add new streams, and remove all your saved streams.



- You can edit the name and URL of saved streams.
  1. Select the stream and then select ••• > Edit.
  2. Edit the name or URL of the media stream.



Read about configuring your Magenta Encoder-100 at help.tvone.com/r/docs/cm2/encoder-100/1.

Resolution Editor

Administrators can manage custom resolutions.

In this section

About custom resolutions 62
Creating and editing custom resolutions 62

About custom resolutions

What are custom resolutions

Your device has a number of commonly used resolutions that you can choose from for your displays or detected from a source connected to the input module.

Custom resolutions are resolutions that you can define yourself to get extra support that is not built-in to your device already.

> It's important to understand that not all custom resolutions will work with your setup because there are many factors that can influence if a resolution is usable, for example the hardware used in sources and displays, the cables used and their length, or the requirements of the device.

When to use custom resolutions

Create a custom resolution when the resolution your source or display requires is not one of the built-in resolutions.

Custom resolution for inputs and outputs

Inputs and outputs have different requirements which is why not all resolutions are available for different module types.

> 4K modules can support a wider range of resolution values than 2K modules.

> SDI modules do not support custom resolutions.

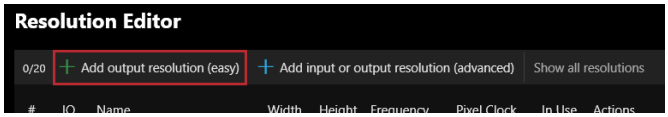
Creating and editing custom resolutions

Add a custom resolution to use with outputs

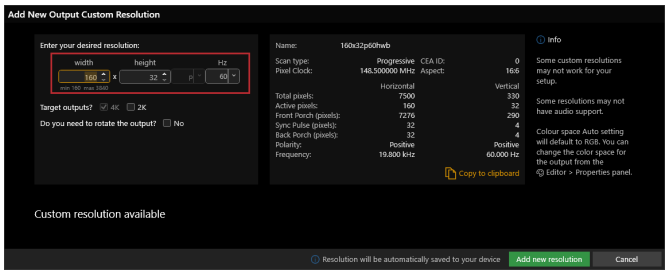
Due to the requirements of the outputs to be able to show video synchronized, all displays on the same canvas must have the same frame rate, for example all displays are showing video at 60 Hz.

We've created a custom resolution algorithm that maximizes the likelihood that the resolution will work in your setup.

1. In CORIOgrapher, select ⚙ Settings > Resolution Editor.
2. Select + Add output resolution (easy) to show the dialog.



3. Enter the desired resolution into the width, and height, and select the frame rate.



There are maximum supported values for the width and height, so not all values will be allowed at the same time, trying lower the width, height, or frame rate to create a compatible resolution.

We will search the CEA-861-F (Consumer Electronics Association) resolution list for matches and if found you can add this instead of creating a new custom resolution.

4. OPTIONAL: Check the 2K option if you require a resolution for a 2K output, as this will limit the maximum values used to make the resolution compatible with a 2K output module.
5. OPTIONAL: Configure the other options to help make a resolution that is compatible for your needs.
6. Select Add new resolution to add the resolution to the resolution list for your configuration.
The resolution will now be selectable for compatible outputs and connected sources.

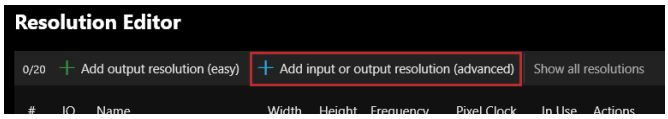
If you are connected to a device the resolution will be automatically sent and saved to your device.

Add a custom resolution with the advanced options

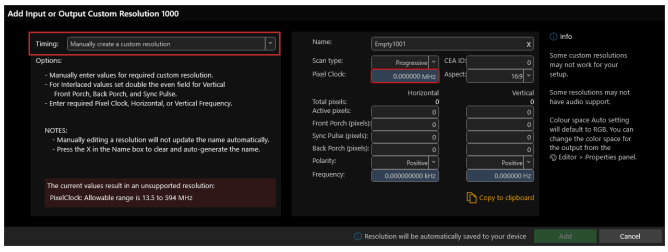
Sometimes you might already know the resolution timing values from the manual or specification sheets of the connected devices. These could be specific to the device, or from an existing standard.

If you are creating a custom resolution for outputs it is recommended to use the + Add output resolution (easy) dialog.

1. In CORIOgrapher, select ⚙ Settings > Resolution Editor.
2. Select + Add input or output resolution (advanced) to show the dialog.



3. From this dialog you can select the timing method you would like to use to add the resolution:



You may get warnings about the resolution values if they produce a resolution that is outside the allowable ranges.

- Manual

  Allows you enter the values directly. The blue boxes are linked depending on the total values, so changing one will update the other two.

  For interlaced resolutions the vertical sync pulse, and front and back porches must be twice the even field.

- CORIOmaster2 output resolution generator (tvONE)

  Enter the values to create a custom resolution for your outputs that is compatible with the requirements of the output modules.

  > This is the same method as the + Add output resolution (easy), but will not search the existing resolutions, or the CEA list for matching resolutions.

- CVT v1.2 Standard (VESA Coordinated Video Timing)

  This method uses the CVT formula to create a resolution which are best for analog devices.

- CVT v1.2 Reduced Blanking (VESA Coordinated Video Timing)

  This method uses the CVT Reduced Blanking formula to create a resolution which are best for analog devices.

- DMT 1.0r11 (VESA Display Monitor Timing)

  Select from the list of DMT resolutions which are best for analog devices.

- CEA-861-F (Consumer Electronics Association)

  Select from the list of CEA resolutions which are best for digital devices.

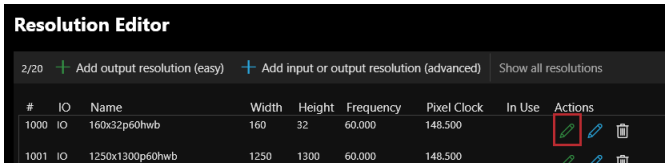
4. Select Add to add this to the resolution list for your configuration.
   The resolution will now be selectable for compatible outputs and connected sources.

> If you are connected to a device the resolution will be automatically sent and saved to your device.

Edit a custom resolution for outputs

You might just want to make a tweak to resolution instead of deleting and create it again.

1. In CORIOgrapher, select Settings > Resolution Editor.
2. Find the resolution you want to edit and select (green) to show the edit custom output resolution dialog.

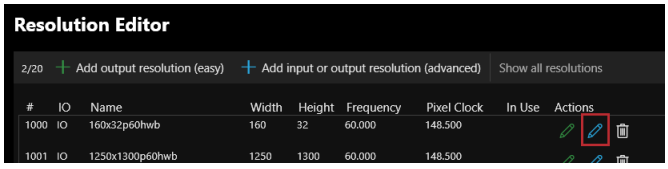


> If you are connected to a device the resolution will be automatically sent and saved to your device.

Edit a custom resolution with the advanced options

You might just want to make a tweak to resolution instead of deleting and create it again.

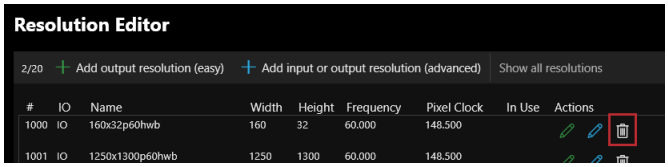
1. In CORIOgrapher, select Settings > Resolution Editor.
2. Find the resolution you want to edit and select blue to show the edit advanced resolution dialog.



> If you are connected to a device the resolution will be automatically sent and saved to your device.

Delete a custom resolution

1. In CORIOgrapher, select Settings > Resolution Editor.
2. Find the resolution you want to delete and select .

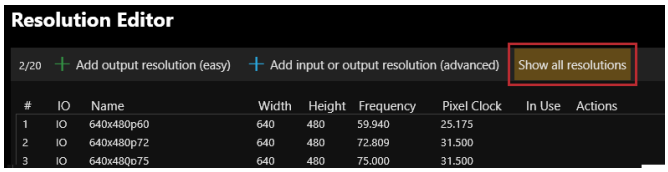


Resolutions that are in use and then deleted will be set back to their assigned equipment's default resolution. You may have to adjust them manually from the Editor.

If you are connected to a device the resolution will be automatically deleted on your device.

Show built-in resolutions

1. In CORIOgrapher, select Settings > Resolution Editor.
2. Select Show All Resolutions to show all the resolutions including built-in and custom.



Using your CORIOmaster2™

When your equipment is installed and you've recreated your installation in CORIOgrapher™, you can play streaming media, and add transitions and effects to your video wall.

In this section

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- Creating and editing presets 67
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- Playing media and streams 93
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Presets

You can create and save up to 50 presets in CORIOgrapher™.

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Creating and editing presets

You can create and save up to 50 presets in CORIOgrapher™.

What is a preset?

A preset stores information about windows, including positions, transitions, and effects such as borders or rotation. You can save presets and recall them later from the dashboard.

What is included in a preset?

Presets store information about windows, including:

- Optionally, source playing in the window
- Position
- Z order, or stacking order
- Size
- Rotation
- Border
- Flip
- Source change transitions
- Fade to black

What is not included in a preset?

- System settings
- Displays
- Canvases other than the one you are working on

  For example, if you have canvas 1 and canvas 2 set up, but you have canvas 1 open in Editor when you save a preset, the preset contains only information about canvas 1.
- Audio settings, including which window is playing audio, which source is playing breakaway audio, and whether you have chosen breakaway mode or audio-follows-video mode.
- Window:
  - Quality
  - Full name
  - Alias
  - Canvas
  - Keying

You can save all this information as a backup file.
Read more on page 50.

For best results

To prevent your presets behaving unexpectedly, follow the advice below.

Build your busiest preset first

Build the preset with the highest number of windows first. Include all the windows you want to use in all your presets for the canvas you're working on.

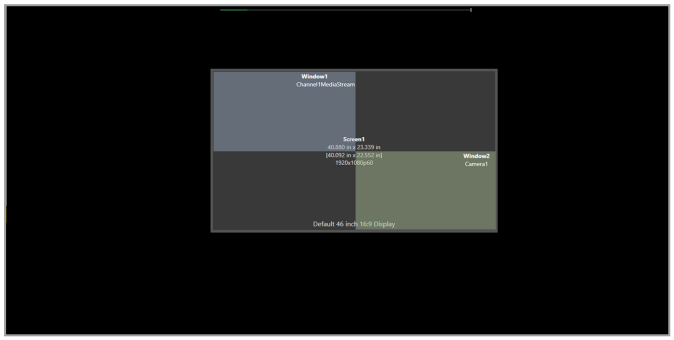
Move any windows that aren't for this preset away from the displays, and shrink them to reduce bandwidth.

Don't use presets to add and remove windows

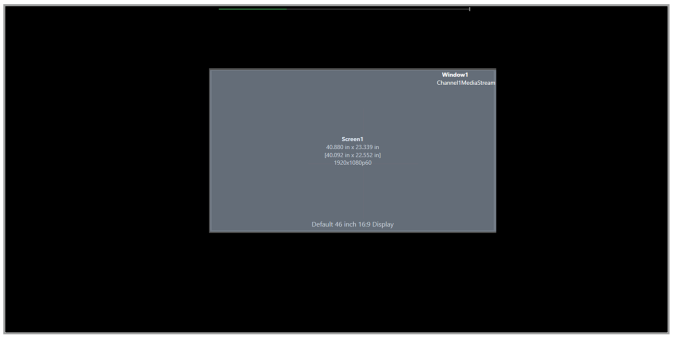
If you want to remove a window from your displays with a preset, don't delete the window.

- Move the window away from the displays.
- Reduce the size of the window to reduce unnecessary video bandwidth.
  Note: windows that aren't on the display still take up bandwidth.

✔ Preset 1



✖ Preset 2



✔ Preset 2

If you delete a window from a canvas, that window is also deleted from any presets for that canvas.

Don't use presets to change window quality

Don't change the quality of a window that is included with a preset.

For example, if you save a preset that contains two windows of UHQ quality, and then change the quality of one window to EHQ, it will not return to UHQ when you load the preset.

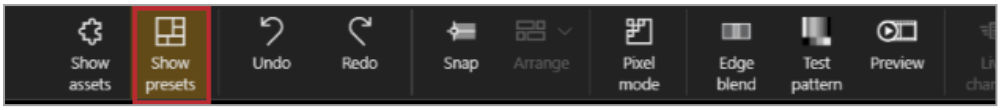
If you want to reduce the video bandwidth consumed by a window, consider shrinking it instead.

Windows used in presets only appear on one canvas

You can't use windows that are included in presets on more than one canvas.

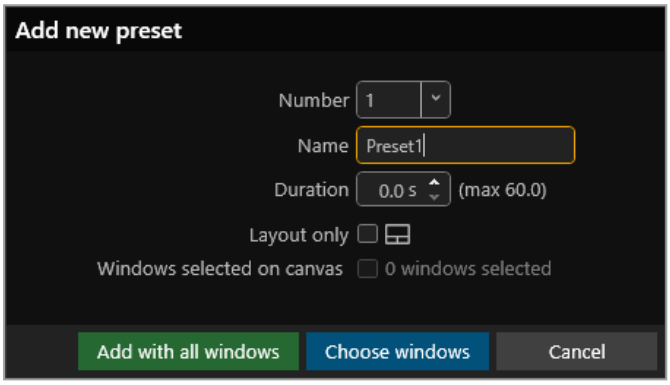
Creating a new preset with all windows

1. Create an installation on a canvas and select Show presets.



2. From Presets, select New.
3. OPTIONAL: Select the number where the preset will be created.
   The next available location is automatically selected.
4. Enter a name for your preset.

   Names can be up to 19 characters long, and cannot contain ".

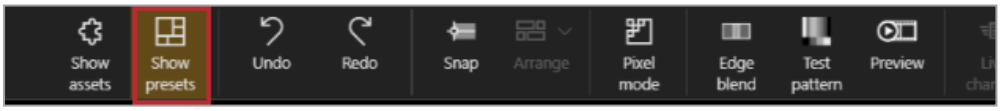


5. Enter or select a duration for your preset.

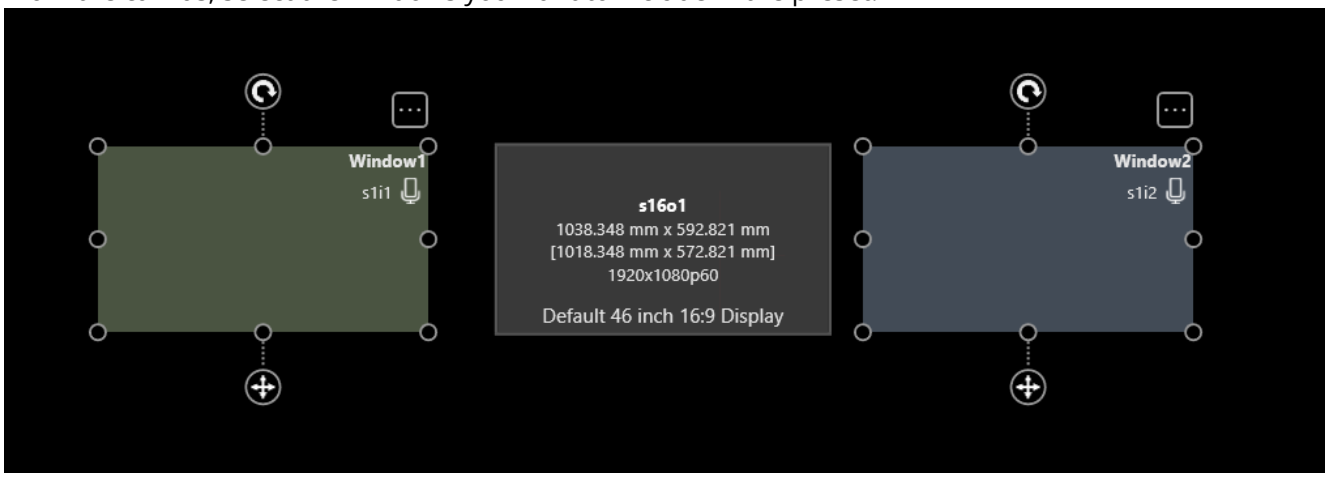
   The duration is the time taken to transition to this preset.
6. OPTIONAL: Select Layout only to create a preset that doesn't update the window sources, for example if you want to move windows and keep the sources the same.
7. Select Add with all windows.

Creating a new preset with windows that are selected on the canvas

1. Create an installation on a canvas and select Show presets.

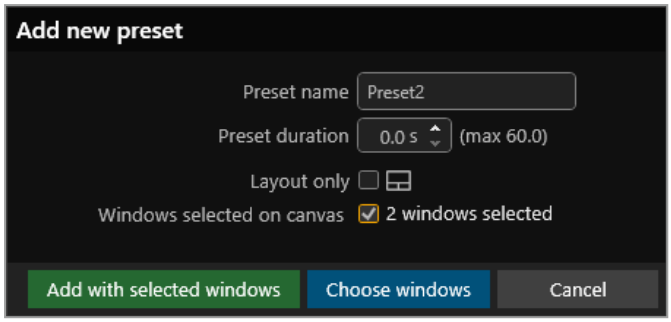


2. From the canvas, select the windows you want to include in the preset.



3. From Presets, select New.
4. OPTIONAL: Select the number where the preset will be created.
   The next available location is automatically selected.

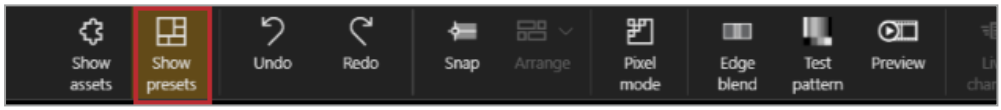
5. Enter a name for your preset.
   Names can be up to 19 characters long, and cannot contain ".



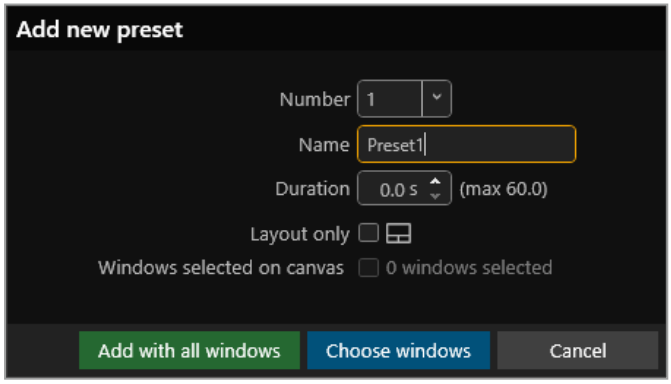
6. Enter or select a duration for your preset.
   The duration is the time taken to transition to this preset.
7. OPTIONAL: Select Layout only to create a preset that doesn't update the window sources, for example if you want to move windows and keep the sources the same.
8. Select the Windows selected on canvas option.
9. Select Add with selected windows.

