CDA Colour Correction Suite Using Adobe Premiere

CDA AV suite zero EV 5.810

2026

Contents

Page 3: *Monitor Calibration*

Page 5: *What's in the suite?*

Page 12: *Sending an Adobe Premiere Sequence to the FSI monitor*

Page 23: *Blackmagic Video Card Settings for a Premiere Sequence*

Page 30: *Tangent Wave control surface settings*

Page 35: *FSI DM240 Monitor Settings*

Page 41: *FSI DM240 Making Gamma Adjustments*

Page 45: *FSI DM240 About Gamut*

Monitor Calibration

The FSI and BENQ monitors are calibrated.

Do not manually adjust any of the brightness, contrast or chroma controls on either of these monitors.

Only make changes using the preset Gamut and Gamma settings.

If you feel that the calibration is incorrect, please contact Philip Hawes at philip.hawes@concordia.ca

About the terminology in this guide

This guide uses terminology specific to colour correction, colour theory and video encoding.

For clarification on these terms, look at the CDA Video Colour Correction Moodle workshop, the CDA Video Compression Moodle workshop. These workshops are available to any Concordia Fine Arts student. If you are not already enrolled in these workshops, please email Phil Hawes: philip.hawes@concordia.ca

Also look at the **Adobe Premiere online guide** in the section called **Color Management**. This is available on the Adobe site.

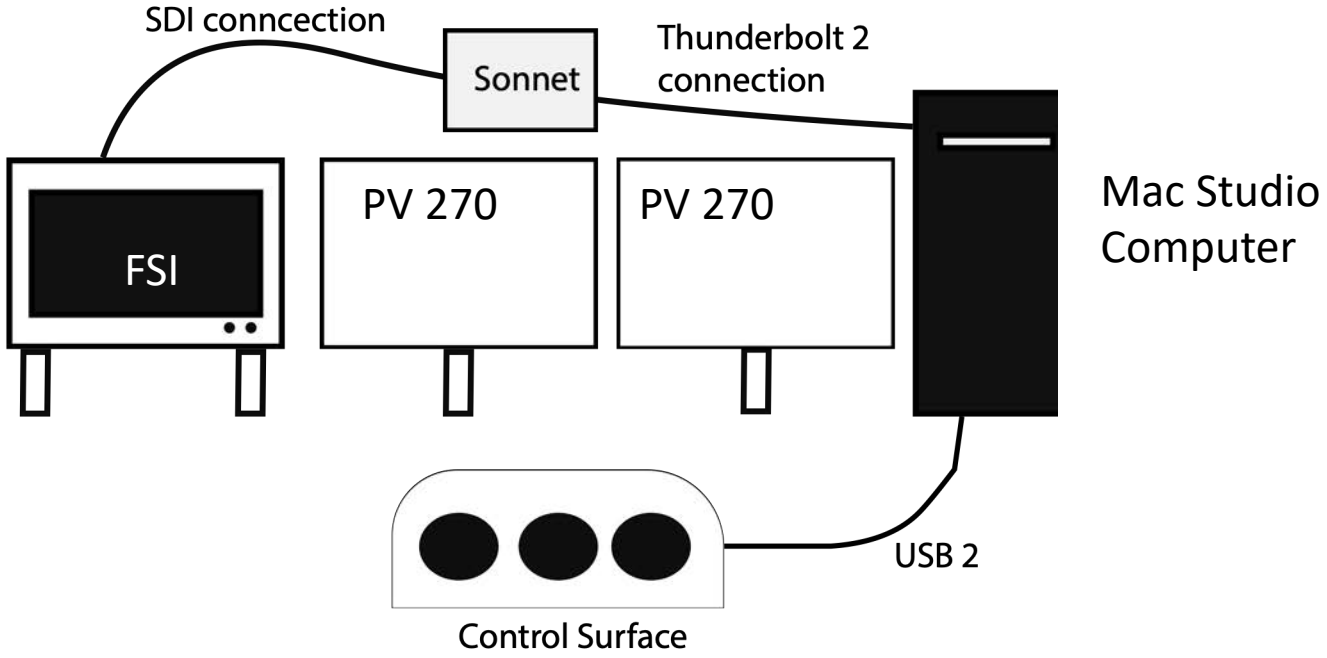
What’s in the suite?

CDA AV suite zero EV 5.810

2026

Equipment in CDA AV Suite Zero

The Flanders Scientific (FSI) DM240 monitor is the primary colour correction screen. It gets a video signal from the computer via a Blackmagic 4K Express video card. Use the FSI monitor to colour correct for broadcast and cinema standards or simply to see a more detailed image.
The BenQ PV 270 computer monitors are colour calibrated for Adobe RGB and are a good reference for colour correction for the web.
The Tangent WAVE control surface is connected via USB.
You can work from your USB C external drives or directly from the FAMC (Fine Arts Media Cluster).



About the FAMC

All the CDA AV suites (except for VS02) have 10 Gbit connections to the Fine Arts Media Cluster (FAMC), a fast media SAN for editing video. You can work directly with video media from this server in the CDA and FAR suites. The FAMC is a perfect solution if you have a shared video project. You can request individual or group media space in the FAMC here:

https://www.concordia.ca/cunews/finearts/digital-arts/networking-connecting/famc/request-space-on-the-famc.html?c=/finearts/cda/support/articles

FSI DM240 Colour Correction Monitor



The FSI DM240 is a 24” 2K (1920 x 1200) wide gamut LED colour correction monitor.

It can be used for broadcast video, digital cinema, or web video.

It has a 1500:1 contrast ratio (a typical high end computer display has a 1000:1 ratio). So, you will see more contrast variation in the shadow area of an image.

The SDI input accepts a 10 or 12 bit 4:2:2 or 4:4:4 1080p or 2K video signal.

FSI DM240 Colour Correction Monitor

The DM240 can display the full range of the Rec.709 (HD video) gamut and almost all the DCI P3 (digital cinema) gamut. **You should use it as a Rec.709 monitor when working with Premiere.**

It has adjustable gamma and gamut settings, built-in video scopes and other measurement tools.

The DM240 is calibrated so do not adjust any of the brightness, contrast, or color settings manually. Simply switch between preset gamma and gamut settings.

The colour correction rooms on EV10 (FAR) also use the FSI DM240.

BenQ PV 270 Monitors



These are high-end computer monitors. Like the FSI DM240 monitor, they can display all the Rec.709 colour gamut, almost all (96 %) the DCI P3 color gamut and 99 % of the Adobe RGB gamut.

They have a 1000:1 contrast ratio.

These monitors are set to a gamma of 2.2 and Adobe RGB color space. This is a standard for computer screens but you may change the gamma and gamut settings in the menu system if you wish (see page 20). Please change the settings back to 2.2 and Adobe RGB when you are finished.

These monitors are calibrated so do not adjust any of the brightness, contrast, or color settings manually. Simply switch between presets.

Tangent Wave control surface



The Tangent Wave control surface works well with some panels in the Lumetri Colour Effect in Premiere.