Creating a new preset and choosing which windows to include

1. Create an installation on a canvas and select Show presets.

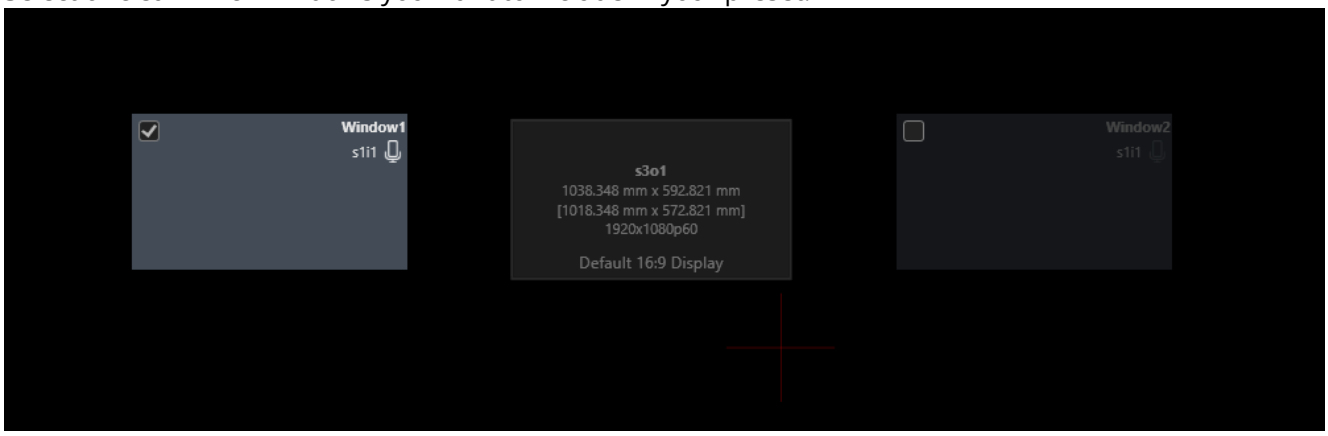


2. From Presets, select New.
3. OPTIONAL: Select the number where the preset will be created.
   The next available location is automatically selected.
4. Enter a name for your preset.
   Names can be up to 19 characters long, and cannot contain ".



5. Enter or select a duration for your preset.
   The duration is the time taken to transition to this preset.
6. OPTIONAL: Select Layout only to create a preset that doesn't update the window sources, for example if you want to move windows and keep the sources the same.
7. Select Choose windows, the preset editor will show.

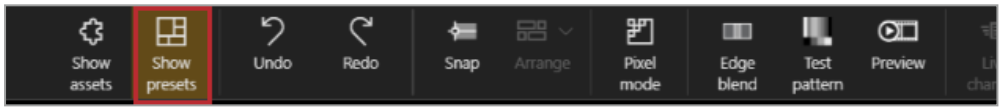
8. Select or clear which windows you want to include in your preset.



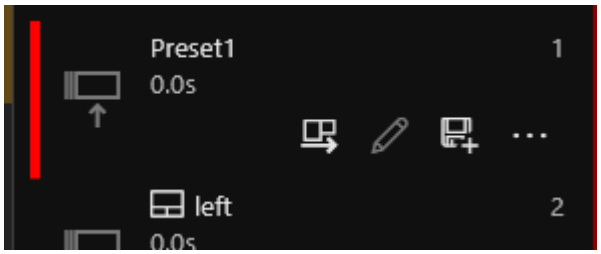
9. Select ✕ Close from the preset editor toolbar.

Edit a preset in the preset editor

1. With existing presets for the canvas, select Show presets.



2. From Presets, find the preset you want to edit and select ✎.
3. A red bar indicates the preset is being edited.

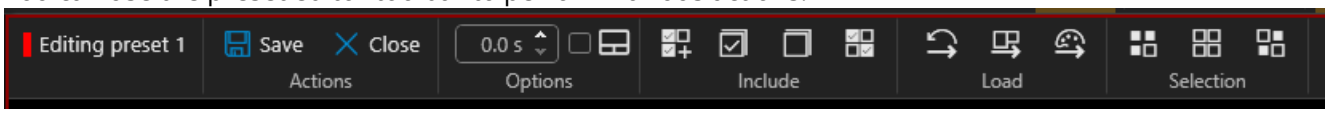


Preset and window input events won't update the windows while you are editing your preset.

4. Select or clear which windows you want to include in your preset.

5. Update the included windows for the preset, for example change their position, rotation, border color, or change which windows are included in the preset.

6. You can use the preset editor toolbar to perform various actions.



   - Actions: Save your preset or close the preset editor.
   - Options: Change the duration or Layout only.
   - Include: Tools to help you include or exclude windows in your preset.

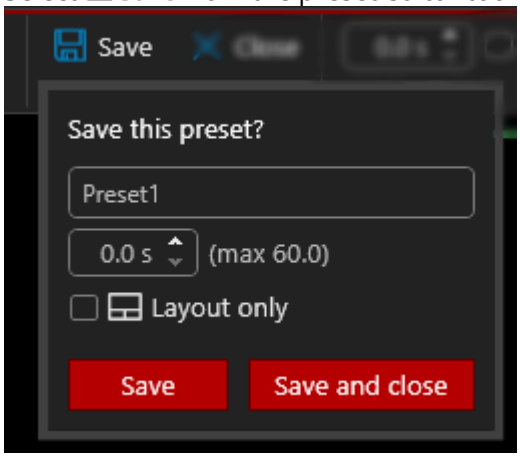
     > You can select windows, then use the Include tool to include them in the preset.

   - Load: Revert or load the preset editor windows with values from other places.

     > You can also load any preset values into the preset editor without changing the currently loaded preset on your device from Presets > find the preset to load > select .

   - Selection: Tools to help you select windows in the preset editor.

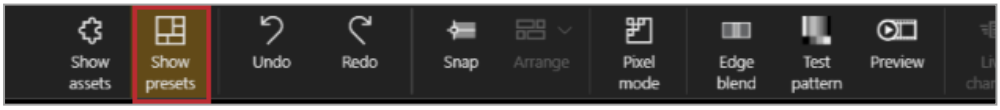
7. Select Save from the preset editor toolbar.



8. OPTIONAL: You can change the preset options, for example name, duration, or layout only.
9. Select Save or Save and close.

Previewing changes on the device while editing a preset

1. With existing presets for the canvas, select Show presets.



2. From Presets, find the preset you want to edit and select .

   When editing a preset Live changes is turned off so you can make changes to the preset without affecting the live window values on the device.

3. You can turn Live changes back on to see your updates in real-time on the device.

   or

4. You can select Take to send all changes to the device.

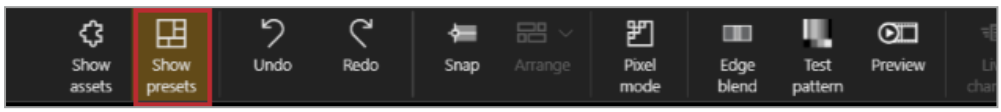
> You will need save any changes and close the preset editor to test your preset transitions in context with your other presets .
> Read more about loading presets on page 74.

Quick edit, overwrite, cloning, and deleting presets

You can change the name and duration of a preset, or overwrite a preset with a new configuration.

To quickly change the name or duration of a preset

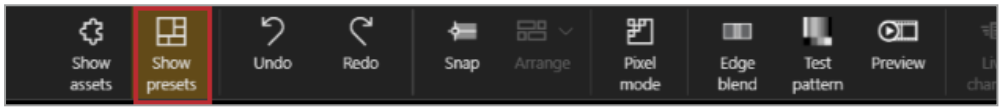
1. Select Show presets.



2. In Presets, find the preset you want to edit, select ••• and select .
3. Enter a new name or duration.

To overwrite a preset

1. Create the new arrangement on your canvas and select Show presets.



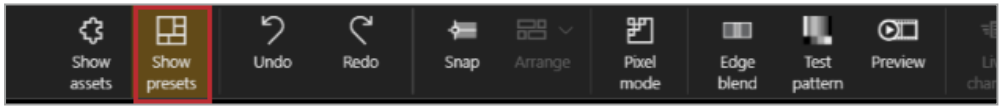
2. In Presets, find the preset you want to overwrite and select .

> Overwriting a preset is similar to creating a new preset.

> If you want to keep the existing preset windows select Choose windows.

To clone a preset

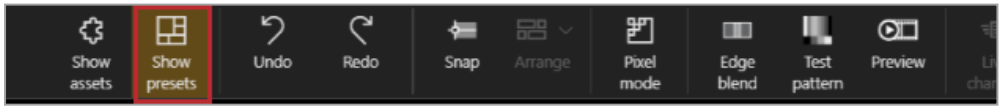
1. Select Show presets.



2. In Presets, find the preset you want to clone, select ••• and select .
   A new preset is added to the end of the list.

To delete a preset

1. Select Show presets.



2. In Presets, find the preset you want to delete, select ••• and select .

Loading a preset

If you have saved one or more presets in CORIOgrapher™, then you can choose a preset to load.

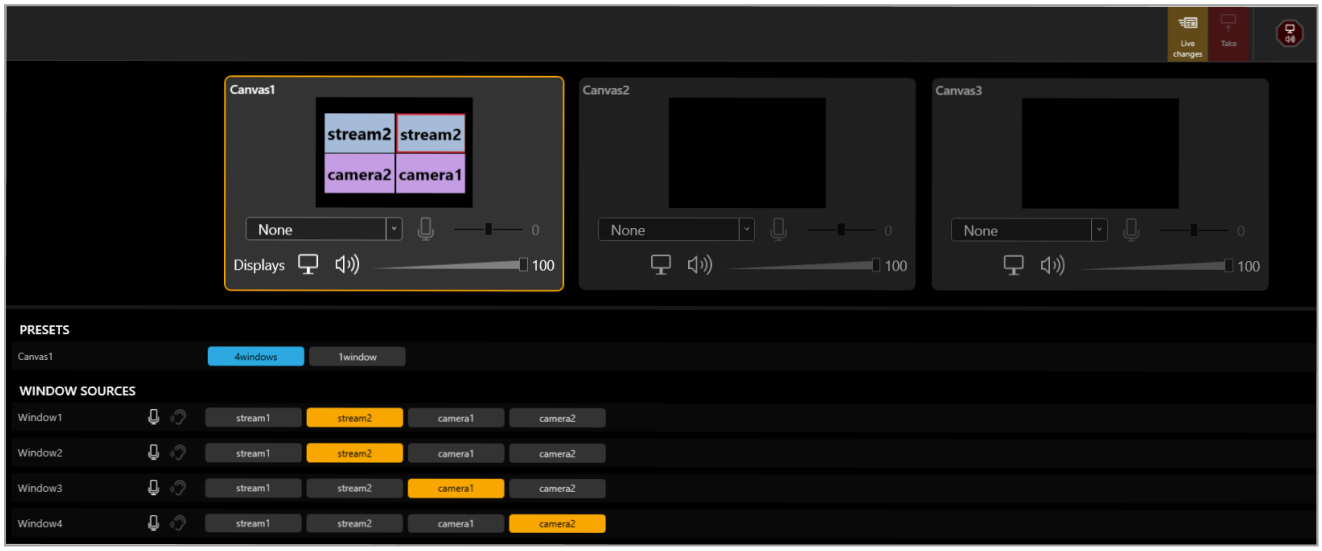
What is a preset?

A preset stores information about windows, including positions, transitions, and effects such as borders or rotation. You can save presets and recall them later from the dashboard.

Loading a preset from CORIOgrapher

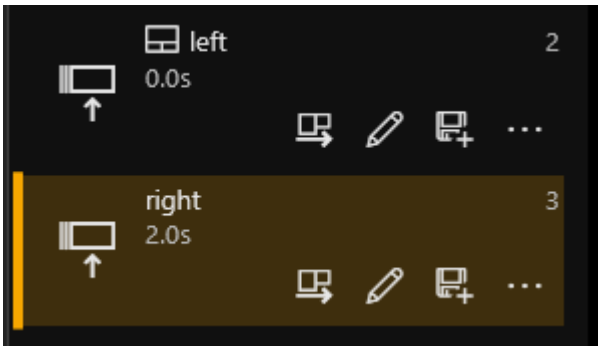
You can load any of your saved presets in CORIOgrapher from Dashboard or Editor.

- From Dashboard, select a preset.



Or

- From Editor, select Show presets. In Presets, find the preset you want to show, select .
  - The yellow bar indicates the last loaded preset.



Show me some preset scenarios

You can use presets to create installations for various scenarios, from simple to sophisticated. Using the presets correctly can dramatically reduce the number you will need to achieve your desired results.

All the windows presets

All the windows presets are great for resetting the canvas to a known state, for example at the start of the day, event, or meeting. You can put all the windows and source selections back to something you know is good to use.

Layout only presets

Presets can be created that do not change the source selection of windows. This can be used when you want to change the layout of the windows, but keep your window sources as you have set them.

You can change the window source for specific windows from CORIOgrapher or with a third-party controller using the API.

Control different aspects of the same area on the canvas

You can control different groups of windows in your installation on the same canvas, for example you have a main presenter display and 2 side displays, you can create presets that only change the windows you want.

Zone your canvas

If using different canvases is not possible then you can extend the concept of controlling different areas to zoning your canvas.

Recommendations when naming presets:

- Create prefixes for the different zones, for example Room_1_ and Room_2_.
- Prefix your displays with the same zone as your presets to help organize the canvas, for example Room_1_LED_1.
- Have a 'reset all' preset that puts the whole canvas back to a known good state, for example 'Default Start Up'.
- Have a 'reset zone' preset for example Room_1_Reset or Room_1_Default.
- Leave enough space between the zones for window transitions on and off the displays.
- Third-party controllers can use the prefix to filter by zone, so you only see the presets you are interested in.

Space is important

✖ Zones are too close together

✔ Zones have enough space to move windows around the displays

Adding more windows with existing presets.

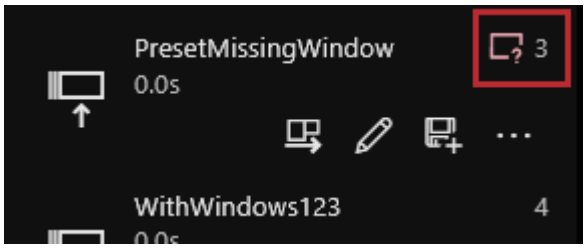
If you are adding new windows after you have created presets then existing presets will not know about the new windows. When you load a preset these windows will not update, if this is undesirable behavior you can include them in your presets.

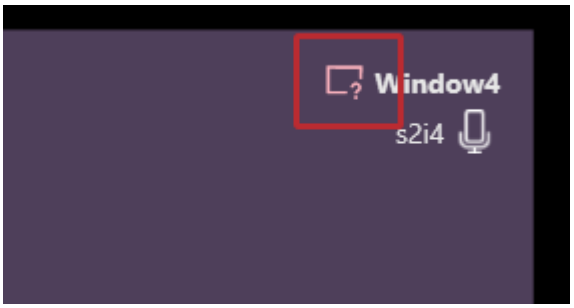
You can use the preset window analyzer to help identify presets and windows that need your attention.

Enabling or disabling the preset window analyzer

1. From Editor, select Show presets. In Presets, select to enable or disable the analyzer.

2. If you have windows missing from presets then a dialog will give you instructions on what you can do.
3. Check each canvas and look for on presets and windows to indicate what needs your attention.



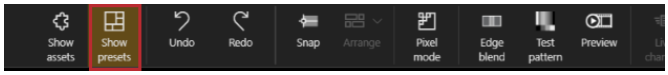


You can disable the preset window analyzer when you have finished.

The analyzer is disabled each time you load or read a device configuration.

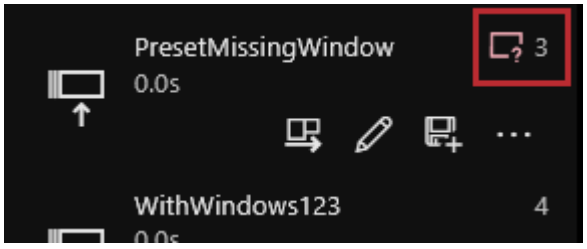
Manually updating presets with the new windows

1. From Editor, select Show presets.



2. In Presets, select to enable the analyzer.

3. In Presets, choose a preset to update by looking for .



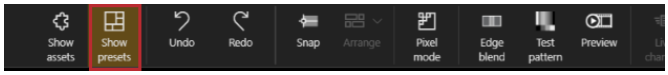
4. Select to edit the preset. This will load the preset into the preset editor without changing the currently loaded preset on your device.
5. Include and reposition your windows.
6. Select Save from the preset editor toolbar.

Read more about editing presets on page 67.

Bulk updating presets

Do not bulk update presets if you are deliberately using selected windows in your presets.

1. From Editor, select Show presets.



2. In Presets, select to enable the analyzer.

3. In Presets, select to bulk update the canvas presets.

4. We will automatically add the windows that are not in the presets in their current location.

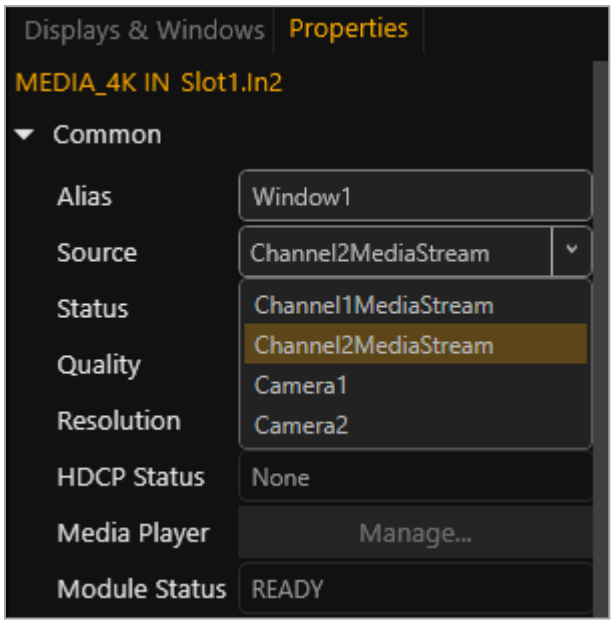
You can do a mixture of manually updating some presets, and bulk updating the rest.

Changing the source playing in a free window

You can choose which source plays in any free window in CORIOgrapher™. You can't change the source playing in a dedicated window. Dedicated windows are always cyan. The color of free windows depends on the quality of the window.

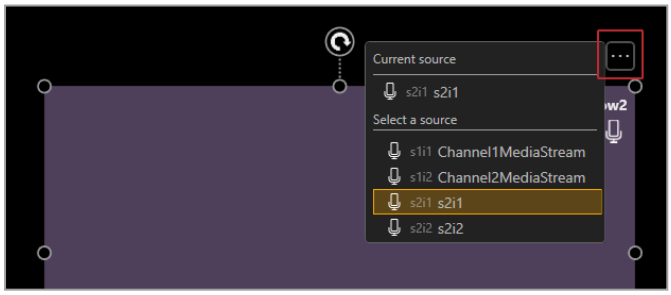
Changing the source in CORIOgrapher from the Properties panel

1. From Editor, double-click the free window you want to change.
2. From Properties, choose a source from Source.



Changing the source in CORIOgrapher from the window

1. From Editor, select the free window you want to change.
2. Select •••, choose a source from list.



You can mute and unmute a source's audio by selecting the microphone next to the source.

Changing the source using the dashboard

You can change the source playing in any free window from the dashboard in CORIOgrapher.

1. From Dashboard, find the free window you want to change, and select a source.

2. Select Take.

Using audio

CORIOmaster2™ supports embedded audio.

Read about setting up and testing your audio on page 46.

In this section

Playing embedded audio 81

Playing embedded audio

You can play embedded audio. There are two modes, breakaway audio mode, and audio-follows-video mode.

Read about setting up and testing your audio on page 46.

> Audio is not saved as part of a preset.
> Audio settings are set for sources, not windows. If you adjust or mute the audio from a window, all the windows playing that source are affected.

In this article

About embedded audio 82
Disabling and enabling audio for a source or display 82
Choosing what to listen to with CORIOgrapher 85
What's breakaway audio? 85
Choosing which outputs play audio 87
Adjusting input audio level and muting sources 87
Muting individual audio outputs 89
Cutting to black and muting individual outputs 89
Adjusting volume and muting all displays and outputs associated with a canvas 90
Cutting to black and muting all displays and outputs associated with a canvas 91
Controlling audio from the dashboard 92
Emergency cut to black and mute 92

About embedded audio

- You can play embedded audio from any input port on any input module, as long as the embedded audio is in uncompressed PCM format, at 48 kHz.
- You can play embedded audio, and audio from the S/PDIF and analog audio module, on any output device associated with your video wall.
- CORIOmaster supports 2-channel audio, and does not support surround sound.
- You can only play audio from the S/PDIF and analog audio module in breakaway audio mode.

Disabling and enabling audio for a source or display

If you never want to hear a source, or you never want to play audio on a specific display, you can disable it.

Administrators can disable audio from Settings > Slot Status.

Administrators and power users can disable audio from Editor > Properties.

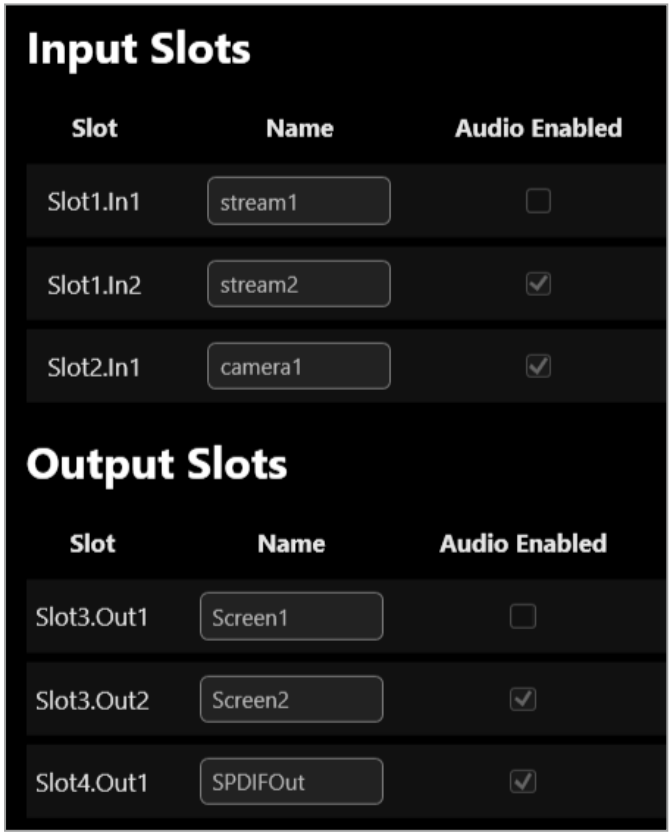
> Users cannot re-enable the audio, so if you want other users to be able to restore audio, mute the source or display instead.

When the audio from a source is disabled, it is not available to select from the wall editor or the dashboard. When the audio to a display is disabled, the button to mute and unmute audio on that display is not available from Displays & Windows.

Disabling and enabling audio from Slot Status

Administrators can disable and enable sources and outputs.

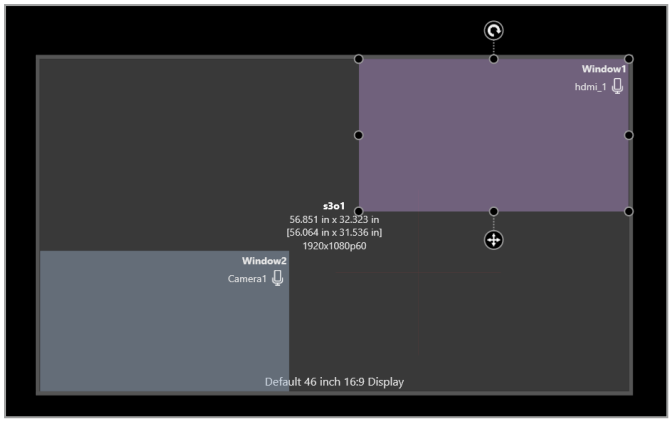
1. Select Settings > Slot Status.
2. Select or clear Audio Enabled.



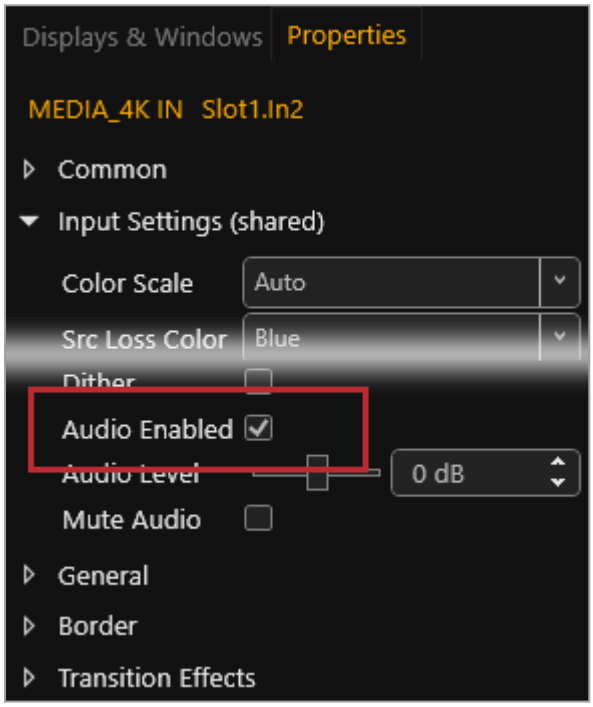
Disabling and enabling an audio source playing in a window from Properties

Administrators and power users can disable audio sources.

1. From Editor, select a window.



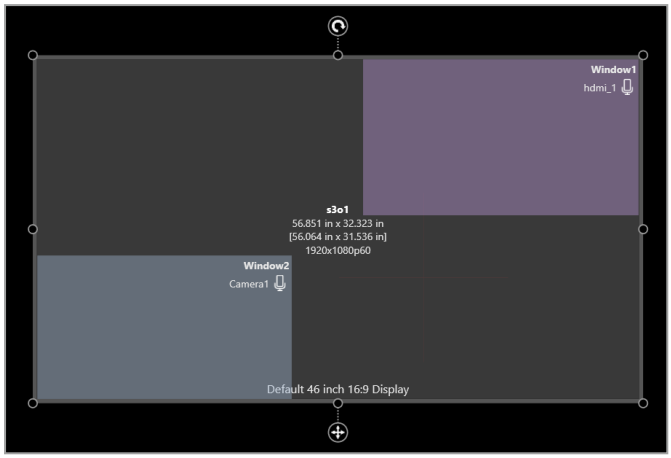
2. Select Properties > Input Settings (shared).
3. Select or clear Audio Enabled.



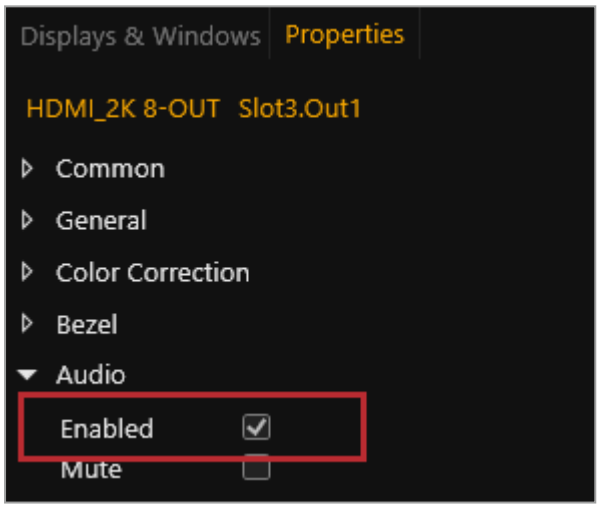
Disabling and enabling audio for a display from Properties

Administrators and power users can disable audio for displays.

1. From Editor, select a display.



2. Select Properties > Audio.
3. Select or clear Audio Enabled.



Choosing what to listen to with CORIOgrapher

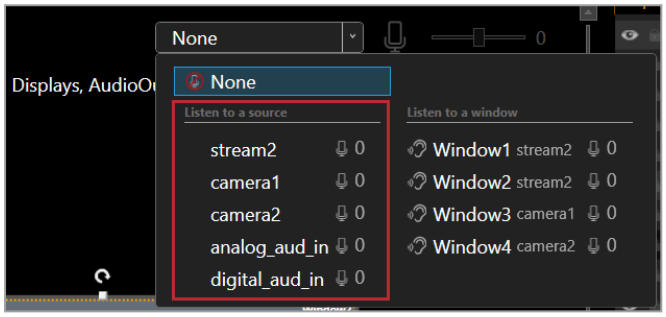
All users can choose what embedded audio to listen to.

Choosing a source to listen to with breakaway audio mode

> **What's breakaway audio?**
>
> Breakaway audio is independent of the windows on your video wall. It doesn't change when the sources playing in your windows change. The audio is sent to all enabled outputs.

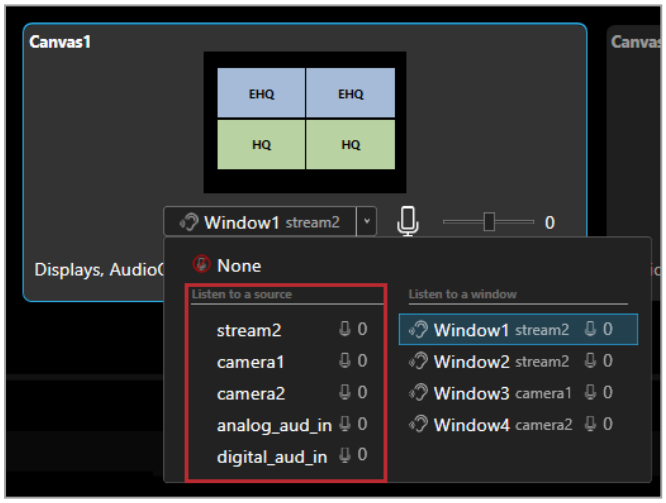
When you choose breakaway audio mode, you hear your chosen audio all the time, even if your video sources change.

- From Editor, select a source from the list.



Or

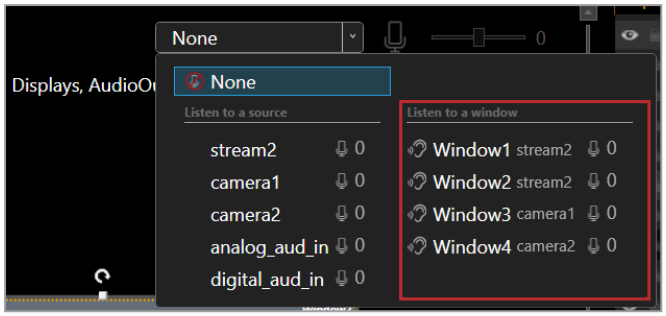
- From Dashboard, select a source from the list.



Choosing a window to listen to with audio-follows-video mode

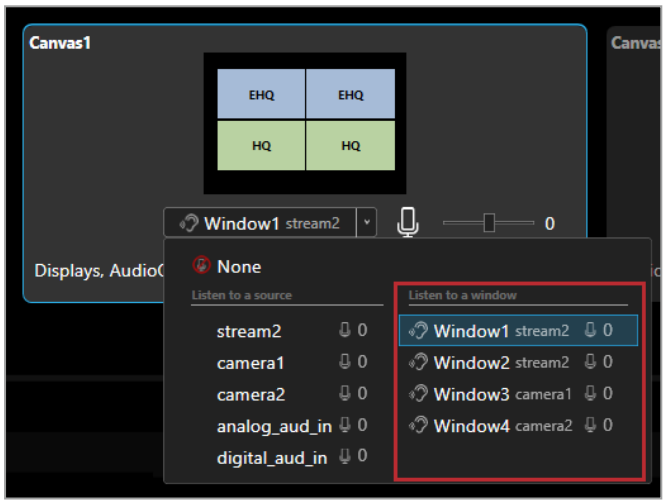
When you choose audio-follows-video mode, you listen to a window. If the source playing in that window changes, the audio changes to play the new source.

- From Editor, select a window from the list.



Or

- From Dashboard, select a window from the list.



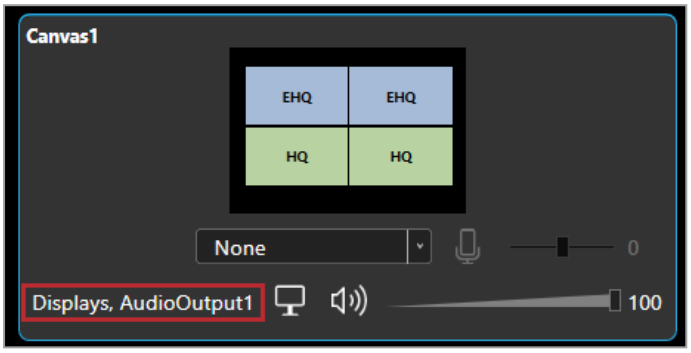
Choosing which outputs play audio

Audio from any source is sent to all the displays associated with a canvas. If you have an S/PDIF and analog audio module, the audio is also sent to the output associated with the canvas.

Read more about the S/PDIF and analog audio module on page 20.

You can see where audio is sent from Editor:

And from Dashboard:



You can choose to only send audio to one or more specific outputs by disabling or muting the other outputs.

Read about disabling outputs on page 82.

Read about muting outputs on page 89.

Adjusting input audio level and muting sources

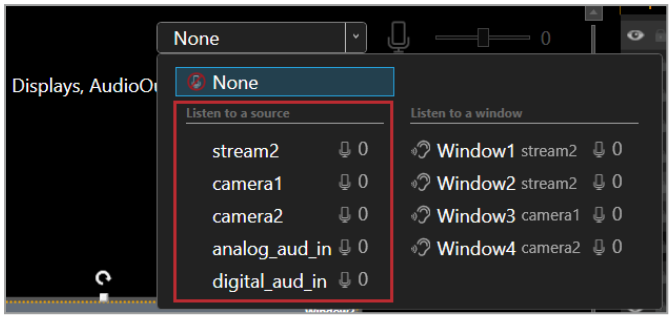
All users can mute, unmute, and adjust the input audio level for any source.

Adjust the input audio level to match and balance the audio levels of different sources. For example, if you have one very loud source, lower the input audio level until it matches your other sources.

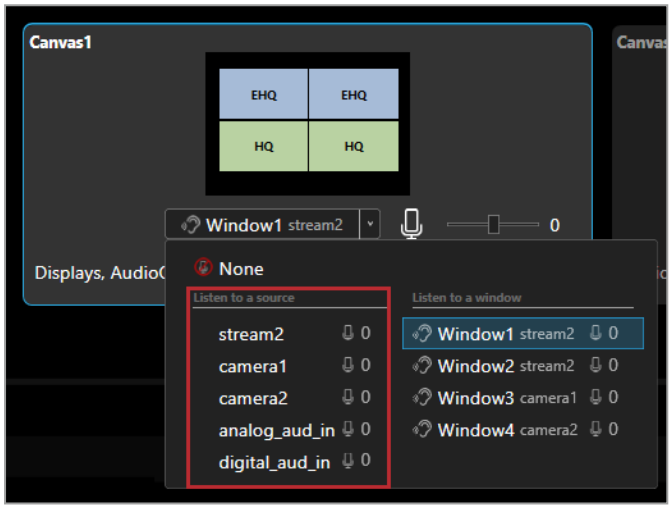
To mute and unmute a source

1. Select a source.

   From Editor:

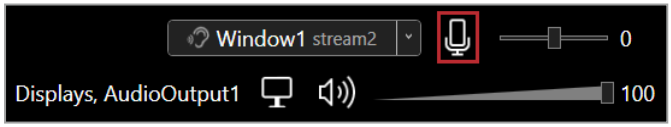


   From Dashboard:

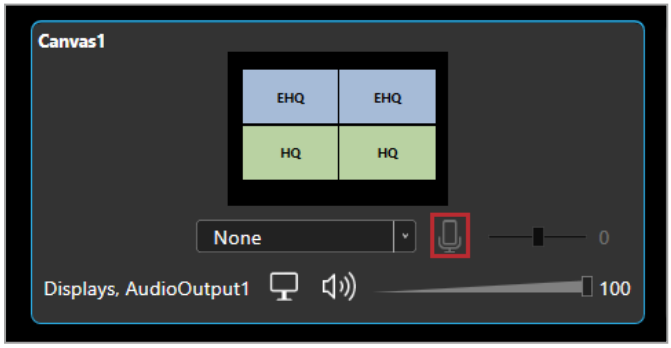


2. Mute or unmute the source.

   From Editor:



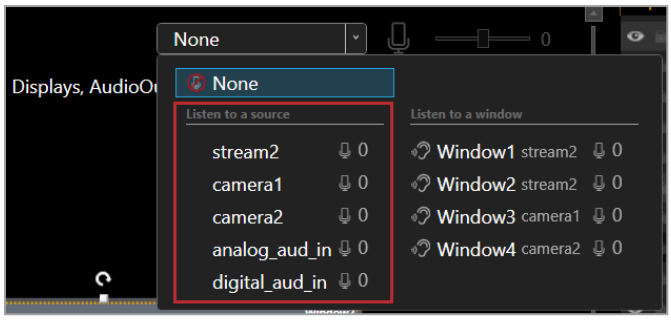
   From Dashboard:



   - To mute audio, select .
   - To unmute audio, select .

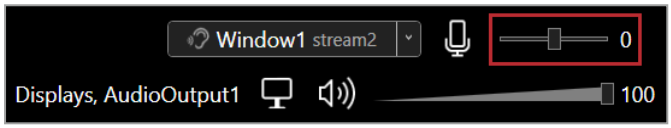
To adjust the input audio level for a source

1. Select a source.

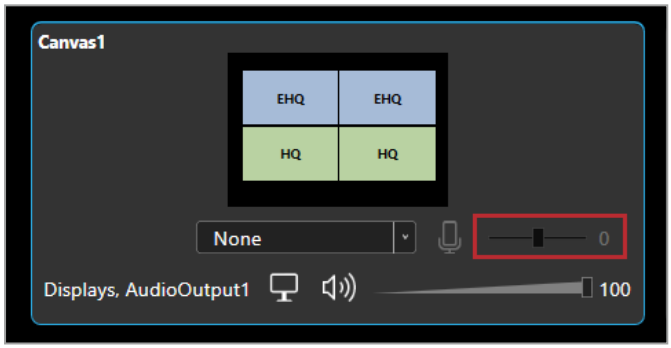


2. Adjust the input audio level.

   From Editor:



   From Dashboard:

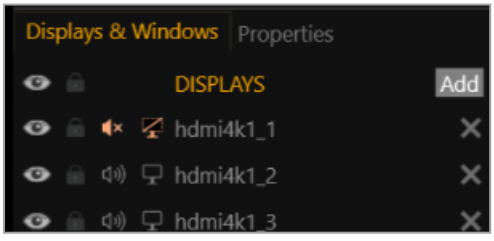


   - Slide to the right to increase audio input.
   - Slide to the left to reduce audio input.

Muting individual audio outputs

Administrators and power users can mute and unmute individual outputs.

From Editor > Displays & Windows:



- To mute audio, select .
- To unmute audio, select .

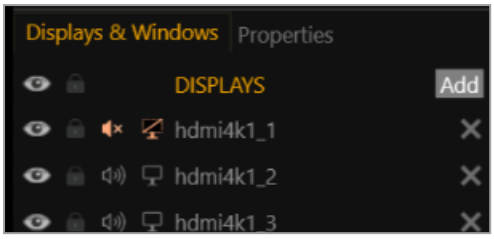
Outputs that do not show or are disabled in Settings > Slot Status.

Outputs that show are cut to black and muted, or the canvas is muted.

Cutting to black and muting individual outputs

Administrators and power users can cut to black and mute individual outputs, and restore them.

From Editor > Displays & Windows:



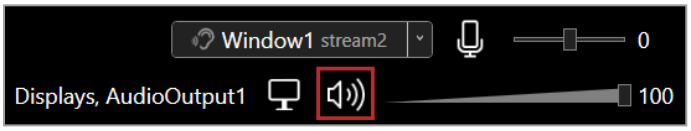
- To cut a display to black and mute, select .
- To restore a display, select .