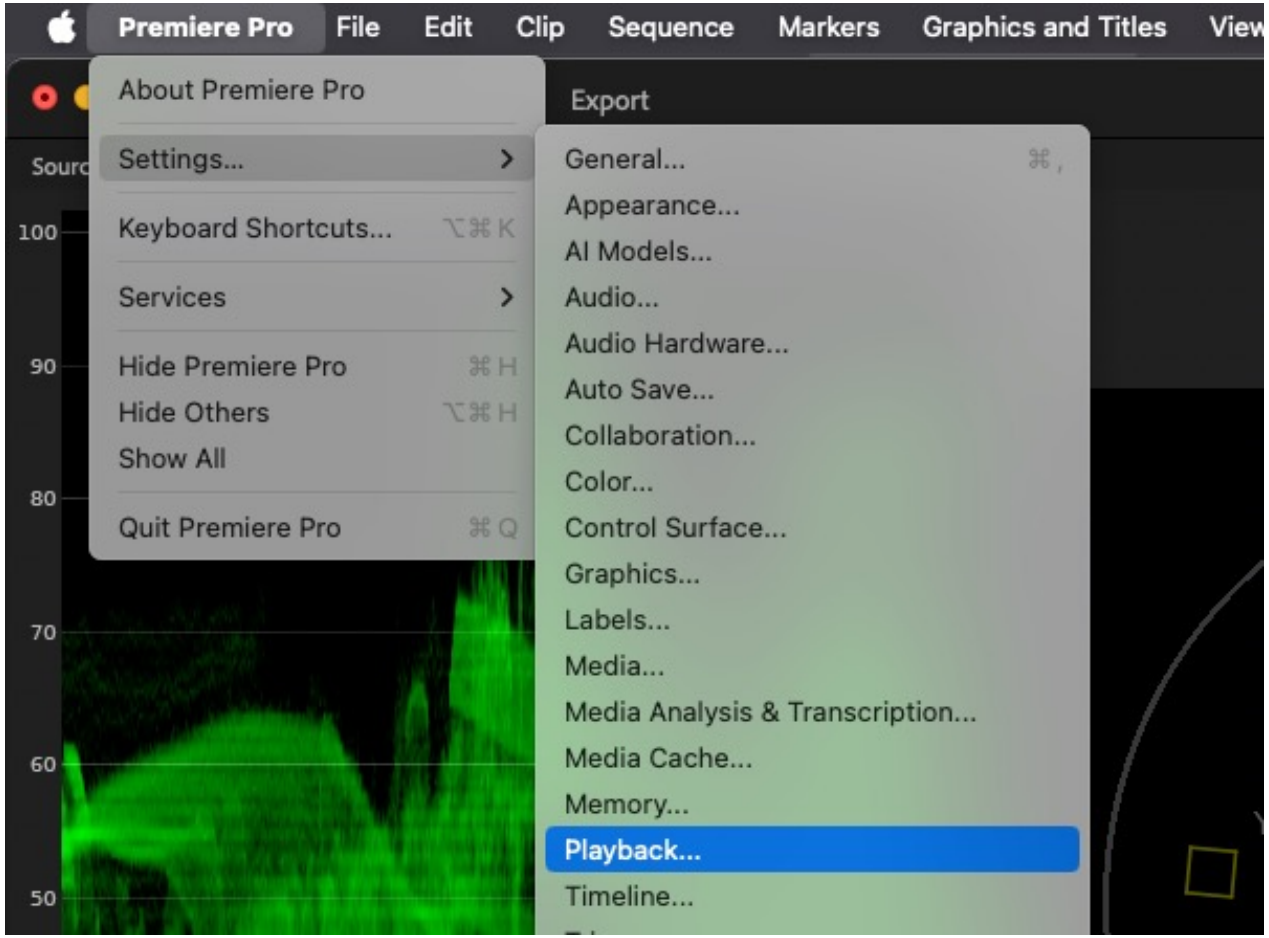
Follow the instructions in this guide for initializing it in Premiere.

Sending an Adobe Premiere Sequence to the FSI monitor

CDA AV suite zero EV 5.810

2026

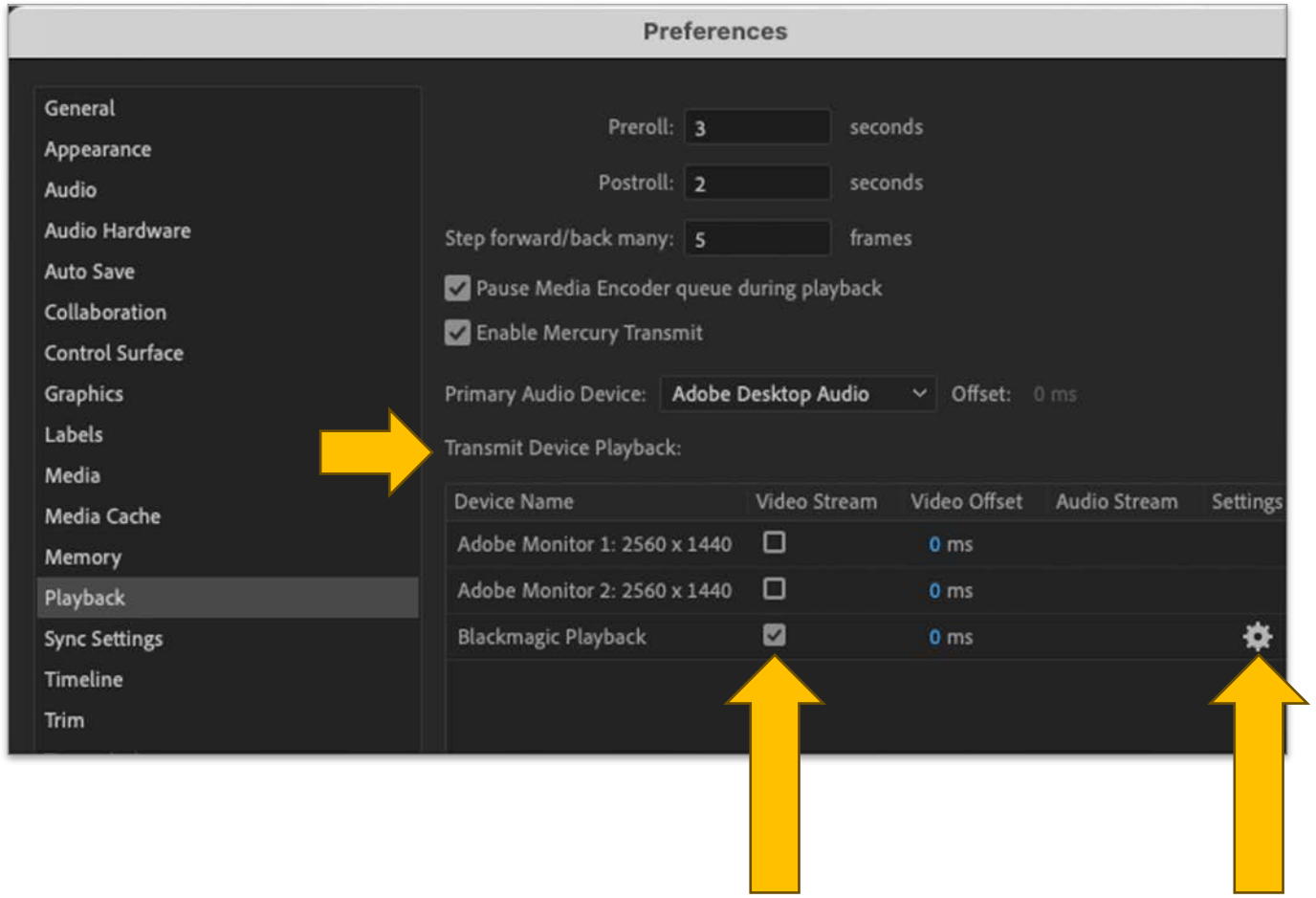
Premiere Pro/ Settings/ Playback



Go to:

Premiere Pro/Settings/Playback

Playback Settings



checkmark

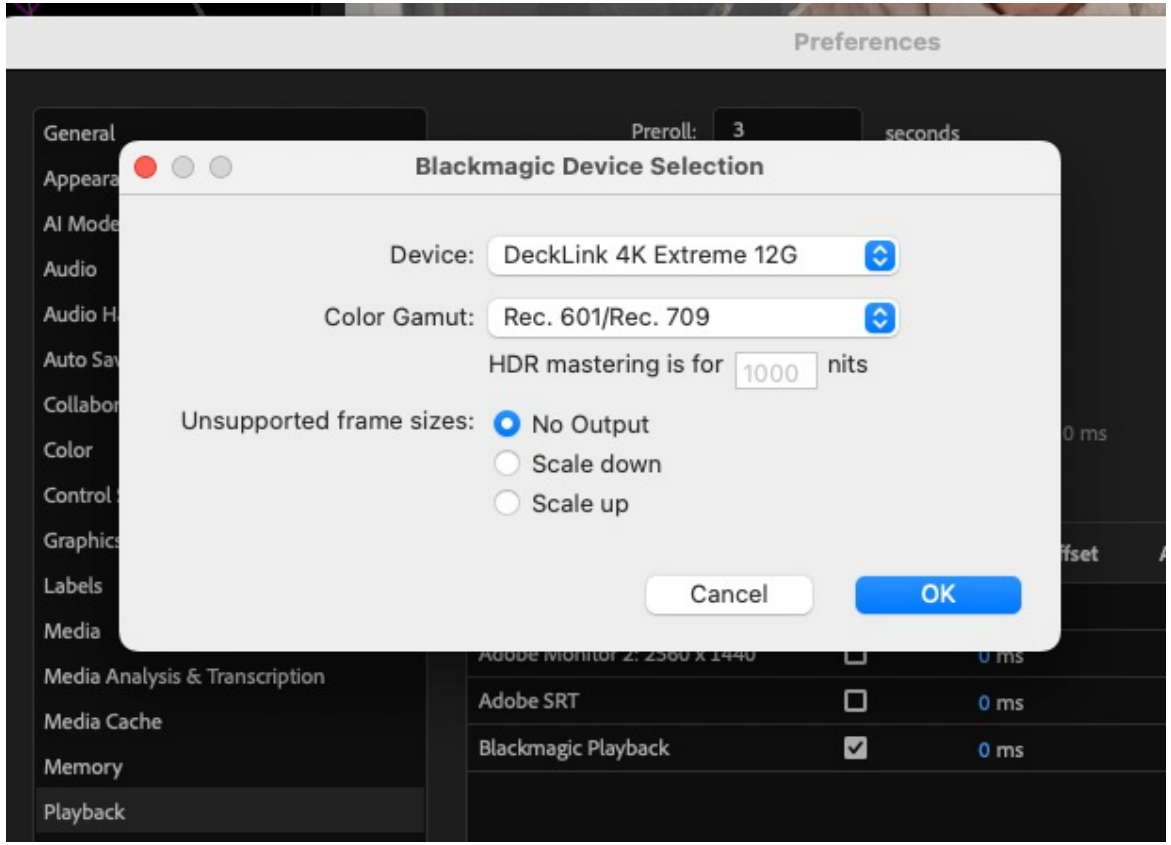
Settings wheel

In Primary Audio Device choose "**Adobe Desktop Audio**".

To get a signal from Premiere to the FSI monitor, you must use the Blackmagic video card.

In **Transmit Device Playback** choose "**Blackmagic Playback**" and then select the "**Settings**" wheel. See the next page.