Adjusting volume and muting all displays and outputs associated with a canvas

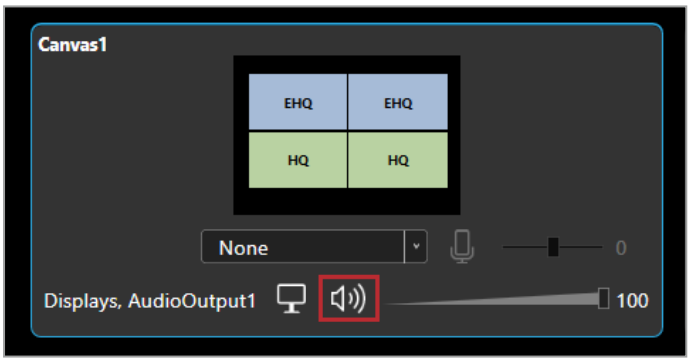
All users can mute, unmute, and adjust the volume for all displays and outputs associated with a canvas at the same time in CORIOgrapher.

To mute and unmute all displays and outputs associated with a canvas

From Editor:



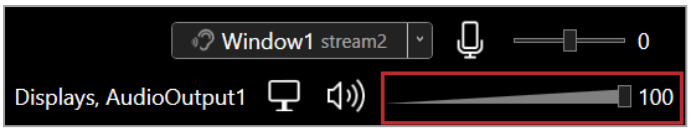
From Dashboard:



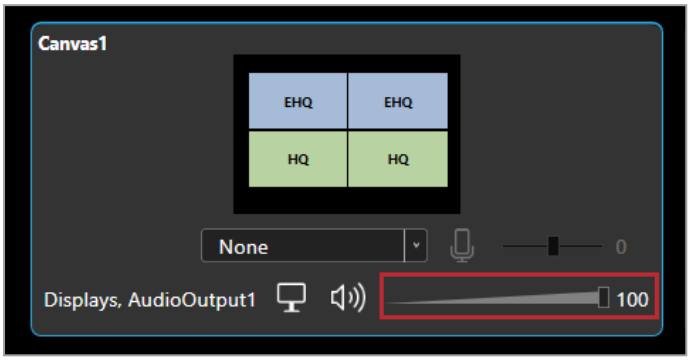
- To mute audio, select .
- To unmute audio, select .

To adjust the volume for all displays and outputs associated with a canvas

From Editor:



From Dashboard:



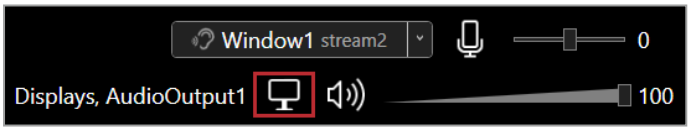
- Slide to the right to increase volume
- Slide to the left to reduce volume

Cutting to black and muting all displays and outputs associated with a canvas

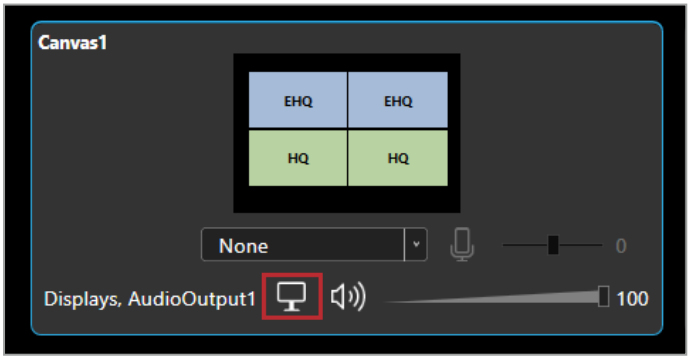
All users can cut to black and mute, and restore, all displays and outputs associated with a canvas at the same time in CORIOgrapher.

To cut to black and mute all displays and outputs associated with a canvas

From Editor:



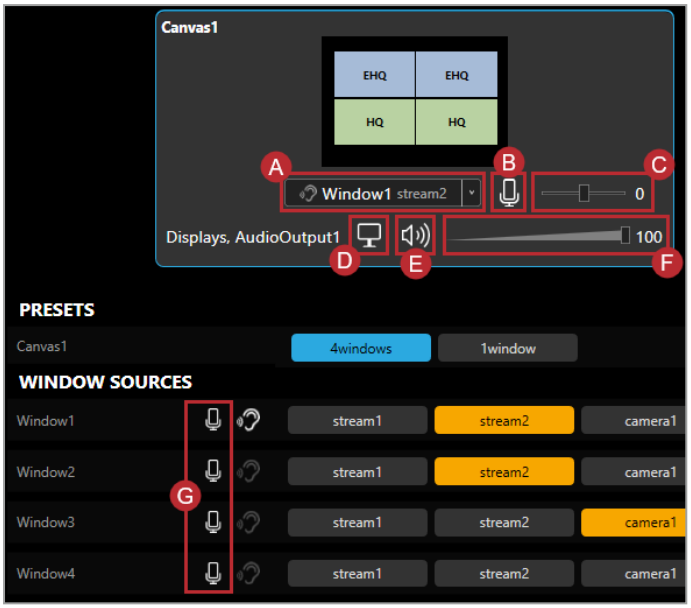
From Dashboard:



- To cut to black and mute all displays and outputs associated with the canvas, select .
- To restore all displays and outputs associated with the canvas, select .

Controlling audio from the dashboard

All users can choose what to listen to, mute and unmute specific sources and the current source, mute all displays and outputs, and adjust the input audio level and volume.



A	Select a source or window to listen to.
B	Mute and unmute the source currently playing.
C	Adjust the input audio level of the source currently playing.
D	Cut to black and mute all displays and outputs, and restore all displays and outputs.
E	Mute and unmute all displays and outputs.
F	Adjust the volume of all outputs.
G	Mute the sources playing in specific windows.

Emergency cut to black and mute

All users can cut to black and mute, and restore, all displays and outputs across all canvases in CORIOgrapher > Dashboard.

To cut to black and mute all displays and outputs

- To cut to black and mute all displays and outputs, select .
- To restore all displays and outputs, select .

Media and streams

If you have a Streaming media and 4K playback input module, you can play media items and streams.

In this section

Playing media and streams 93
Creating and managing playlists 104
Using the internal drive 111
Choosing the best resolution for your playlist or play queue 114

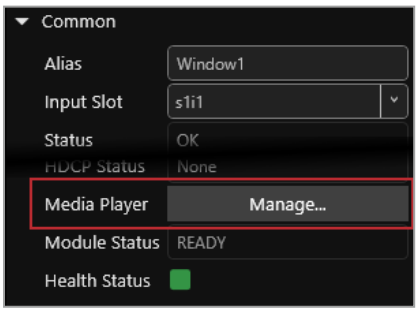
Playing media and streams

If you have a Streaming media and 4K playback input module, you can play media items and video streams. Add up to 40 media items or streams to a play queue or saved playlist. Each Streaming media and 4K playback input module has two channels. Each channel has its own play queue.

In this article

Before you start 94
Adding and editing media streams 94
Adding media items, streams, and playlists to your play queue 96
Playing a multicast stream from an Magenta Encoder-100 on multiple CORIOmaster2 units 97
Changing the duration of media items 98
Playing streams with low latency 99
Using the playback controls 100
Managing the play queue 101
Saving the play queue 102
Show labels for media and streams 102
Playing the play queue automatically 103
Saving media to internal storage 103

Manage your media and streams in CORIOgrapher™. Double-click the window you wish to play media or streams, and select (Media Player) Manage.



The media player is not available when you work offline.

Streaming media and 4K playback input modules in CORIOmaster2™ units support embedded audio, for streams and media items with the following embedded audio formats:

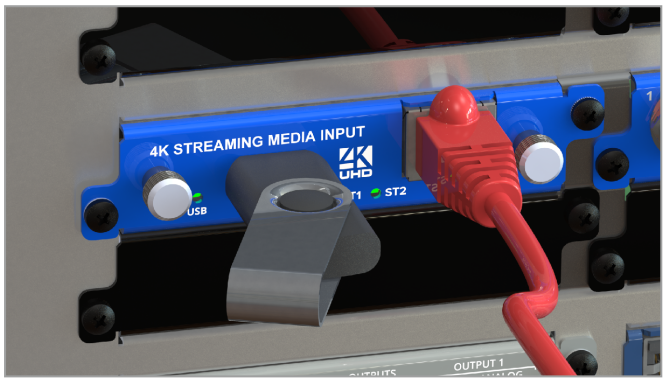
- mp3
- aac

> CORIOmaster2 automatically mutes audio from streams with low latency.

Read more about playing audio with your CORIOmaster2 on page 81.

Before you start

- To stream media from the internet or your network, you need to connect an Ethernet cable and configure the network settings for your Streaming media and 4K playback input module.



> For best results, use Gigabit equipment and cables.

Read about configuring network settings for a Streaming media and 4K playback input module on page 57.

- To turn any video source into a stream, you need an encoder. The encoder takes video and audio signals, converts them to an AVIP (Audio-Visual over Internet Protocol) signal, and sends them over your network. For example, you could encode and stream the signal from an endoscope, or from a camera in a lecture theater.

  Read about the Magenta Encoder-100 on page 21.

- To play media directly from a USB drive, or copy media from a USB drive to internal storage, you need to connect a USB drive to your Streaming media and 4K playback input module.

> Use a good quality, high-speed USB 3.0 drive.

- To play media saved in the internal storage of the Streaming media and 4K playback input module, you don't need to connect anything.
- To play any kind of media you need to set up a video installation with a window playing a channel from your Streaming media and 4K playback input module.

  Read about setting up a basic video wall on page 41.

Adding and editing media streams

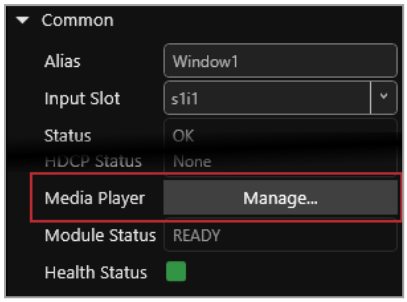
You can manually add media streams from your network or from the internet. You can configure and add streams from an Magenta Encoder-100.

Read about configuring your Magenta Encoder-100 at help.tvone.com/r/docs/cm2/encoder-100/1.

To manually add a stream

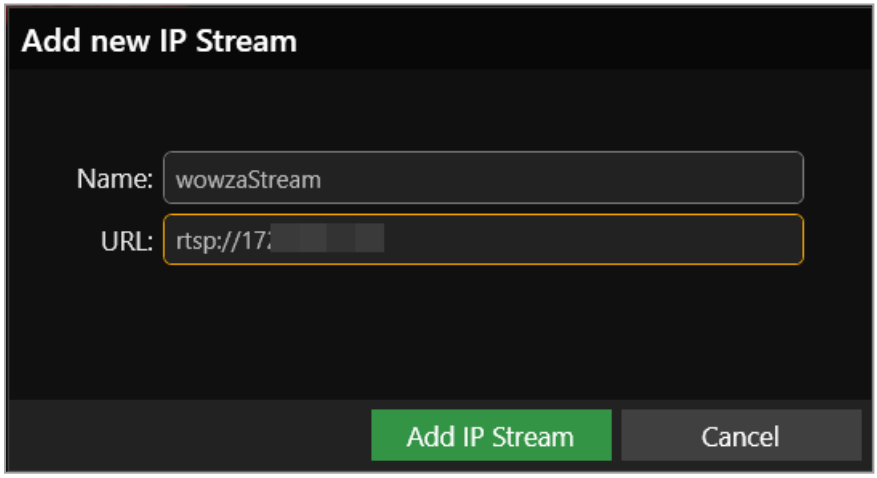
If you know the URL of the stream, and the stream is not hosted by an Magenta Encoder-100, use this method.

1. In Editor, double-click the window you wish to play streaming media, and select (Media Player) Manage.



2. Select IP Streams.

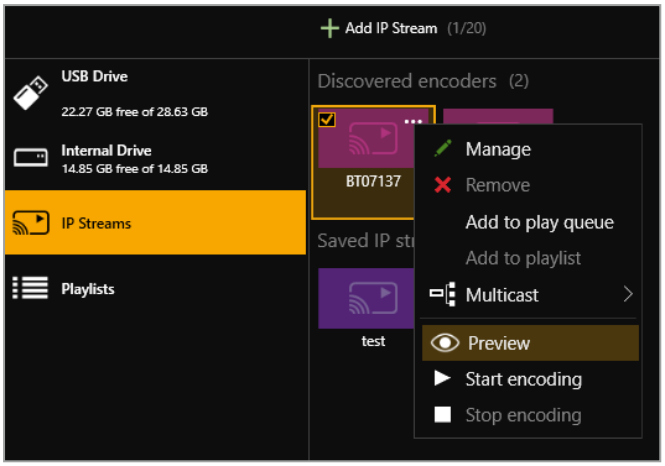
3. Select Add IP Stream.
4. Enter a descriptive name and the URL of the media stream, and then select Add IP Stream.
5. To edit the details of a media stream, select the stream and then select ••• > Edit.
6. Edit the name or URL of the media stream.



Previewing the stream from your Magenta Encoder-100

If you have an Magenta Encoder-100 that is streaming, you can preview the stream.

- Select the Magenta Encoder-100, and then select ••• > Preview.



Adding media items, streams, and playlists to your play queue

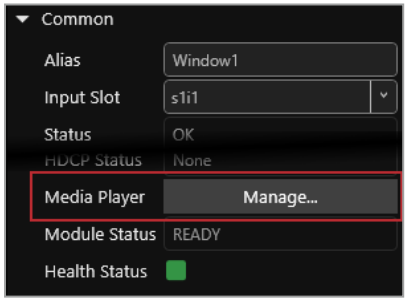
You can add video clips, still images, and media streams to a play queue, up to a total of 20 items. Media items can be on a USB drive, in internal storage, streamed from your network, or streamed from the internet.

You can also add a playlist to a play queue. When you add a playlist to a play queue, the playlist replaces all the items in the play queue.

You add all types of media, streams, and playlists the same way, when the play queue is playing, paused, or stopped.

You can play audio embedded in video clips and media streams. You cannot play audio-only files.

1. In Editor, double-click the window you wish to play streaming media, and select (Media Player) Manage.



2. Select your media source.

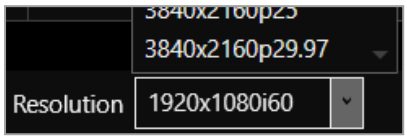
3. Drag media items and streams, or a playlist, into the play queue.

Still image

Saved stream

	Video clip		Found encoder
	Playlist		Found encoder, streaming

4. Choose a resolution for your play queue.



Read about choosing the right resolution on page 114.

Read more about playlists on page 104.

Playing a multicast stream from an Magenta Encoder-100 on multiple CORIOmaster2 units

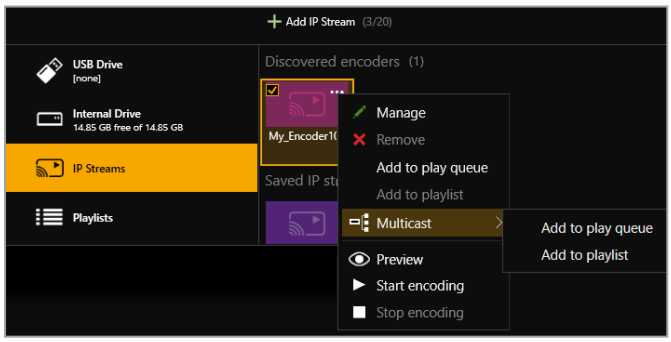
By default, your Magenta Encoder-100 supplies a single stream to a single CORIOmaster2. You can supply a multicast version of that stream to more than one CORIOmaster2.

Adding a multicast stream from an Magenta Encoder-100 to a play queue or playlist

- You don't need to configure your Magenta Encoder-100 to send a multicast stream, if your default address and TTL are correct for your network.

  For more help, contact your network administrator.
- To add a multicast stream to the play queue, the play queue must be stopped.
- To add a multicast stream to a playlist, first select a playlist.

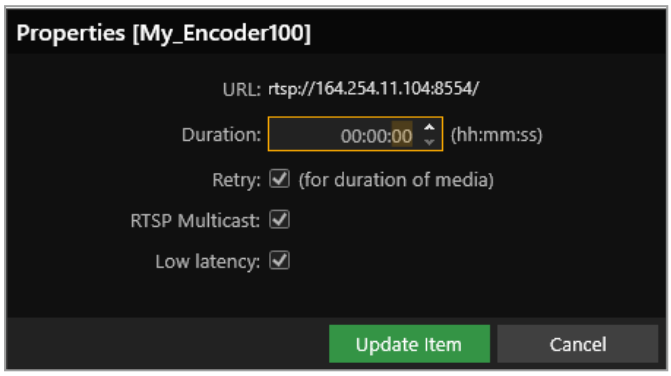
1. Select IP Streams.
2. Select the Magenta Encoder-100 you want to add.
3. Select ••• > Multicast > Add to play queue or Add to playlist.



Changing a single stream to a multicast stream

If you already added a single stream from an Magenta Encoder-100 to the play queue or a playlist, you can change the single stream to a multicast stream.

1. If the encoder is in a playlist, open the playlist.
2. Select the encoder, and select ••• > Edit.
3. Select RTSP Multicast.



For best results

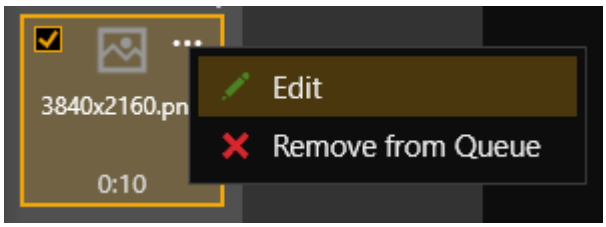
If you send a multicast stream on a large network, tvONE™ recommends using equipment with IPv4 multicast addressing, and/or IGMP v2 support. For more information, contact your network administrator.

Changing the duration of media items

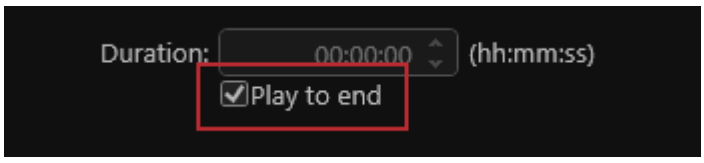
By default, still images play for 10 seconds, video clips play for the length of the clip, and streams play indefinitely, until the stream ends.

You can choose how long to play each media stream, video clip, or still image in the play queue.

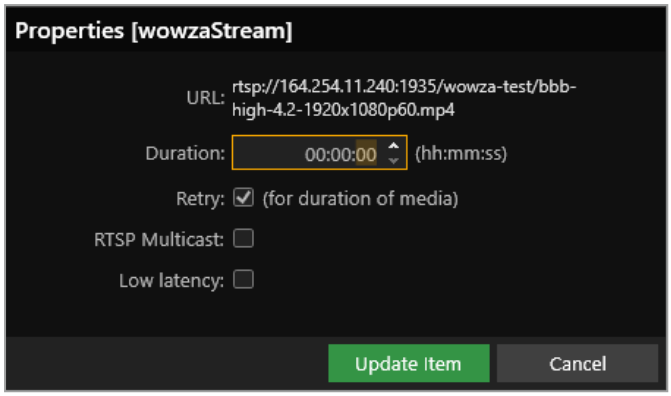
1. In the play queue, select the media item.
2. Select ••• > Edit.