Playback Device Settings

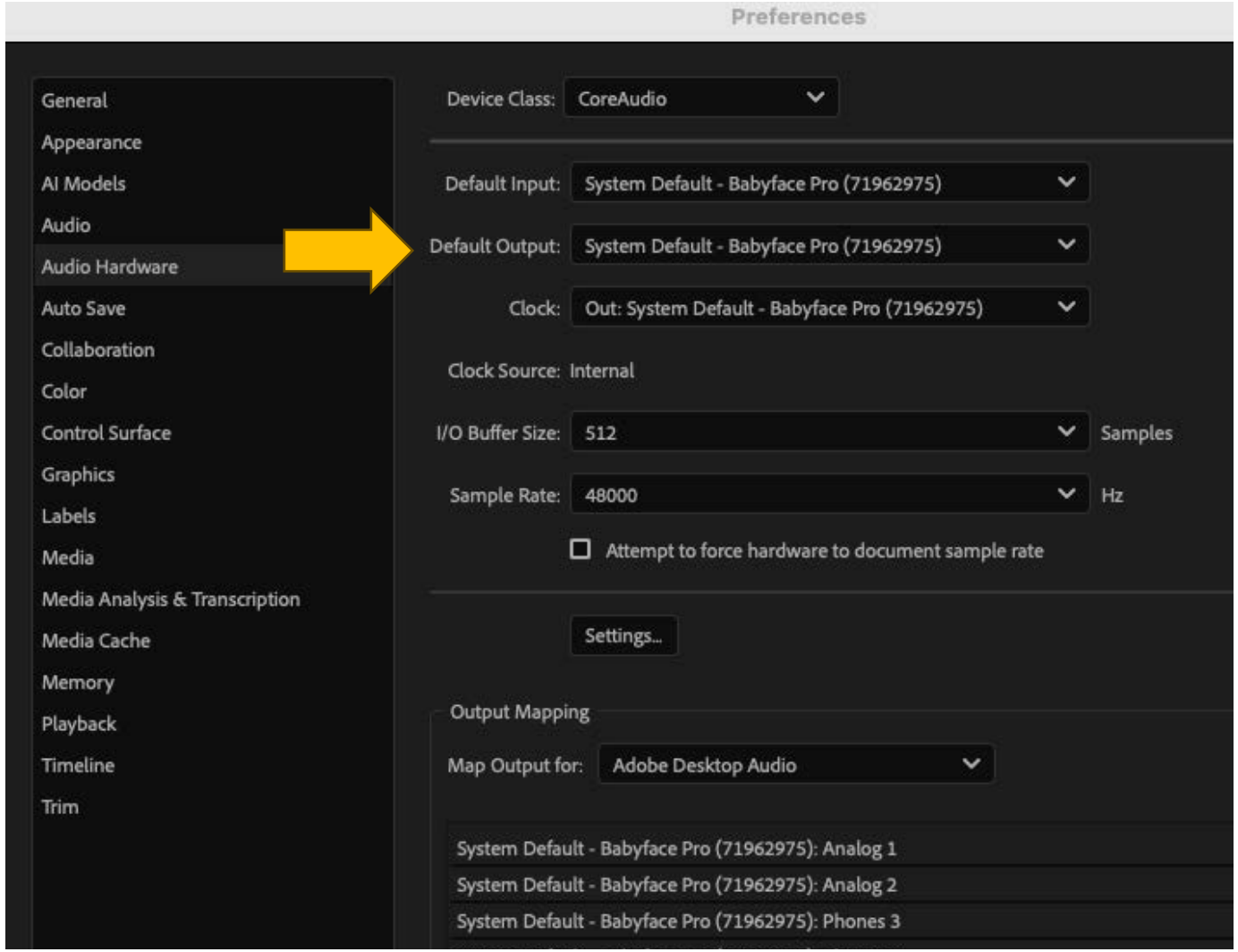


Under Settings, the Device should appear as the "**DeckLink 4K Extreme 12G".**

The **Color Gamut** should be **Rec.601/Rec.709**.
HDR workflows are not covered in this guide because the FSI monitor is not an HDR monitor. HDR **does not** refer to working with Log or RAW images.

If you have a sequence that is below 1080p size but not a standard NTSC or PAL video size, then you may choose a selection in "Unsupported frame sizes".

Premiere Pro/ Settings/ Audio Hardware



This is the setup to get audio to the speakers. Go to **Preferences/ Audio Hardware**.

Set the Default Output to the **Babyface Pro**. That is the name of the audio interface. This setting will ensure that audio is sent to the speakers via the Babyface audio interface and will not go to the FSI monitor.

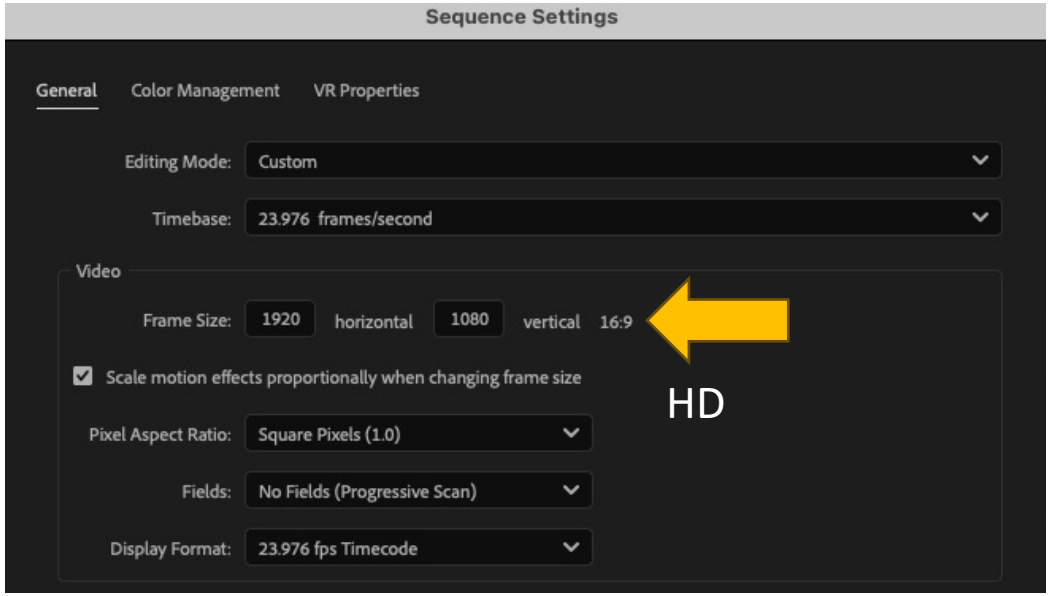
The audio will be slightly **out of sync** with the image on the FSI monitor but in sync with the image on the computer monitors.

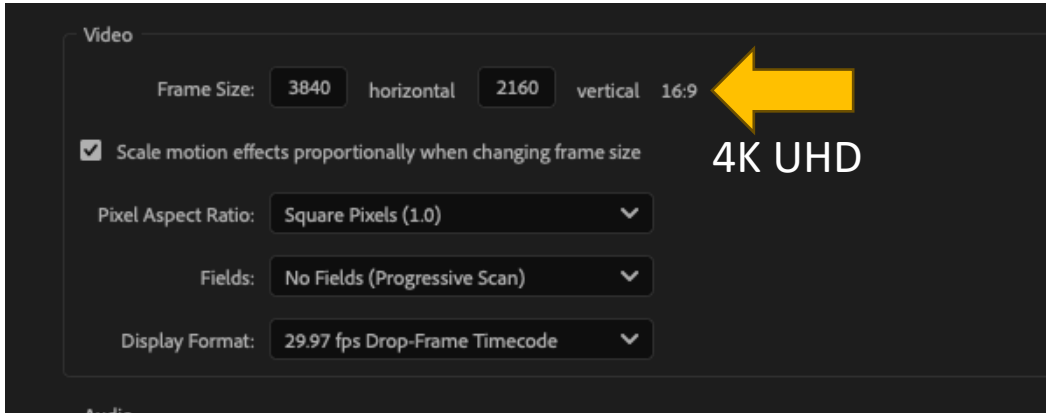
Premiere Sequence Settings

The Blackmagic 4K Extreme card can directly output HD (1920 x 1080) and down convert 4K UHD (3840 x 2160) Premiere sequences to the FSI monitor.

If you are unsure of the resolution of your sequence: put your cursor on the sequence, then select “**Sequence**” from the Premiere top menu and “**Sequence Settings**”.

To the right are details of an HD 1080p and a 4K UHD Premiere sequence.

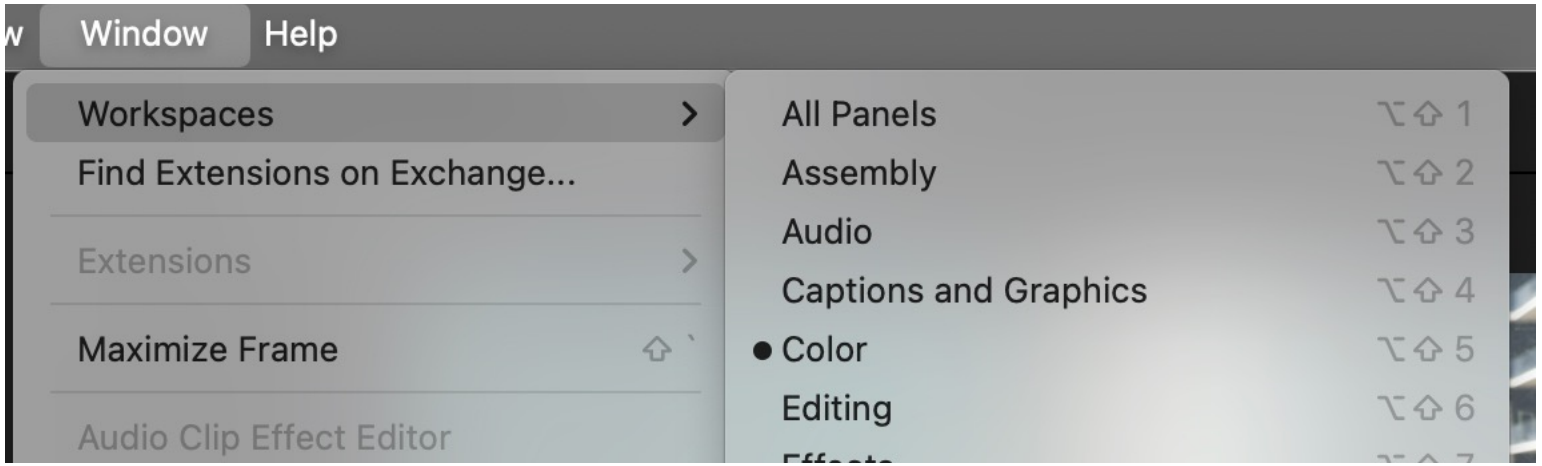


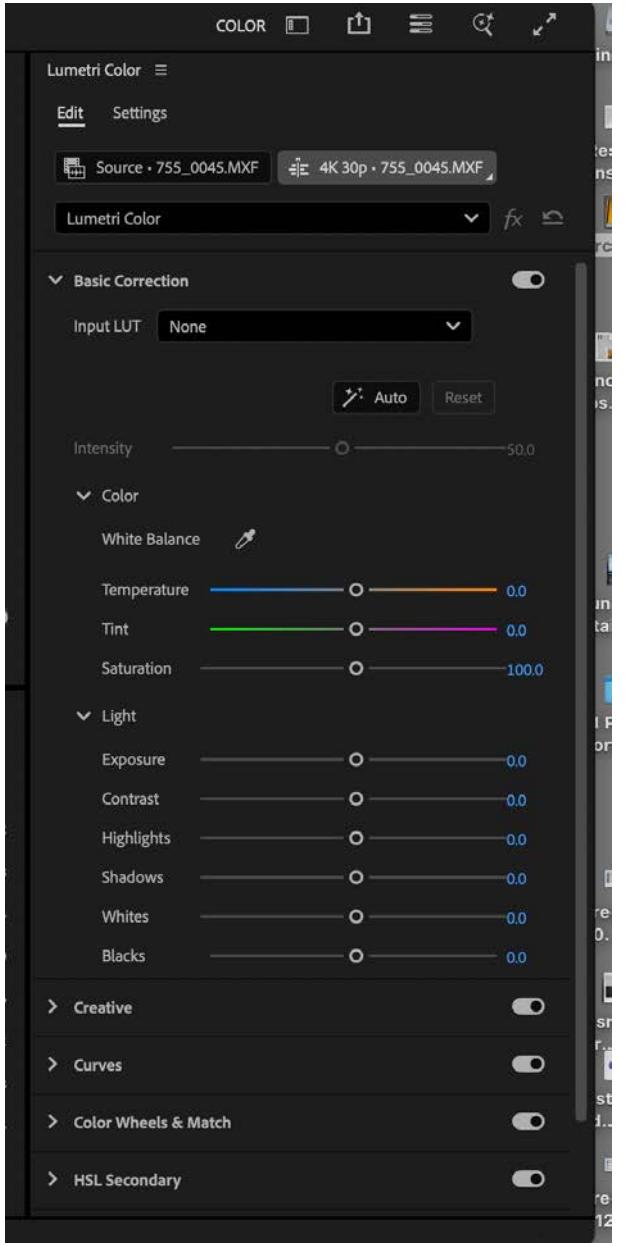


Lumetri Colour Effect

In Premiere, as you probably know, all of your colour correction happens in the Lumetri Colour Effect.

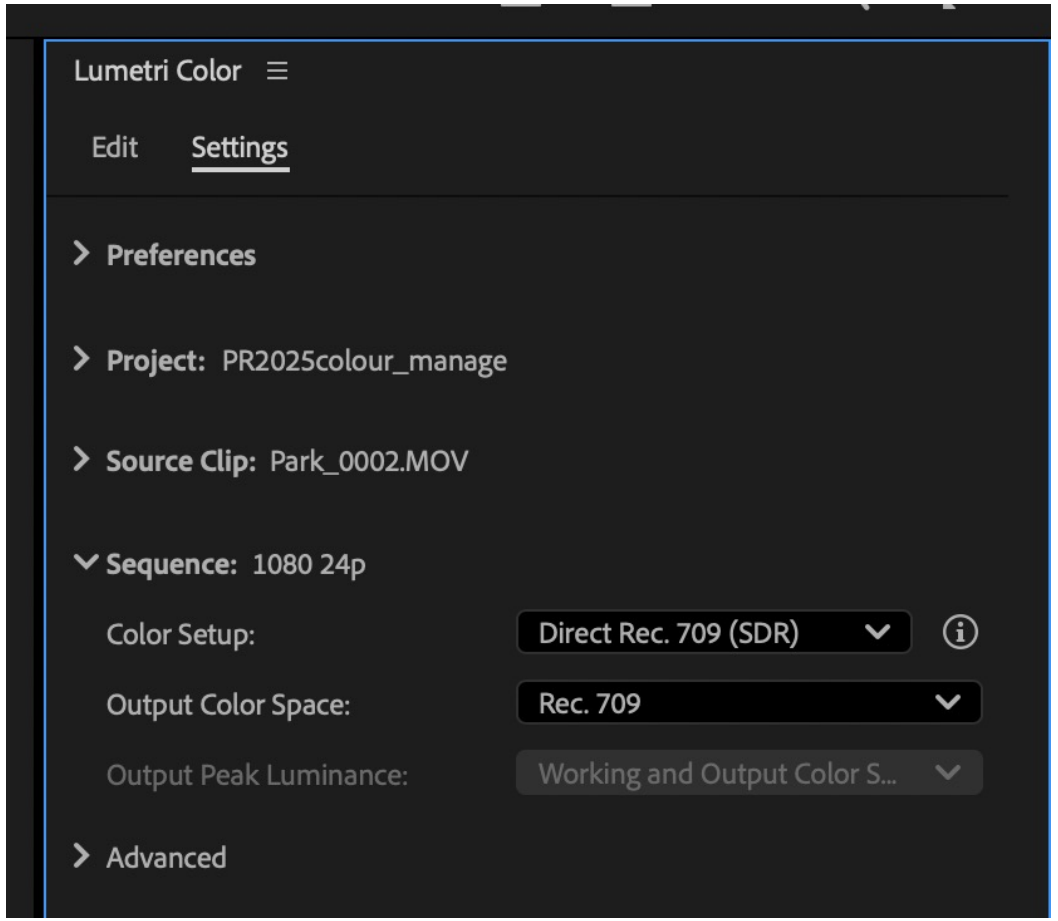
Change the workspace to Color in **Window/Workspaces**. Then the Lumetri colour effect will appear on the right and activate when you select a clip in the sequence.