3. Optional: For video clips clear the Play to end option.



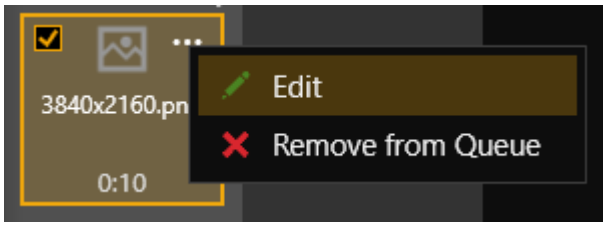
4. Edit the duration of the item, and select Update Item.
   The maximum duration is 23 hours, 59 minutes, and 59 seconds.



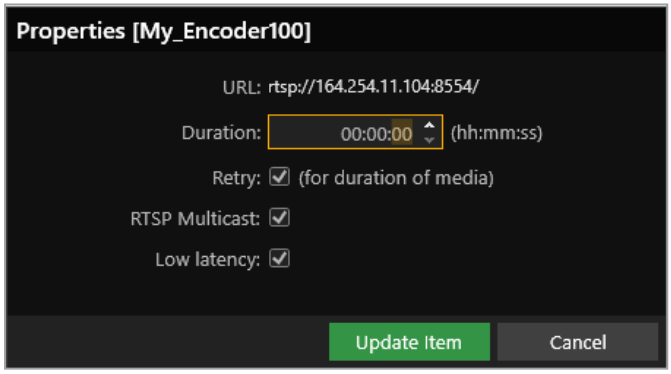
Playing streams with low latency

You can play streams with low latency.

1. In the play queue, select the stream.
2. Select ••• > Edit.



3. Select Low latency.

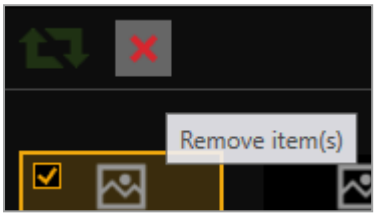
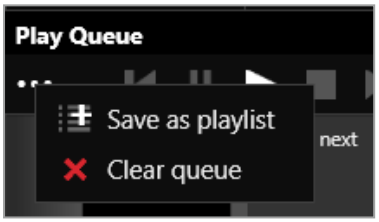


Repeat these steps for every item in the play queue that you want to play with low latency.

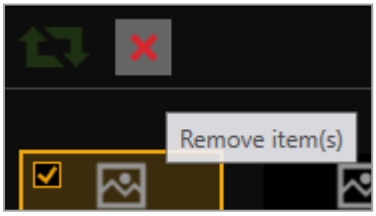
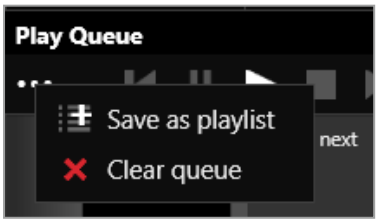
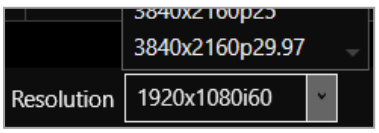
> CORIOmaster2 automatically disables the audio of streams with low latency. If you want to listen to audio from your stream, clear Low latency.

Using the playback controls

When the play queue is playing, you can:

	Stop playback
	Pause playback
	Skip to the next item
	Return to the previous item
	Remove an item from the play queue
	Clear the play queue

When the play queue is stopped, you can:

	Enable and disable looping
	Play the play queue
	Remove an item from the play queue
	Clear the play queue
	Change the resolution of the play queue

Managing the play queue

When the play queue is playing or stopped, you can:

- Drag new media items or streams into the play queue, up to a total of 20 items.
- Drag items to re-order the play queue.
- Change the duration of a media item in the play queue.
- Remove any item from the play queue.
- Clear the entire play queue.
- Choose to play the play queue when your CORIOmaster2 starts up.
- Drag a playlist into the play queue.
  Dragging a playlist into the play queue replaces the existing play queue.

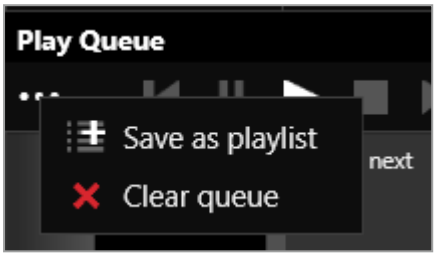
Saving the play queue

You can save your play queue so that it is available the next time you start your CORIOmaster2.

- Build your play queue, and in Editor select Set device startup.

You can save your play queue as a playlist.

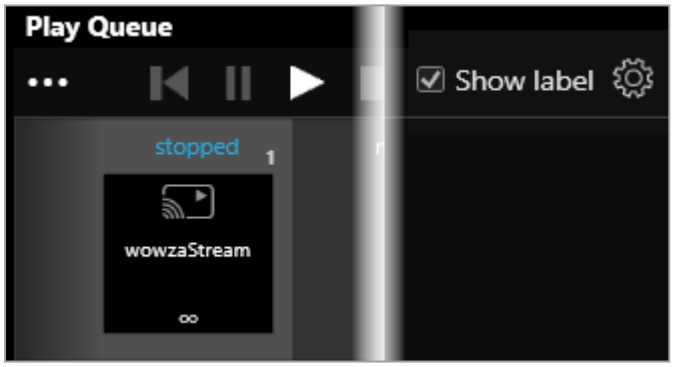
- Build your play queue and select ••• > Save as playlist.



Show labels for media and streams

You can choose to have labels shown on the video for your media and streams on your CORIOmaster2.

1. Build your play queue and select Show label.



2. Select ⚙.
3. Choose, or set the options for the play queue label.

> Label options are for the play queue, so will apply to any items that are in the play queue.

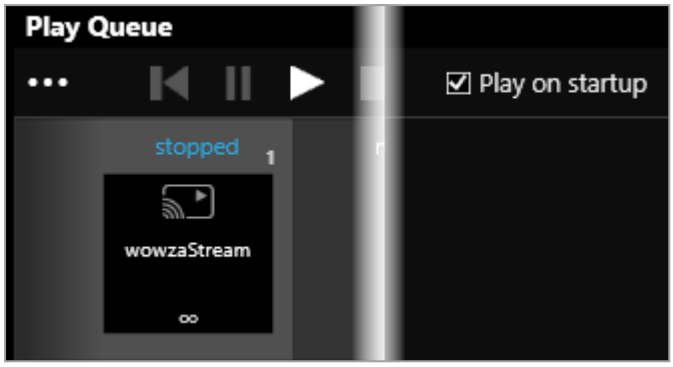
4. Select Apply to send the changes to your device. The dialog will remain open.
5. Select Close to close the dialog.

> Close will discard changes that have not been applied.

Playing the play queue automatically

You can choose to play the play queue automatically when you start your CORIOmaster2.

1. Build your play queue and select Play on startup.



2. In Editor, select Set device startup.

Saving media to internal storage

You can save media items from your USB drive to the internal drive.

Read more about the internal drive on page 111.

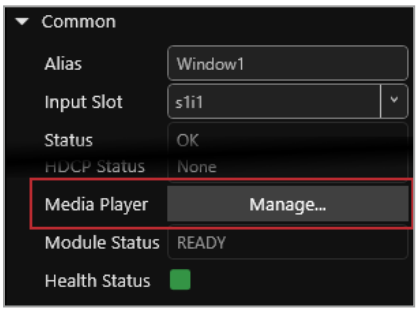
Creating and managing playlists

If you have a Streaming media and 4K playback input module, you can save media items and video streams to playlists. Your CORIOmaster2™ can store up to 20 playlists.

In this article

About playlists 104
Creating a new playlist 105
Saving the play queue to a playlist 106
Managing and editing playlists 107
Deleting a playlist 109
Moving playlists between modules 109
Deleting all playlists 109
Duplicating playlists 110

Manage your media and streams in CORIOgrapher™. Double-click the window you wish to play media or streams, and select (Media Player) Manage.



The media player is not available when you work offline.

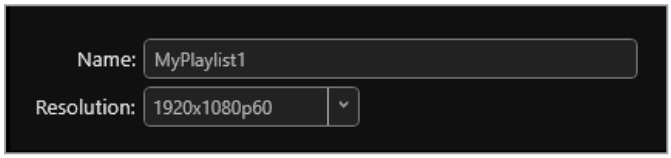
About playlists

- Your CORIOmaster2 can store up to 20 playlists.
- Each playlist can include up to 20 items, including still images, video clips, and streams.
- Playlists are shared between the two channels of a Streaming media and 4K playback input module, but are not shared between Streaming media and 4K playback input modules.
- Playlists save the names and paths of media items and streams. If you change the name, path name, or location of an item, the playlist cannot find it.
- You can create new playlists from scratch, or save your play queue as a playlist.
- Playlists are saved on your CORIOmaster2.
- You can choose to save or delete your playlists when you restore your CORIOmaster2 to factory default settings.

Creating a new playlist

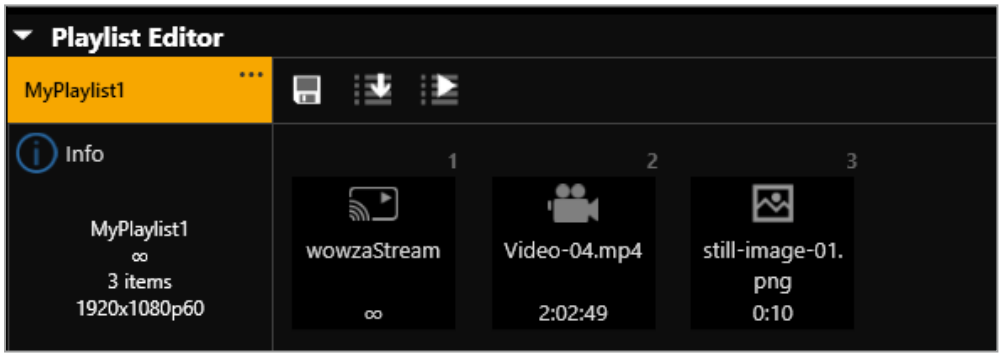
1. Select Playlists > +.

2. Enter a name and choose a resolution for your playlist.
   Names can be up to 64 characters long, or fewer, depending on your character set.

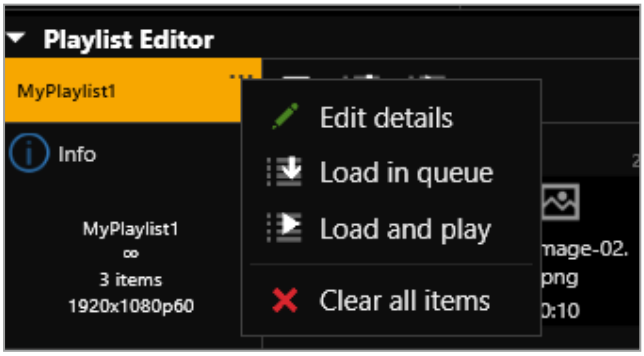


Read about choosing the right resolution on page 114.

3. Select your new playlist.
   The playlist opens in the playlist editor. If the playlist editor is collapsed, select ▶ to open it.



4. Drag up to 20 media items and streams from the media browser into the playlist editor.
5. Make any changes to your playlist.
   - To reorder the playlist, drag and drop media items and streams.
   - To remove something from the playlist, select the media item or stream and select ••• > Remove from playlist.
   - To remove all items from the playlist, select ••• > Clear all items.

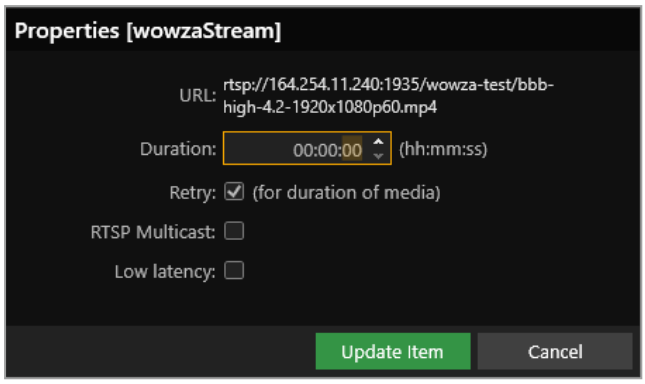


   - To change the properties of an item, select the item, and then select ••• > Edit.

You can change the duration of an item in the playlist.

You can choose to play a stream with low latency.

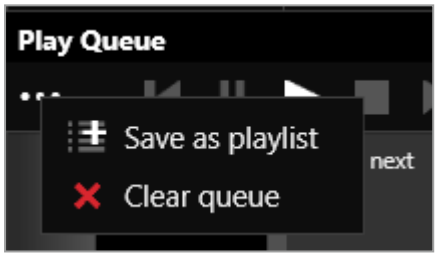
> If you choose to play a stream with low latency, CORIOmaster2 disables the audio from your stream.



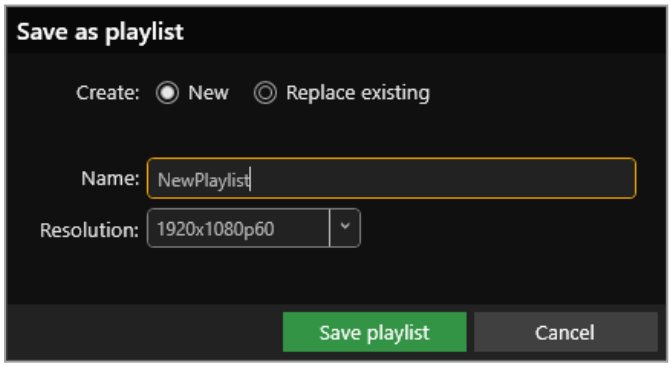
6. To save your playlist permanently, select 🖫.

Saving the play queue to a playlist

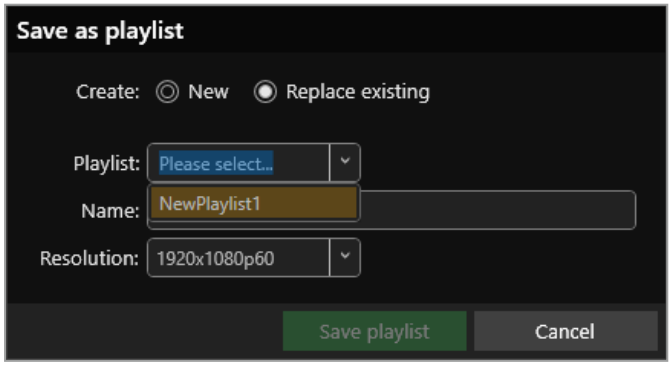
1. From the play queue, select ••• > Save as playlist.



2. Choose to create a new playlist, or to replace an existing playlist.
3. If you create a new playlist, enter a name and choose a resolution for your playlist.



4. If you replace an existing playlist, select a playlist to replace from the list. You can enter a new name and choose a new resolution for the playlist if you want to.



Names can be up to 64 characters long, or fewer, depending on your character set.

Read about choosing the right resolution on page 114.

Managing and editing playlists

You can edit playlists, clear all the items from a playlist, and open a playlist to edit the items. You can load a playlist to the play queue, and play a playlist.

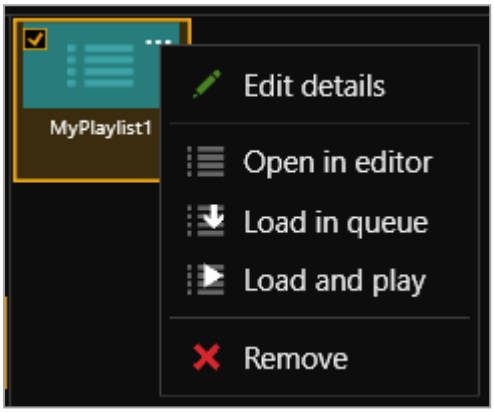
You can also manage the names and locations of your playlists in ⚙ Settings > Playlists.

Read more about configuring playlist settings on page 59.

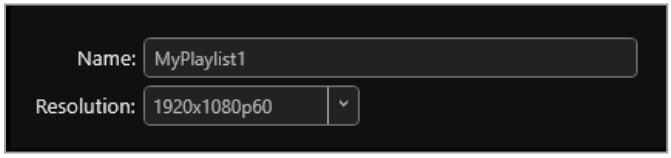
Editing a playlist

You can change the name and resolution of a playlist.

1. Select Playlists and select a playlist.
2. Select ••• > Edit details.

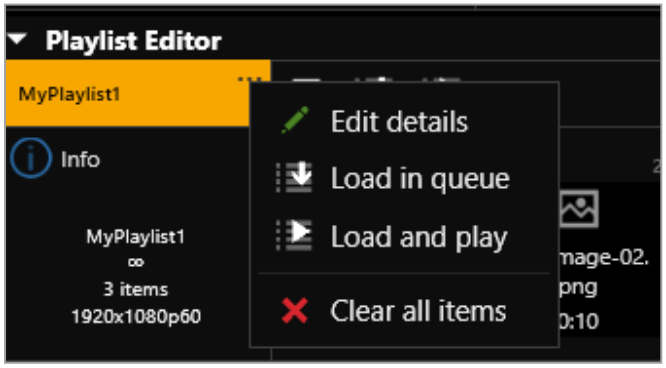


3. Enter a new name or choose a new resolution.



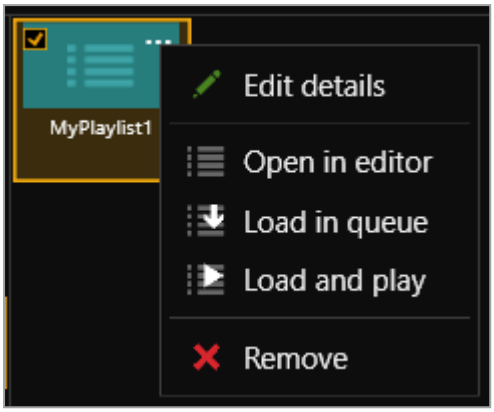
Clearing all the items from a playlist

- From the playlist editor, select ••• > Clear all items.



Opening a playlist to edit the items

1. Select Playlists and select a playlist.
2. Select ••• > Open in editor.



Read about the changes you can make to a playlist in Creating a new playlist above.

Loading a playlist to the play queue

When you load a playlist, any items in the play queue are replaced, and playback stops.

You can:

- Drag a playlist into the play queue
- Select a playlist and select ••• > Load in queue.
- From the playlist editor, select .

Playing a playlist

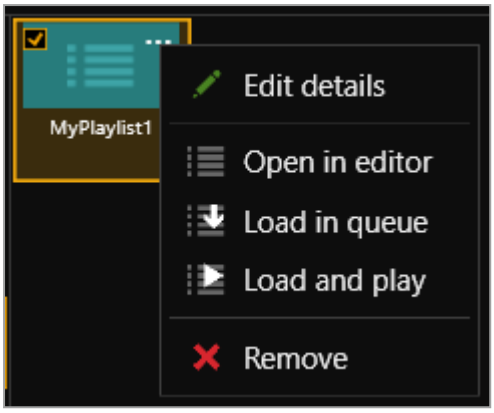
When you load and play a playlist, any items in the play queue are replaced.

You can:

- Drag a playlist into the play queue and select .
- Select a playlist and select ••• > Load and play.
- From the playlist editor, select .

Deleting a playlist

- Select a playlist and select ••• > Remove.



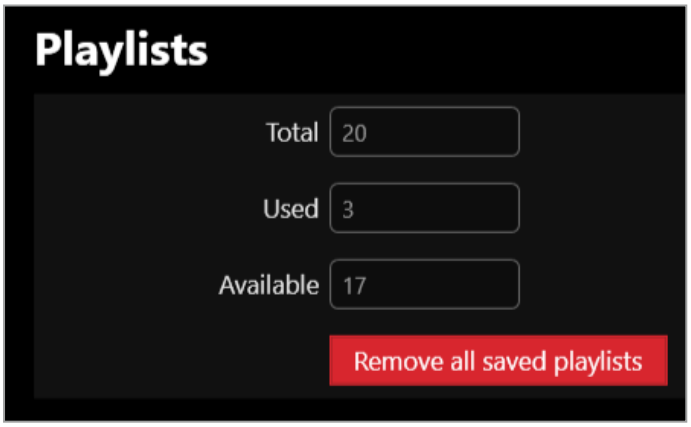
Moving playlists between modules

You can change the slot that a playlist is associated with in ⚙ Settings > Playlists.