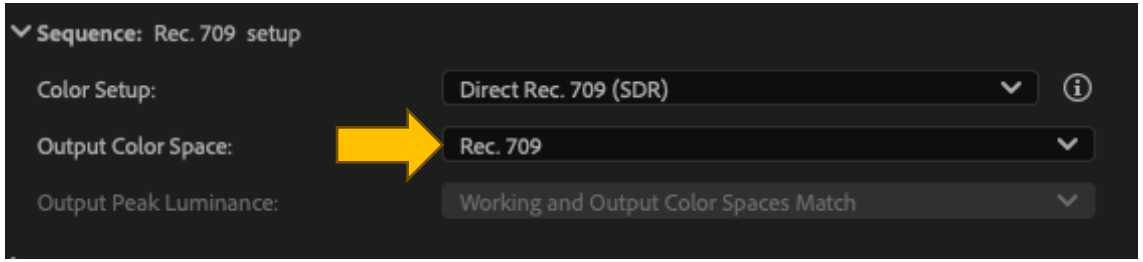
Lumetri Colour Effect Settings

Behind the Lumetri Colour Effect Edit tab are the **Settings**. This includes colour settings for the project, the source clip and the sequence.

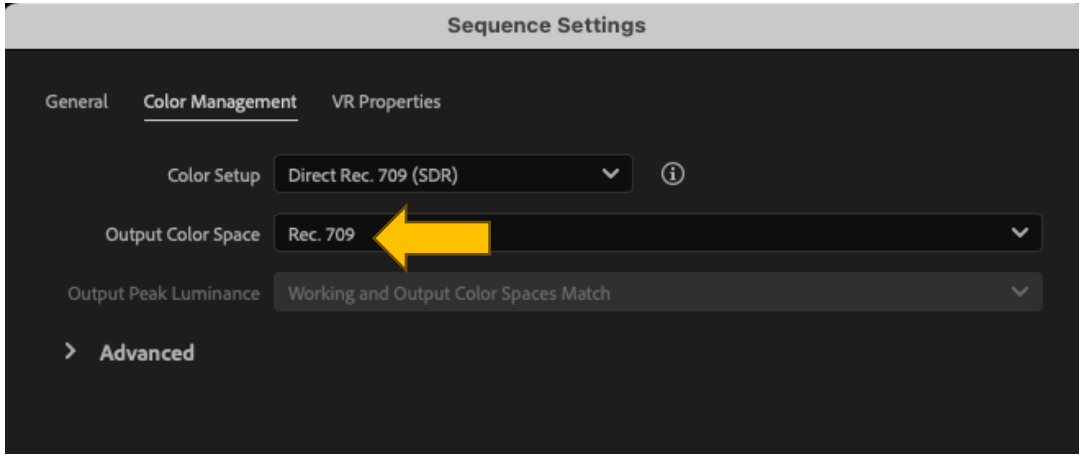


Premiere Sequence Settings for Colour

Sequence colour settings in the **Lumetri Color Effect**



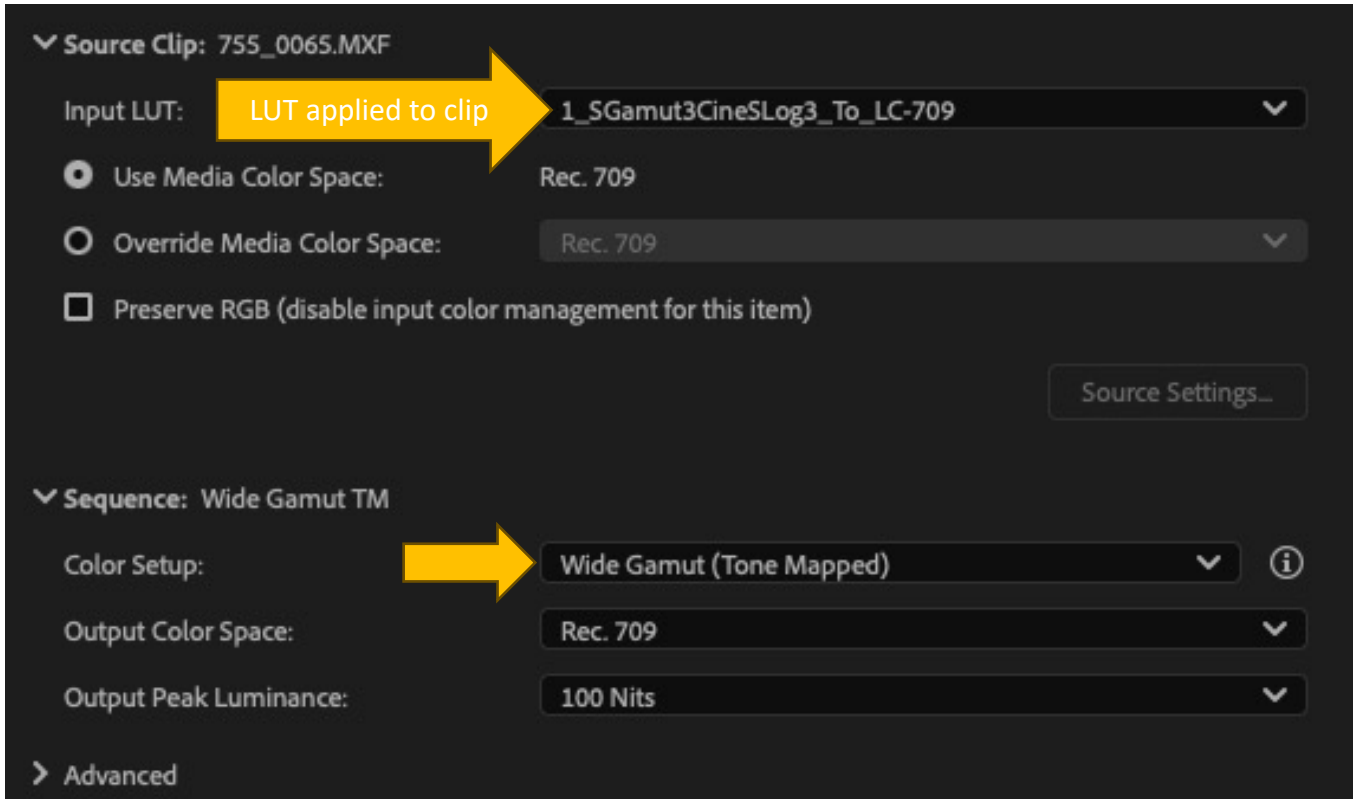
Sequence colour settings in **Sequence Settings**



The FSI monitor is a Rec.709 monitor so send it a Rec.709 output. In Premiere, in the **Lumetri Color Effect Settings Tab** the sequence **Output Color Space** should be set to **Rec.709** (image above). You can also make these adjustments in the **sequence settings** (image below).

It should be set to this regardless of whether you are correcting for web, broadcast (TV) or DCP. DCPs have a wider colour gamut of DCI-P3 but even if you correct using the Rec.709 gamut, the colours will be correctly mapped on to that wider colour space.

Log and RAW video files



How you work with Log and RAW files in Premiere is your choice.

Here is only one example. I have imported a LUT on a S-log 3 source clip to normalize it on a Rec.709 sequence. This is the same LUT I used in the camera when shooting.

In the **sequence** settings, **color setup** (internal processing of colour on the Premiere sequence) is set to Wide Gamut (Tone Mapped). But the **Output Color Space** is still Rec.709.