Read more about configuring playlist settings on page 59.

Deleting all playlists

You can delete all your playlists in ⚙ Settings > Playlists.



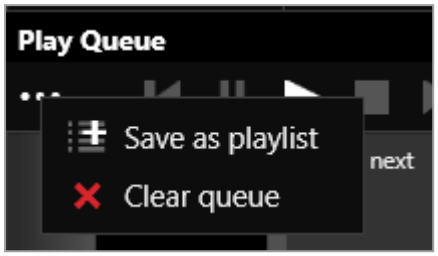
Read more about configuring playlist settings on page 59.

Duplicating playlists

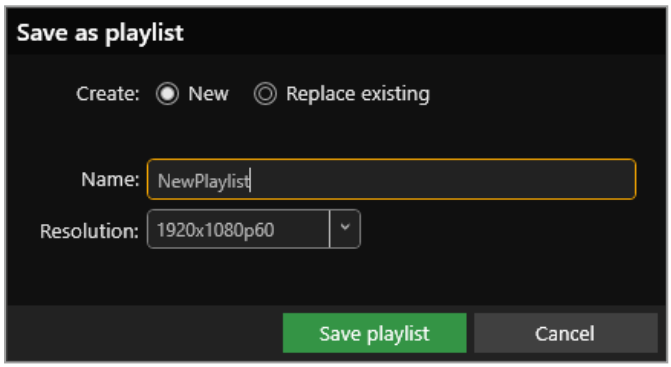
If you want several playlists to contain the same items, you can create a play queue and then save it under several different names.

For example, you might want all your playlists to contain a particular stream, and your company logo.

1. Drag items into the play queue.
2. From the play queue, select ••• > Save as playlist.



3. Enter a name and choose a resolution for your playlist.



4. Repeat steps 2 and 3. Enter a unique name for the playlist each time.
5. Open each new playlist and add items in the playlist editor.

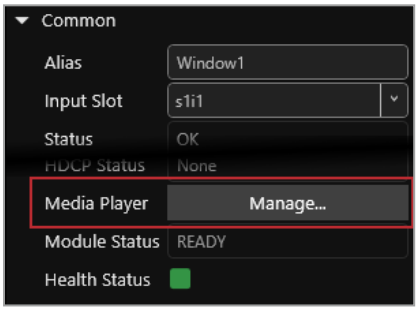
Using the internal drive

You can save media to the internal drive of your Streaming media and 4K playback input module. You can manage your saved media, and add media items to a playlist or play queue.

In this article

Replacing all items on the internal drive with all items on the USB drive 111
Removing all items from the internal drive 112
Current location 112
Copying a single item or folder to the internal drive 112
Managing media on the internal drive 112
Playing items from the internal drive 113

Manage your media and streams in CORIOgrapher™. Double-click the window you wish to play media or streams, and select (Media Player) Manage.



The media player is not available when you work offline.

Replacing all items on the internal drive with all items on the USB drive

Use this option when you first set up your Streaming media and 4K playback input module to easily copy all your media items from your USB drive to the internal drive.

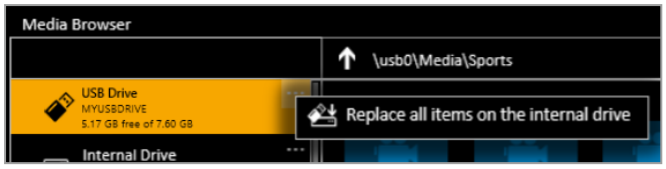
You can replace all the items on your internal drive with the items on your USB drive. All items currently on the internal drive are deleted.

All items on your USB drive are copied exactly to the internal drive, including folders and folder structure, up to path names of 480 characters, or fewer, depending on the language you use.

Items that aren't compatible with your Streaming media and 4K playback input module are copied to the internal drive, but not displayed. These items use memory, and you can't remove them manually. To remove hidden items, remove all items from the internal drive.
See the Streaming media and 4K playback module specification document for a list of compatible file types.

To replace all items on the internal drive with all items on the USB drive

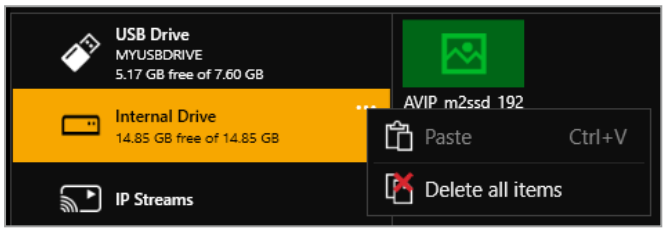
- Select (USB Drive) ••• > Replace all items on the internal drive.



Removing all items from the internal drive

You can remove all visible and hidden items from the internal drive.

- Select Internal Drive > Clear all items.



Current location

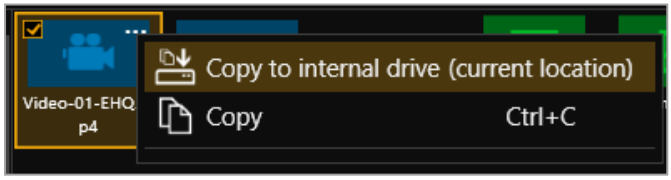
When you copy media items from your USB drive to the internal drive, the items are copied to the last location you visited on the internal drive.

For example, you create a folder on the internal drive called Videos. You open Videos and then select USB Drive. You select a media item and copy it to the internal drive. The media item is copied to Videos.

Copying a single item or folder to the internal drive

You can copy individual media items and folders from your USB drive to the internal drive. Items are copied to the last location you visited on the internal drive.

1. From USB Drive, select a media item or folder.
2. Select ••• > Copy to internal drive (current location).



You can also copy and paste individual items and folders from your USB drive to the internal drive with Ctrl+C and Ctrl+V.

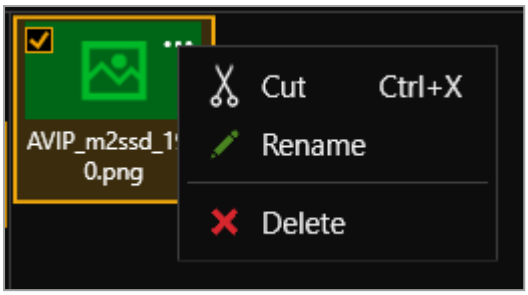
Managing media on the internal drive

From Internal Drive, you can:

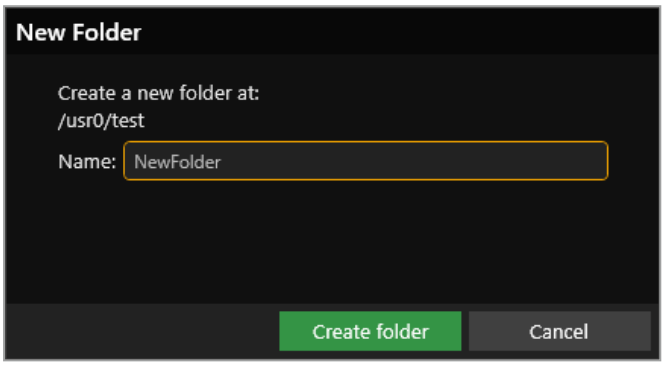
- Copy or cut and paste individual items and folders.

  Select a media item or folder, and then select ••• > Copy or Cut. Right-click in an empty space and select Paste.
- Copy or cut and paste individual items and folders with Ctrl+C or Ctrl+X, and Ctrl+V.
- Delete media items and folders.

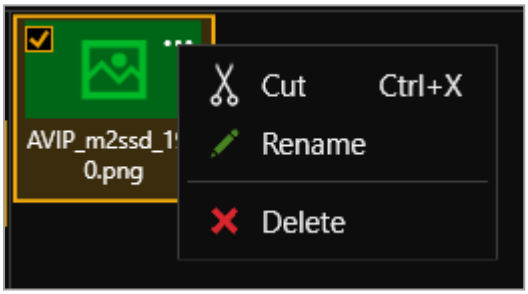
  Select a media item or folder, and then select ••• > Delete.



- Create a new folder.
  Right-click in an open space, and select New folder. Enter a name for your folder.



- Rename media items and folders.
  Select a media item or folder, and then select ••• > Rename.



Playing items from the internal drive

You play items from the internal drive in the same way you play all media items and streams. Drag items into the play queue, or into a playlist.

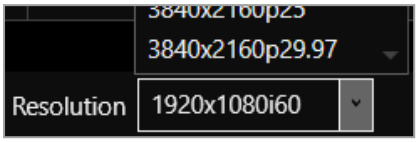
Read more about playing media and streams on page 93.

Read more about playlists on page 104.

Choosing the best resolution for your playlist or play queue

The best resolution for your play queue or playlist depends on the frame rate of your media items, and their size in pixels.

The resolution you choose determines the input resolution used within your device. All media items in the play queue or playlist are automatically scaled to fit this resolution. If you find that the resolution you choose doesn't give you the results you want, you can change this resolution whenever you want.



The Streaming media and 4K playback input module supports two simultaneous channels playing media. The two channels can have different resolutions, and you can choose a custom value for channel one (slot *n* position 1). Channel two (slot *n* position 2) only supports 1920x1080p60.

Understanding the format of resolution

Resolution is shown in the form:

Width x Height (in pixels), p or i, Frame Rate (in Hz, or frames per second)

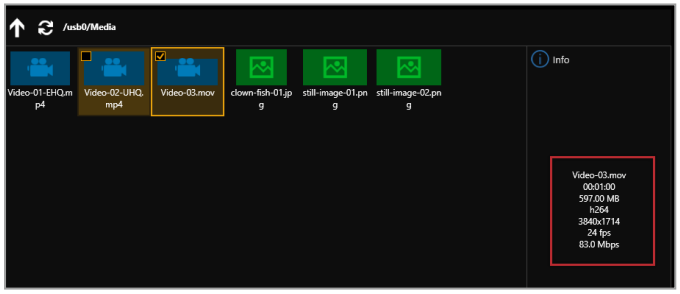
Where p means progressive scanning, and i means interlaced scanning.

For example, 1920x1080i60 is 1920 pixels wide, 1080 pixels high, interlaced, and has a frame rate of 60 Hz.

How do I know what resolution my media items are?

To find the resolution of a media stream, visit the source of the stream.

To find the resolution of a media item, select the item in the media browser. Information about that item is displayed on the right.



Frame rate

- For best results, add video clips and media streams with the same frame rate to a play queue. You can then choose a resolution with a frame rate that matches your media items.

	Video clip 1	Video clip 2	Video clip 3
✔	1920x1080p60	3840x2160p60	1600x1200p60

- If you have a mixture of frame rates, choose a resolution with a frame rate that is a factor of your frame rates. For example, you can add media items with frame rates of 30 Hz and 60 Hz, and then choose a resolution with a frame rate of 60 Hz. You can do this because you can divide 60 by 30.

  Note: don't round up frame rates. For example, don't treat 23.98 Hz as 24 Hz.

	Video clip 1	Video clip 2	Video clip 3	Best frame rate	Reason
✔	1920x1080p60	3840x2160p30	1600x1200p60	60	Both frame rates are a factor of 60. 60/60 = 1 60/30 = 2
✔	3840x2160p25	1920x1080p50	1280x720p50	50	Both frame rates are a factor of 50. 50/50 = 1 50/25 = 2
✖	1280x720p23.98	1280x720p24	1920x1080p60	-	This play queue doesn't work because 24 is not a factor of 60, and you can't round 23.98 up to 24.

Resolution

- Choose a resolution no larger than your largest media item. Upscaling at this stage takes up unnecessary bandwidth.
- Don't choose a resolution that is much smaller than your media items. Downscaling at this stage can cause your media to appear blocky and low in quality when it is upscaled later in the process.
- If you have a play queue with a wide range of resolutions, you could choose a resolution in the middle of the range. This means that your largest items are downscaled.
- Consider the types of media you want to play. If you have, for example, two large 4K video clips and two smaller still images, you might prefer to put up with poorer quality still images in return for best quality video. In this case, choose your resolution based on the size of the video clips.

Scanning

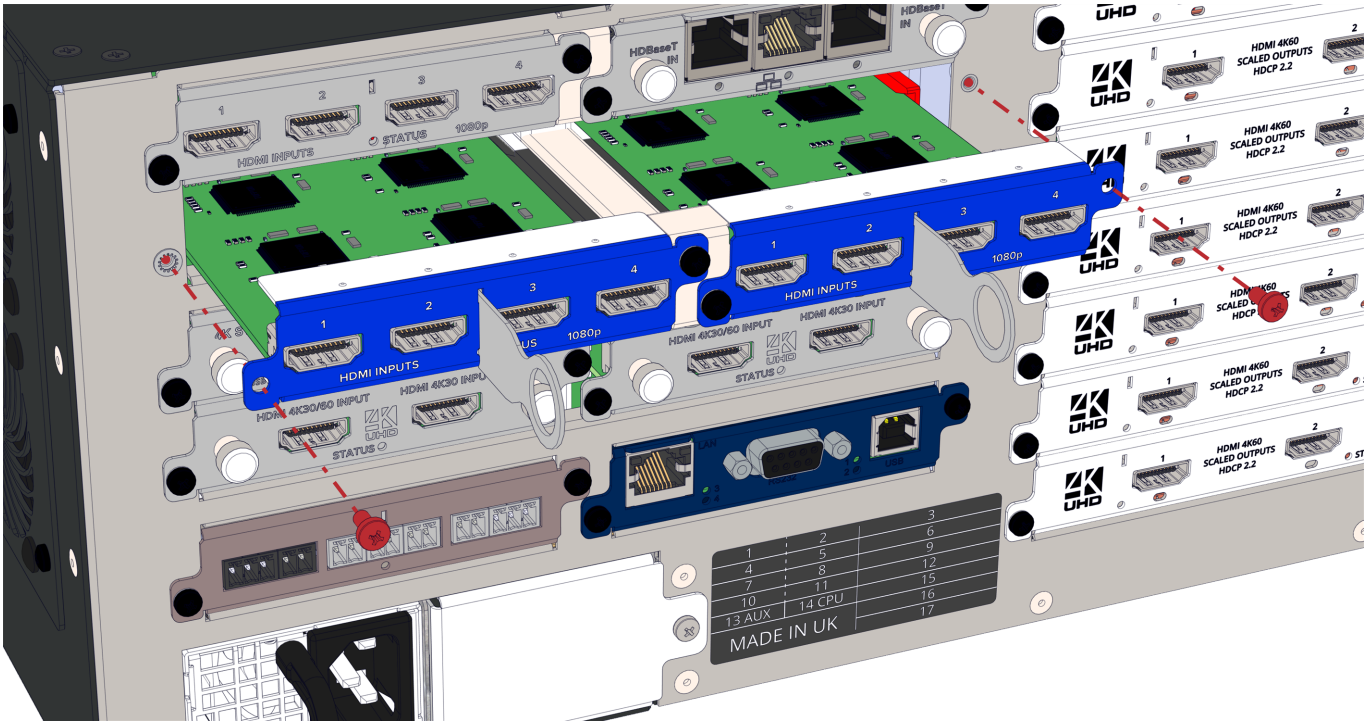
- Avoid mixing media items with progressive scanning and media items with interlaced scanning in the same play queue.

Replacing a module

Risk of damaging modules

Take care when you replace modules. If the components of modules touch other modules, or the metal chassis, they can be damaged. If you don't have experience, ask a qualified technician for help.

Removing an input module from your CORIOmaster2™

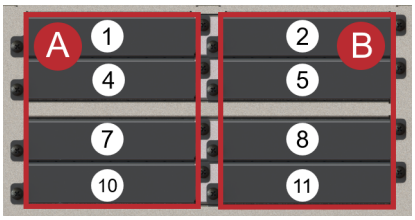


Input modules fit in pairs, joined with a bridge rail. For each pair, the outside screws hold the module in place in your CORIOmaster2, and the inner screws attach to the bridge rail.

1. Unscrew the outside screws of the pair that you want to change.
2. Use the silver handles or module extraction tools to pull the pair of modules forward, out of your CORIOmaster2.
3. Unscrew the inner screw of the module you want to remove, and slide the module forward out of the bridge rail.

Inserting an input module into your CORIOmaster2

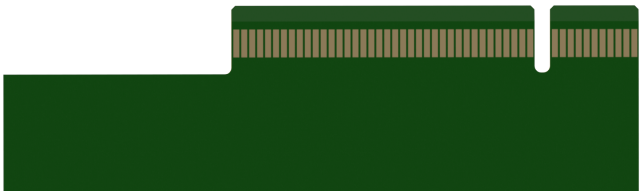
Rules for placing input modules



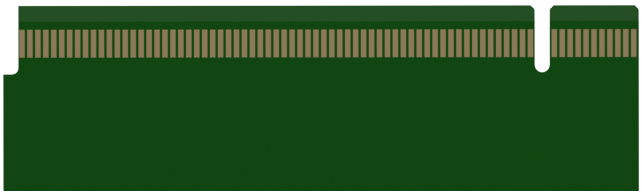
Standard bandwidth input modules can go in any position in column A and B, slots 1, 2, 4, 5, 7, 8, 10, and 11.

High bandwidth input modules can only go in column B, slots 2, 5, 8, and 11.

> **Risk of damage**
> Do not insert high bandwidth input modules in column A. The device and module can be damaged. If you are unsure contact your distributor.

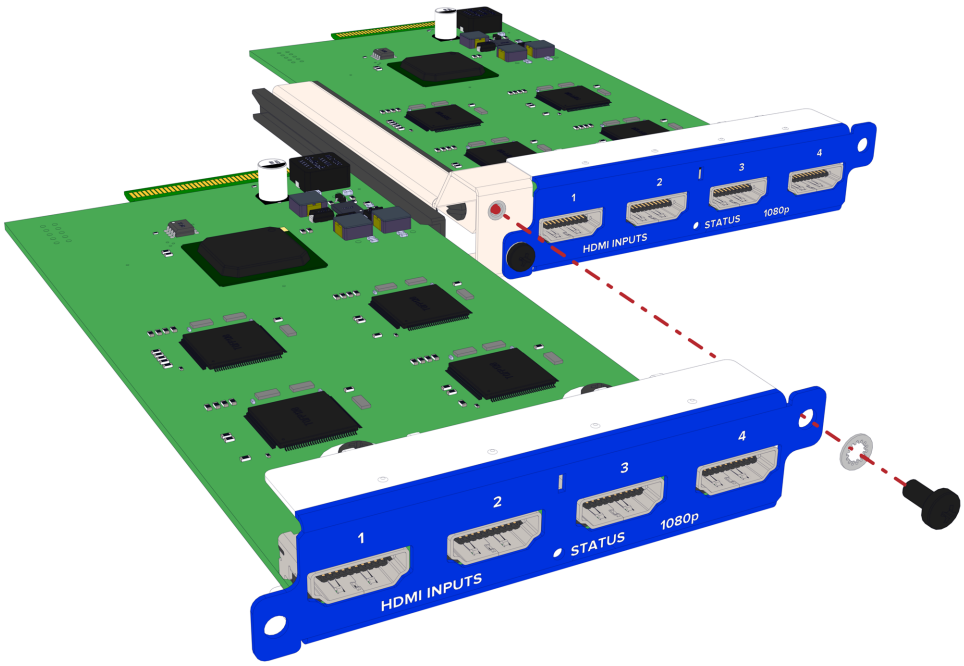


Standard bandwidth module connector



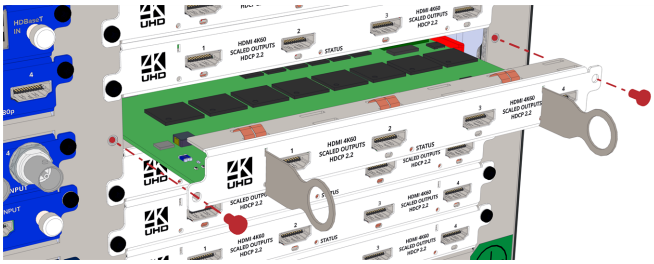
High bandwidth module connector

1. Slide the module into the bridge rail and screw it in place.



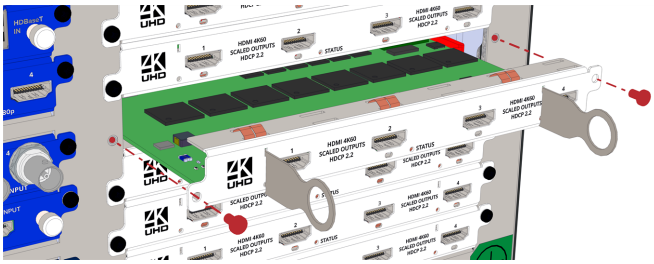
2. Insert the pair of modules into the guide rails of your CORIOmaster2 and push the modules firmly into the dock at the rear.
3. Screw the modules in place.

Removing an output module from your CORIOmaster2™



1. Unscrew the module that you want to replace.
2. Use the module extraction tools to pull the module forward, out of your CORIOmaster2.

Inserting an output module into your CORIOmaster2



1. Insert the module into the guide rails of your CORIOmaster2.
2. Push the module firmly into the dock at the rear of your CORIOmaster2.
3. Screw the module in place.

Adding and managing custom EDID files

You can upload an EDID file saved to your PC to your CORIOmaster2™. You can manage the EDID files saved to your CORIOmaster2 in CORIOgrapher™.

> Your uploaded EDID files can only be used with sources.

You might want to upload a saved EDID file if a source, for example, a PC, is using the preferred resolution from your CORIOmaster2 rather than the resolution you wanted for the source device. This can cause unexpected effects. You can create an EDID file for the resolution you selected for the source device, and upload it to your CORIOmaster2.

EDID files must:

- Be a binary EDID file
- Have a filename in 8.3 format
- Have a .edd extension
- Have a filename no longer than 8 ASCII characters

> Risk of unexpected results
> CORIOgrapher does not check that a custom EDID file is valid or supported. Uploading an invalid or unsupported EDID file can cause source loss and unexpected results. Creating custom EDID files is an advanced task. If in doubt, contact a qualified AV professional.

Before you start

Before you add custom EDID files or remove saved EDID files, we recommend that you make a backup copy of your configuration.

Read more about backing up and restoring on page 50.

Adding a saved EDID file

1. In CORIOgrapher, select ⚙ Settings > EDID Manager.
2. Select Install new EDID.
3. Select Select EDID file and browse to an EDID file on your PC.
4. Select Start install.

Removing EDID files

> **Risk of unexpected effects**
> If you delete an EDID file that is in use and then reboot your CORIOmaster2, your CORIOmaster2 says it is using the deleted EDID file but is actually using the default EDID file.
> Take care to not delete EDID files that are in use.

1. In CORIOgrapher, select ⚙ Settings > EDID Manager.
2. Find the EDID file you want to delete.
3. Select Remove.

Troubleshoot it

This section contains frequently asked questions and advice on troubleshooting problems with your CORIOmaster2™. If you can't find the help you need, contact your distributor, and if they can't help, contact tvONE™ support. Contact details are at the back of this guide.

In this section

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Checking and updating the firmware of your CORIO device

You must be connected to your CORIOmaster2™ to check and update firmware.

Find your firmware version from CORIOgrapher™ > Home. Update your firmware from CORIOdiscover > Update Device.

> When you update the firmware, any unsaved configuration in CORIOgrapher is deleted. Make sure you save any configurations that you want to keep before you start the updating process. You can also save a backup file on your PC.
> Read about saving a backup file on page 50.

Before you start

To install the latest firmware for your device, you need CORIOdiscover V1.8 or above. CORIOdiscover software is available from help.tvone.com/r/docs/g/software.

Checking your firmware version and downloading new firmware

CORIOdiscover warns you if you try to install firmware that is older or the same as your existing firmware. If you don't want to check your existing firmware version, skip to step 2.

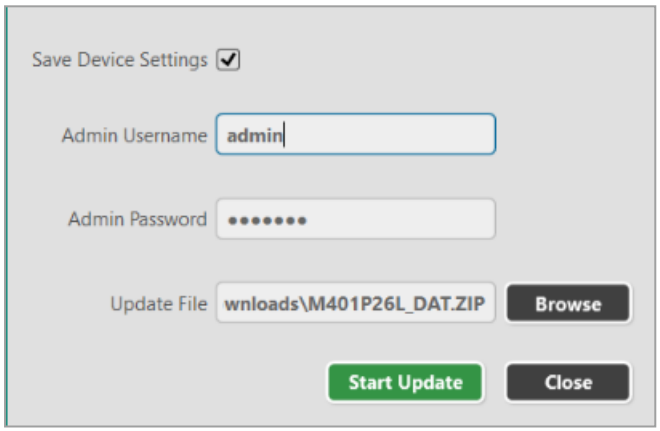
1. In CORIOgrapher > Home, find your current firmware version next to the name of your device.

2. Check for newer firmware at help.tvone.com/r/docs/g/firmware.
   Select your device from the list and compare the firmware version to your own.
3. If your firmware is out of date, download the zipped DAT file.
   You don't need to extract the DAT file.

Updating the firmware

1. In CORIOdiscover, select .

2. Select your device from the list and select Update.
3. To save your device settings, select Save Device Settings.
   When you save your settings, your device keeps all your saved configurations and canvases.
4. Enter your administrator login details.



5. Browse to the zipped DAT file that you downloaded.
6. Select Start Update.
   When the update is finished, you can log in to your device again.

I can't see my CORIOmaster2™ in the Discovered Devices list

What's the problem?

When I tried to find my CORIOmaster2 in the Discovered Devices list on the Home window of CORIOgrapher™, I couldn't see it. I tried refreshing the list and it still wasn't there.

Why does this happen?

There might be a lot of devices on your network and you're having trouble identifying yours.

Your device might be on a different network, there might be a problem with your network or firewall, or you might be in a high-security environment.

What to do

First try this

1. Look on the front panel display for your device's IP address.
   You can use this IP address to find your device.

Then try this

If you've got a long list of devices with similar names, try these steps to find out which one is yours.

1. Write down the list or take a screenshot, and then turn off your device.
   After a few seconds, your device should show as offline.
2. If nothing shows as offline, close and open CORIOgrapher.
3. Compare the list to your screenshot.
   If a device is missing, it is most likely your device.
4. Turn on your device, wait up to ten minutes, and see if that device appears again in the list.
   You can now select your device.

Then try this

If your device definitely isn't in the Discovered Devices list, first check your hardware.

If your device still isn't in the list, connect directly to your device with an RS-232 serial connection, find the IP address of your device, and use that IP address to log in.

> API commands are not case-sensitive.

To check your hardware and firmware

1. Check that your device is turned on and the LED on the front panel is green.
2. Turn your device off and on again.
3. When the LED on the front panel is green, on the Home window of CORIOgrapher, select Refresh.
4. Check the Ethernet or serial connectors that connect your device to your computer.
5. Check that you are using the latest firmware. You might need to update your firmware.
   Read about checking and updating your firmware on page 120.

To find out the IP address of your device

1. Connect the RS-232 port on your device to the RS-232 port on your computer with an RS-232 cable.
2. Open a suitable terminal application, such as puTTY or HyperTerminal.
3. Set your COM port settings to the following:

Speed (baud)	115200
Data bits	8
Stop bits	1
Parity	None
Flow control	None

4. To log in to your device as an administrator, enter `login(admin,adminpw)`.

   Admin and adminpw are the default administrator login details. If you've changed them, use your own login details.
5. To check that DHCP is enabled, enter `System.Comms.Ethernet.DHCP` and press Return.

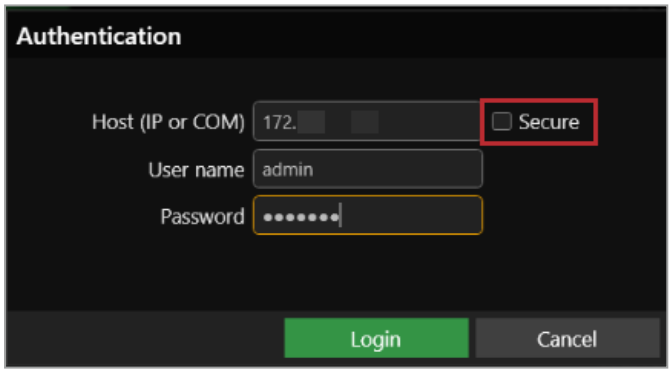
   If the Enabled property is set to Off, then go to step 6.

   If the Enabled property is set to On, then go to step 7.
6. Enter `System.Comms.Ethernet` and press Return.
7. Find the IP address of your device in the IP_Address property and make a note of it.
8. Enter `logout()` and press Return.

To log in to your device with an IP address

Log in to your device on the Home window of CORIOgrapher.

1. Select Connect to your device.
2. Enter the IP address that you got from the serial connection, and your administrator login details.



   The first time you log in, make sure Secure is clear.

If that doesn't work

There might be a problem with your network or firewall. Talk to your network administrator. You might need to give your device a specific IP address.

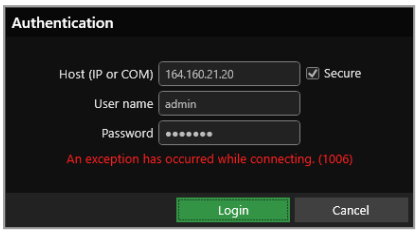
Read about changing the IP address of your device on page 55.

If the advice here doesn't work, first contact your distributor. If your distributor can't help, contact tvONE support at tech.usa@tvone.com , tech.europe@tvone.com or tech.asia@tvone.com.

I can't log in to CORIOgrapher™

What's the problem?

When I try to log in, I get an error message.



Why does this happen?

CORIOgrapher is unable to make a connection to your CORIOmaster2. There are multiple reasons why a connection can't be made.

What to do

First try this

If you are getting a 1002 error code, then there may have too many controllers communicating with your device, and the device has ran out of connection slots.

Check if you have multiple controllers that are using the REST API or Ethernet.

Disconnect the controllers , and reboot the device, then try to connect again.

Then try this

Check the rfc6455 specification website for help with WebSocket status codes.

https://datatracker.ietf.org/doc/html/rfc6455#section-7.4

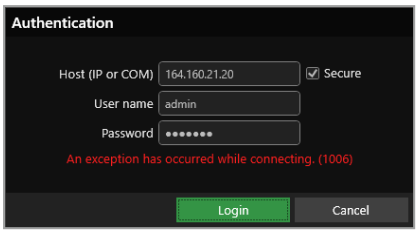
If that doesn't work

If the advice here doesn't work, first contact your distributor. If your distributor can't help, contact tvONE support at tech.usa@tvone.com , tech.europe@tvone.com or tech.asia@tvone.com.

I can't log in securely to CORIOgrapher™

What's the problem?

When I select Secure and try to log in, I get an error message.



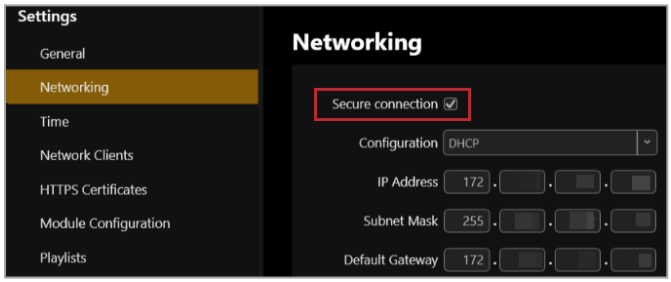
Why does this happen?

Your CPU module might not have generated a secure certificate.

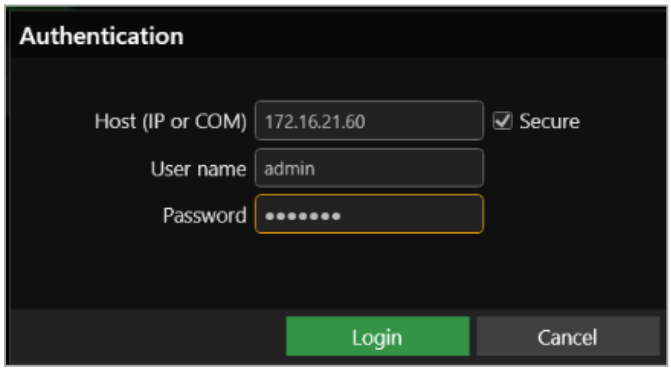
What to do

First try this

1. Clear the Secure option and log in to CORIOgrapher.
2. Select Settings > Networking.
1. From Networking, select Secure connection.



2. Select Save > Yes.
   Your device restarts.
3. Select Secure and log in.



If that doesn't work

If the advice here doesn't work, first contact your distributor. If your distributor can't help, contact tvONE support at tech.usa@tvone.com , tech.europe@tvone.com or tech.asia@tvone.com.

What do the error codes on the front panel mean?

Your CORIOmaster2™ has a front panel display that shows information including error codes to help you work out if something needs your attention, for example the device fans have failed.

You can get the errors reported from API events, and using the System.Alerts API command after logging in.

> Your device will only show the last messages.

> If you can't see the front panel display, check the System.Alerts API command for the error code.

Code	Description
Critical PF	Backplane power failure, and the device will boot with a minimal image configuration. Checked during boot up. There is no video output or front panel display.
Critical BF	Backplane chip failed to program, and the device will boot with a minimal image configuration. Checked during boot up. There is no video output or front panel display. Reasons: Unable to reset the EEPROM, corrupted blackplane file, memory test failed, or faulty backplane chip. > You can visually check the programming was successful by looking through the top fans next to the input modules for a green LED. > You will need the boot log using the serial connection to correctly diagnose this fault.
Error FF	One or two chassis inlet or exhaust fans have failed or are spinning too slow. Continuously monitored. Revolutions per minute (RPM) can be viewed using the System.Temperature_Control API. > Check fan power connectors.
Critical FF	Three or more chassis inlet or exhaust fans, or the backplane fan have failed or are spinning too slow, and the device will reboot with a minimal image configuration. Continuously monitored. Revolutions per minute (RPM) can be viewed using the System.Temperature_Control API > Check the fan power connectors.
Critical FSRead	File system failed to be read, and the device will boot with a minimal image configuration. There is no video output.
Critical DMA	Communication with a module failed, and the device will boot with a minimal image configuration. There is no video output.

> Help If any advice here doesn't work, first contact your distributor. If your distributor can't help, contact tvONE support at tech.usa@tvone.com , tech.europe@tvone.com or tech.asia@tvone.com.

Read about customizing the front panel on page 50.

Why is my window pixelated, or looks blurry when I select a window source?

You might be seeing a pixelated window because the required HDCP version of the input is not supported by the display the window is being shown on.

Read about HDCP on page 34.

My Streaming media and 4K playback input module keeps overheating

What's the problem?

I keep seeing an error message that tells me my Streaming media and 4K playback input module is too hot, or has overheated. The performance of the module is reduced. I've tried restarting my CORIOmaster2™.

Why does this happen?

If the environment around the Streaming media and 4K playback input module is too hot, the module runs above specification, or the fans can't do their job properly, the module can overheat. When the module becomes hot and there is a risk of overheating, the performance of the module is reduced to lower the amount of data processed.

What to do

First try this

1. Switch off your CORIOmaster2.
2. Allow your CORIOmaster2 to cool down for at least 20 minutes.
3. Restart your CORIOmaster2.

Then try this

1. Place your hand near each fan outlet in turn and check that air is flowing out of your CORIOmaster2.
2. Check the environment around your CORIOmaster2.
   - Is there anything covering the fan outlets?
   - Is the space large enough?
   - Is there enough ventilation or cooling? For best results, make sure the air around your CORIOmaster2 is a maximum of 20 °C.
   - Is there an air gap all around your CORIOmaster2?
3. If there are any issues with the environment around your CORIOmaster2, switch off your CORIOmaster2 and allow it to cool down while you fix the issues.

If that doesn't work

Is your Streaming media and 4K playback input module playing media items or streams that are very high resolution and/or high bitrate? Try reducing the resolution or bitrate as much as you can without losing too much quality.

If the advice here doesn't work, first contact your distributor. If your distributor can't help, contact tvONE support at tech.usa@tvone.com , tech.europe@tvone.com or tech.asia@tvone.com.

I can't hear any audio

What's the problem?

I am trying to play audio but I can't hear it, or the sound is poor.

Why does this happen?

General problems with audio:

- Audio is disabled for the input or output.
- The audio source is muted.
- The audio output is muted.
- The canvas or output is cut to black. Cut to black also mutes audio.
- The input audio level is turned down low, or the output volume is turned down low.
- The audio source was changed by a preset.
- The source device or output device might be muted.
- There might be a loose connection, mislabeled cables, or problem with your audio device.
- The audio source is not compatible with your CORIOmaster2.
  - Your CORIOmaster2 only plays embedded audio in uncompressed PCM format.
  - Your CORIOmaster2 only plays audio with a frequency of 48 kHz.

If you're trying to play audio with the S/PDIF and analog audio module:

- You might have your audio device connected to the wrong output.

  Each output is associated with a single canvas. Output 1 is associated with canvas 1, and so on.

  Read more about the S/PDIF and analog audio module on page 20.

If you're trying to play audio with the Streaming media and 4K playback input module:

- You might be trying to listen to a stream with low latency. CORIOmaster2 automatically mutes streams with low latency.
- The audio from a media item might not be compatible with your Streaming media and 4K playback input module.

What to do

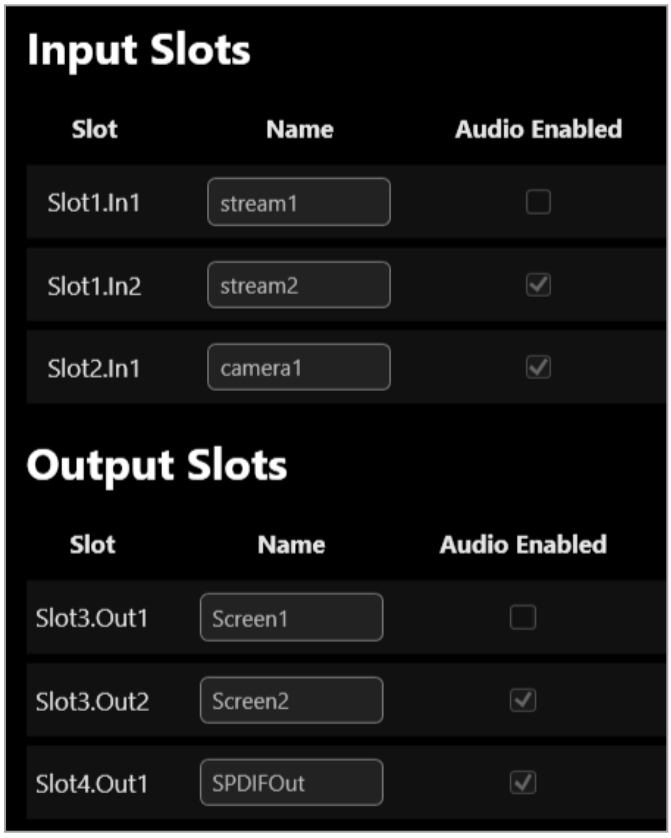
General problems with audio 129
Audio from the Streaming media and 4K playback input module 133
If that doesn't work 134

General problems with audio

- *Check if audio is disabled for sources or outputs, page 129*
- *Check if sources are muted, page 130*
- *Check if input audio level or volume are too low, page 130*
- *Check if canvases or displays are cut to black and muted, page 130*
- *Check if displays or windows are muted, page 131*
- *Check your presets, page 132*
- *Check the format of your media items, page 132*.