The Wide Gamut (Tone Mapped) setting provides less chance of clipping highlights in Log files. See the Premiere user guide for more information.

Adjust the Blackmagic Video Settings

Now adjust the Blackmagic Video Card settings using the Desktop Video Application.

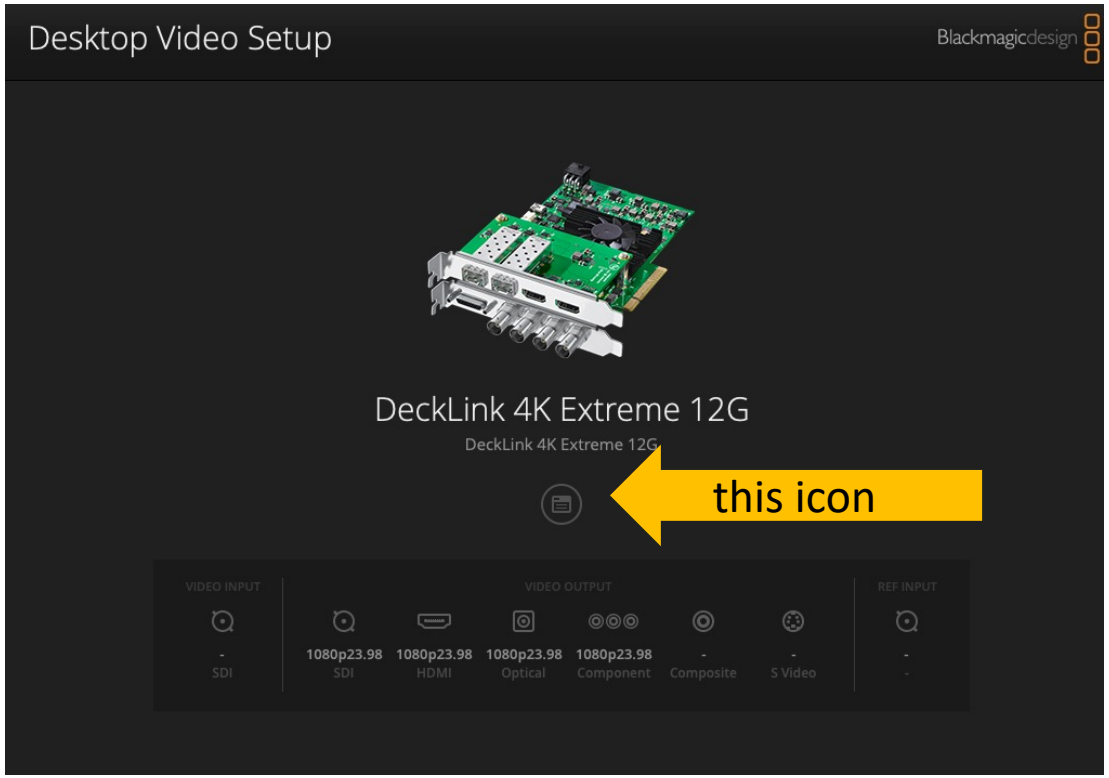
See the following section.

Blackmagic Video Card Settings for a Premiere Sequence

CDA AV suite zero EV 5.810

2026

Click on this icon to access the settings.

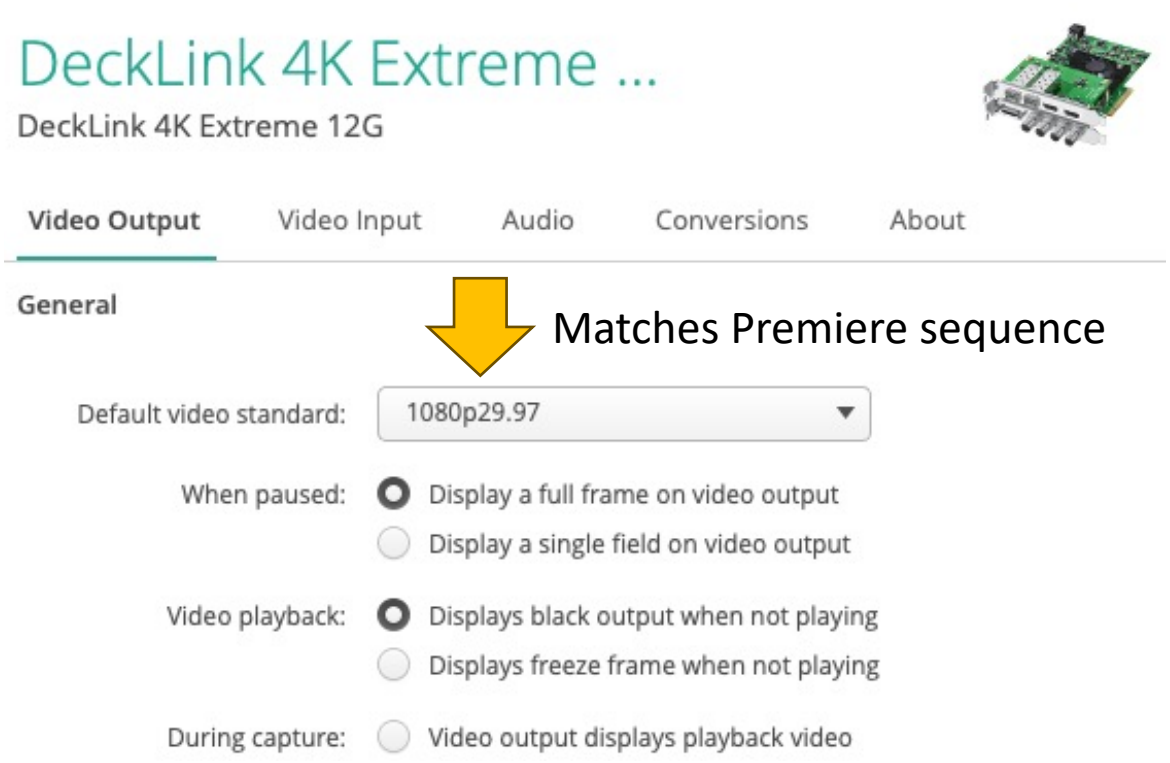


Open up **Desktop Video Setup** in the Blackmagic Desktop Video folder in **Applications**. You will see the start page with the image of the video card.

Ideally, you should not have to manually set the following settings. But I will go through them in detail, just in case.

Click on the icon in the middle of the window.