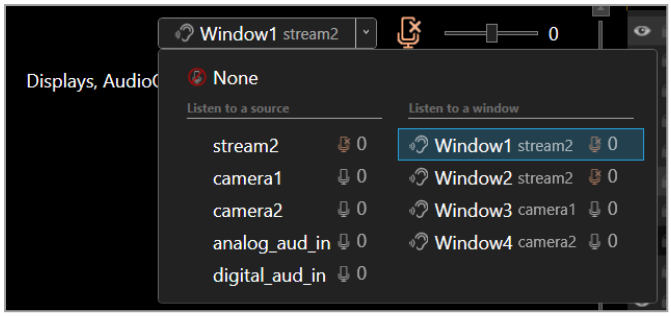
Check if audio is disabled for sources or outputs

1. Select ⚙ Settings > Slot Status.
2. Check that Audio Enabled is selected for each source and output that you want to use.

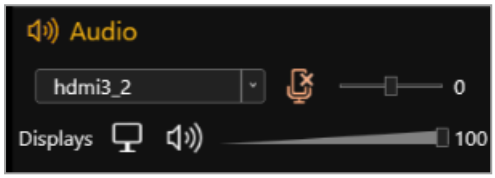


Check if sources are muted

1. From Editor, open the list of audio sources.

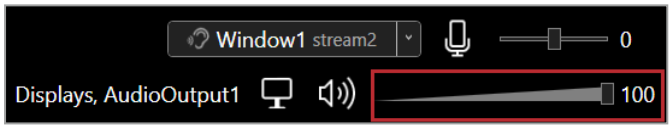


2. If the source you want to hear is muted, select the source and then select .

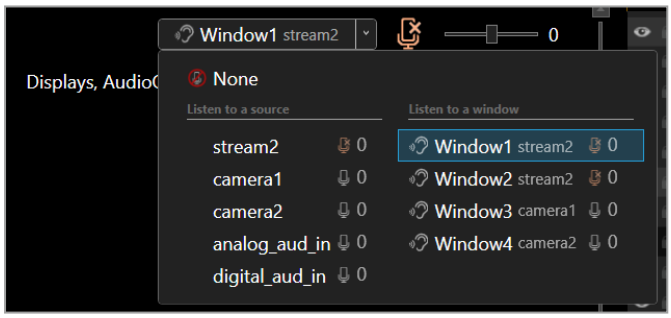


Check if input audio level or volume are too low

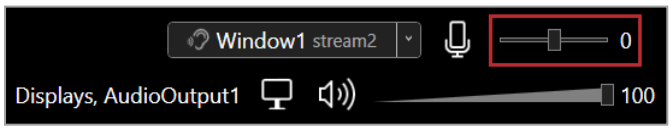
1. From Editor, check the output volume.



2. Open the list of audio sources.



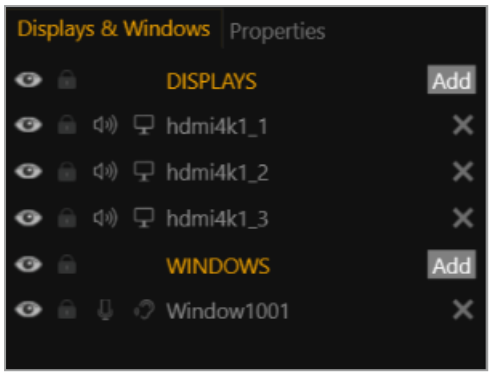
3. Select each source in turn and check the input audio level.



Check if canvases or displays are cut to black and muted

1. Select Dashboard.
2. If a canvas is cut to black and muted, restore it.
   - To cut a display to black and mute it, select
   - To restore a display, select
3. Select Editor > Displays & Windows.

4. If a display is cut to black and muted, restore it.

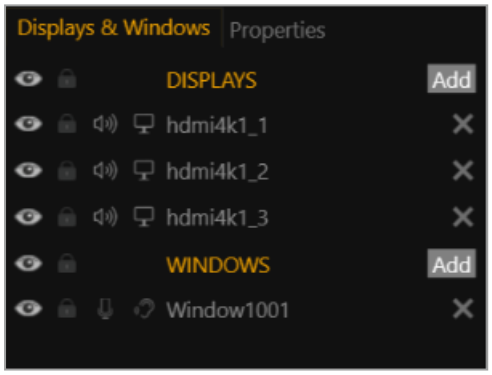


- To cut a display to black and mute it, select .
- To restore a display, select .

> Only administrators and power users can restore individual displays. If a display is black and you can't hear audio, ask an administrator to check if it is cut to black and muted.

Check if displays or windows are muted

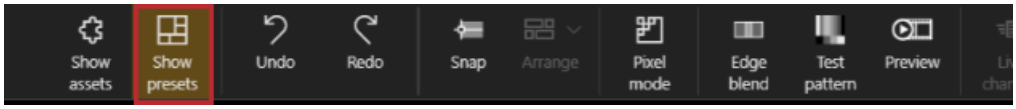
1. Select Editor > Displays & Windows.
2. If the display or window is muted, unmute it.



- To mute audio, select or .
- To unmute audio, select or .

Check your presets

1. Select Editor > Show presets.



2. From Presets, select a preset.

3. On the canvas, check which windows and sources appear in the preset.
4. Repeat for all presets.

Read more about best practice for using presets on page 67.

Check the format of your media items

- Your CORIOmaster2 only supports two-channel audio, in uncompressed PCM format, at 48 kHz.
- Your CORIOmaster2 does not support surround sound.
- The Streaming media and 4K playback input module only supports .mp3 and .aac formats.
- If you have a media player connected to your S/PDIF and analog audio module, check that it can provide audio in uncompressed PCM format.
- If your media items are not supported, consider converting them.

Then try this

1. Restart your CORIOmaster2.
2. Check all hardware connections.
3. Check that your audio device is working. Try plugging in another source.
4. Make sure you are running the latest firmware and software.

   Download the latest version of CORIOgrapher from help.tvone.com/r/docs/g/software.

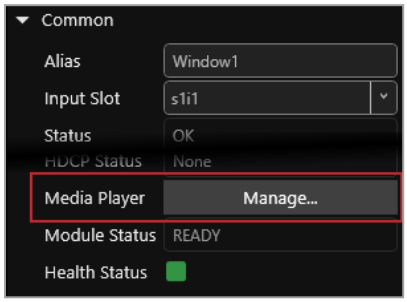
Read about updating your firmware on page 120.

Audio from the Streaming media and 4K playback input module

- *To access the media player, page 133*
- *Check the format of your media items, page 133*
- *Check if your stream is playing with low latency, page 133*

To access the media player

1. In Editor, double-click the window you wish to play streaming media, and select (Media Player) Manage.

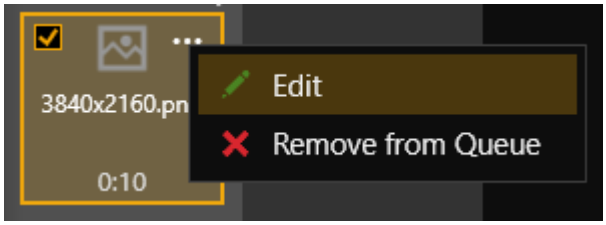


Check the format of your media items

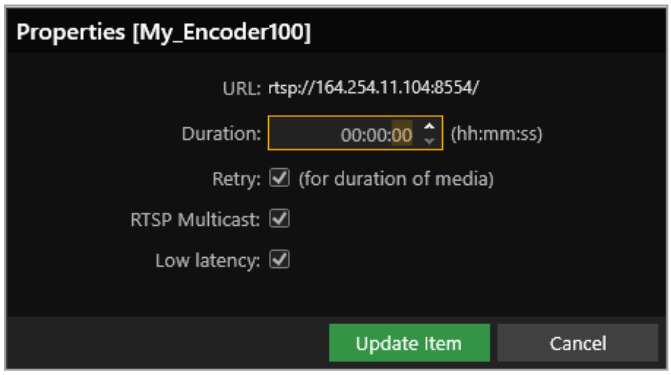
- The Streaming media and 4K playback input module only supports .mp3 and .aac formats, at 48 kHz.
- If your media items are not supported, consider converting them.

Check if your stream is playing with low latency

1. In the play queue, select the stream.
2. Select ••• > Edit.



3. Check if Low latency is selected.



If you want to listen to audio from your stream, clear Low latency.

Then try this

1. Restart your CORIOmaster2.
2. Check all hardware connections.
3. Check that your audio device is working. Try plugging in another source.
4. Make sure you are running the latest firmware and software.
   Download the latest version of CORIOgrapher from help.tvone.com/r/docs/g/software.
   Read about updating your firmware on page 120.

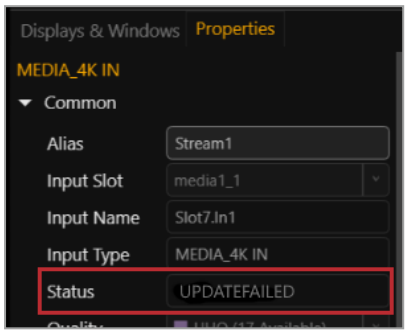
If that doesn't work

If the advice here doesn't work, first contact your distributor. If your distributor can't help, contact tvONE support at tech.usa@tvone.com , tech.europe@tvone.com or tech.asia@tvone.com.

I can't update the firmware of my Streaming media and 4K playback input module

What's the problem?

1. In CORIOdiscover, I have an error message that tells me one or more of my Streaming media and 4K playback input modules failed to update.
2. In CORIOgrapher™ I have an error message that tells me the firmware of my Streaming media and 4K playback input module failed to update. The module status is UPDATEFAILED.



Why does this happen?

- There was an error when you updated the firmware of your CORIOmaster2™.
- The firmware download might be corrupted.
- There is a problem with a module.

What to do

First try this

1. Restart your CORIOmaster2.
2. In CORIOgrapher, select ⚙ Settings > Module Configuration.
3. For each Streaming media and 4K playback input module, select ••• > Configure and check the status.

Then try this

1. Download the firmware update again.
   Make sure you download the correct version.
2. Repeat the firmware update.

Read more about updating your firmware on page 120.

If that doesn't work

If the advice here doesn't work, first contact your distributor. If your distributor can't help, contact tvONE support at tech.usa@tvone.com , tech.europe@tvone.com or tech.asia@tvone.com.

General troubleshooting checklist

If specific troubleshooting advice isn't helping, or your product has stopped working, go through the points below. If your product still doesn't work, you might need to return it for repair.

Read about returning your product on page 136.

1. Make sure your product is set up correctly, as shown in this guide.
2. Check that your cables and equipment are all connected firmly.
3. Check that your product is connected to an electrical outlet that is switched on.
   Can you see LED lights on the front of your product?
4. Test your sources by connecting them directly to a display.
5. Test your display by connecting it directly to a source.
6. Test each cable.
7. Try restoring your product to factory default settings.
   Note: during factory reset your custom settings are deleted.
8. Try updating your firmware.
   Note: during a firmware update your custom settings are deleted.

Returning a product for repair

You can request to return your product to tvONE™ for repair. When you contact tvONE support, have the following information ready.

- Product type
- Serial number of the faulty unit (this is on the underside of the unit)
- Full details of the issue
- Invoice number (if available)

Contact tvONE support for your area.

- Customers in North, Central, and South America (NCSA), email tech.usa@tvone.com.
- Customers in Europe, the Middle East, and Africa (EMEA), email tech.europe@tvone.com.
- Customers in Asia, email tech.asia@tvone.com.

EMEA and Asia

Customers in EMEA and Asia receive an RMA Request form from tvONE support. Complete the form and return it to tvONE support for your area.

All customers

tvONE support decides if your product needs to return for repair, and, if needed, provide a return authorization number.

Send your product to tvONE by insured carrier or registered mail. Write your return authorization number on the outside of the packaging, and on any documents you send with your product.

You must arrange and pay for shipping and insurance. Products in transit are your responsibility. tvONE does not accept responsibility for products lost in transit.

> Do not return a product for warranty repair without a return authorization number. tvONE will not repair your product.

What are the minimum requirements for running CORIOgrapher?

The minimum requirements for running CORIOgrapher are:

- Works with PCs running Windows® 10 and 11
- Does not work with touch-screen-only devices, including tablets or phones

- Works with Microsoft Surface Pros and similar touch screen devices

  Full support for touch screen devices is under development
- Installs Windows .NET 4.8, if you don't have it
- Needs 600 MB of disk space during installation
- Is approximately 60 MB in size once installed

To use the preview feature, your PC must have Windows Media Player installed, and it must have been launched at least once. Preview performance depends on the specifications of your PC and number of windows in your installation.

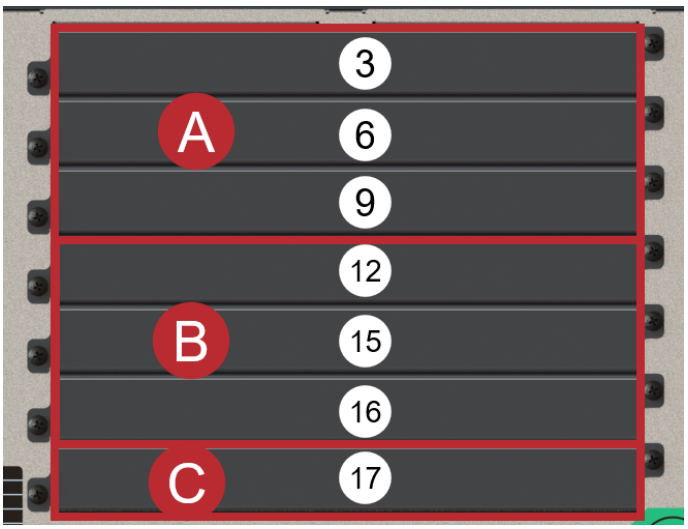
What's the password for my CORIOmaster2™?

The default administrator username and password for CORIOgrapher™ are `admin` and `adminpw`.

Do I need output bonding modules?

For CM2-547 only.

There are three groups of slots for output modules:

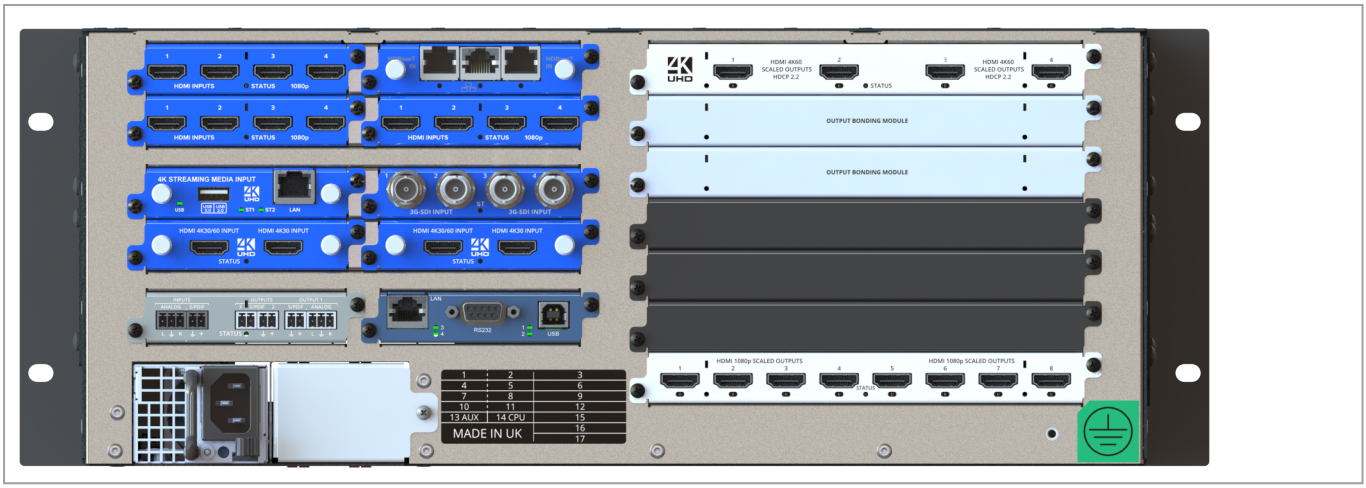


Use output bonding modules to fill empty output slots in a group. You don't need to use output bonding modules in groups that contain no output modules.

Place output modules in the first slot of each group first, starting with group C, slot 17. Fill empty slots with output bonding modules.

Show me an example

A CORIOmaster2 has two output modules. The first output module goes into group C, slot 17. The second goes into group A, slot 3. Bonding modules go into group A, slots 6 and 9. Group B contains no output modules, so it doesn't need any bonding modules.



Can I use HDMI extenders with CORIOmaster2™ output modules?

Yes. You can use HDMI extenders that draw up to 500 mA directly with HDMI output modules. If you want to use an HDMI extender that draws more than 500 mA, use an external power supply.

See our range of HDMI extenders at help.tvone.com/r/docs/g/signal-extension.

How large is the internal storage on a Streaming media and 4K playback input module?

128 GB.

How do I find the MAC address of my Streaming media and 4K playback input module?

You can find the MAC address in Networking. Select Settings > Module Configuration, find the module, and select ••• > Configure.

How fast is my connection to the Streaming media and 4K playback input module?

You can find the connection speed in Networking. Select Settings > Module Configuration, find the module, and select ••• > Configure.

Which media formats can I add to a play queue?

You can add media streams, video clips, and still images to a play queue. For the full list of supported formats, see the specification sheet.

Specification sheets can be found on our website tvone.com.

Can I save my play queue?

If you add media items or streams to a play queue and select Editor > Set device startup, when you restart your CORIOmaster2™, the media items and streams remain in the play queue.

You can save your play queue as a playlist.

Read more about playlists on page 104.

You can save all your settings, including your play queue, to a backup file on your CORIOmaster2. If you want to load the same play queue at a later date, you can restore your settings from the backup file. Note: you will lose any work that you have done since creating the backup file.

How do I mute audio?

If it's an emergency, the fastest way to mute everything is to use the emergency button for mute and cut to black.

In CORIOgrapher, select Dashboard.

- To cut to black and mute all displays and outputs, select .
- To restore all displays and outputs, select .

If it's not an emergency, there are several other ways to mute audio. You can:

- Mute a source.
  Read more on page 87.
- Mute a display.
- Read more on page 89.
- Disable a source or display.
  Read more on page 82.
- Cut a display to black, which also mutes the audio.
  Read more on page 89.

More

In this section

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Regulatory compliance for CORIOmaster2™ and all modules 141
Contact us 142

What's new in CORIOgrapher™ V3.6 for CORIOmaster2™

CORIOgrapher V3.6

- Support for CORIOmaster2™
- New look interface with dedicated panels for presets and assets
- New system and canvas level settings
- New preset editor, so you can select which windows are included in the preset.

For the full list of new features and things we've fixed, see the release notes.

Release notes are available at help.tvone.com/r/docs/g/software.

Regulatory compliance for CORIOmaster2™ and all modules

This product has been tested for compliance with appropriate FCC and CE rules and regulations. The power adapter or supply has been tested for compliance with appropriate UL, CUL, CE, PSE, GS, rules, regulations and/or guidelines. This product and its power adapter or supply is RoHS compliant.

WEEE directive

The wheelie bin symbol on this product or its packaging indicates that this product shall not be treated as household waste. In line with EU Directive 2012/19/EU for waste electrical and electronic equipment (WEEE), this electrical product must not be disposed of as unsorted municipal waste. Dispose of this product by returning it to the point of sale, or to your local municipal collection point for recycling. Doing this helps conserve our environment.

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