Blackmagic Video Output Settings

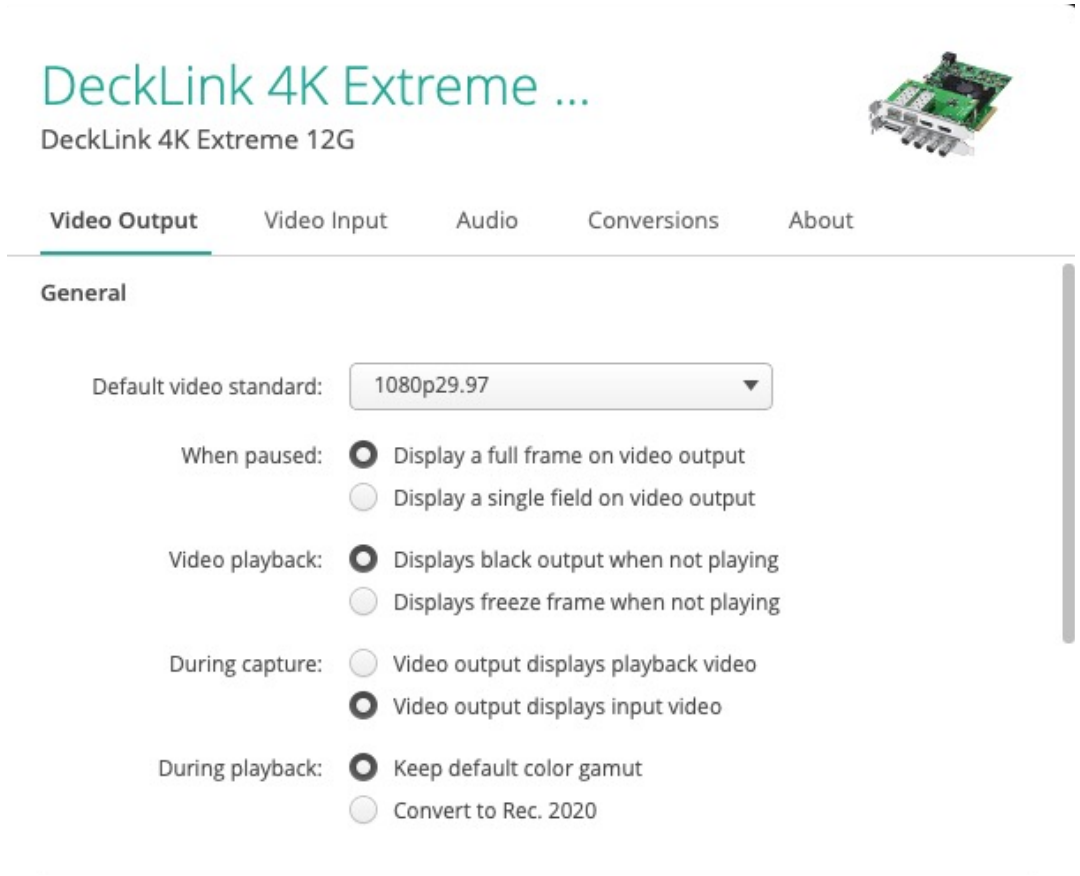


In the **Video Output** tab, change the **Default video standard** setting to match your Premiere sequence settings. Here I am working with an HD 30p sequence.

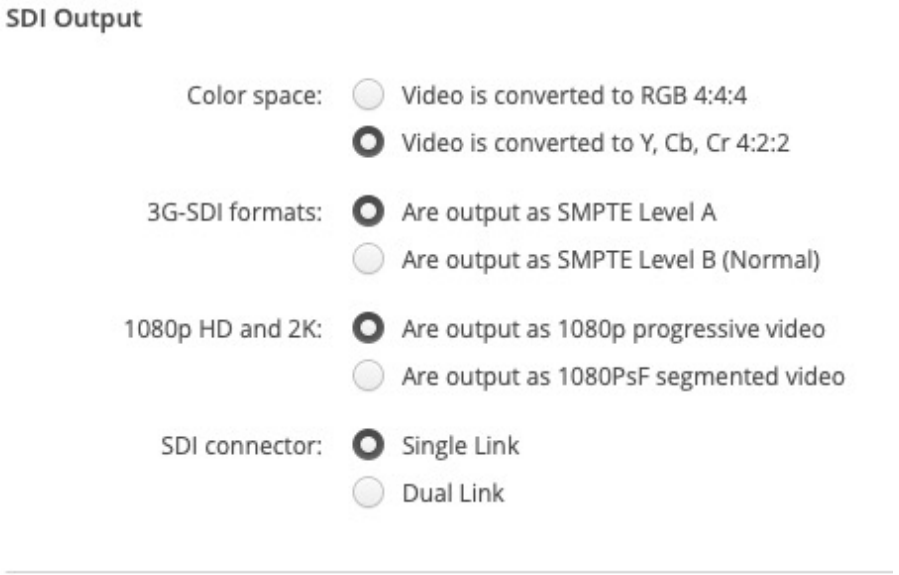
If you have a 4K UHD sequence, you can down convert it to HD. Choose the 4K UHD setting here with the correct frame rate. Then make the down convert selection. See page 27.

Display Full frame **when paused** and Display black when not playing.

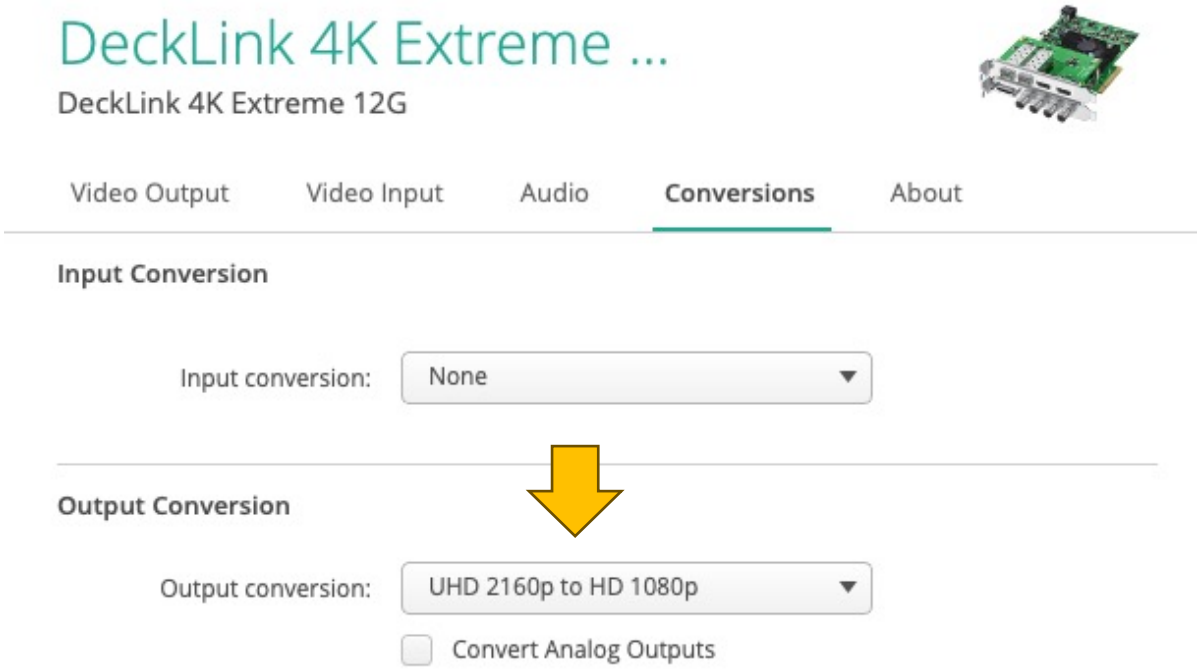
Blackmagic Video and SDI Output Settings



Use these **Video and SDI Output** Settings. You may change the **SDI Output color space setting** to **RGB 4:4:4** if you are working with 4:4:4 video files.



4K UHD Premiere sequences

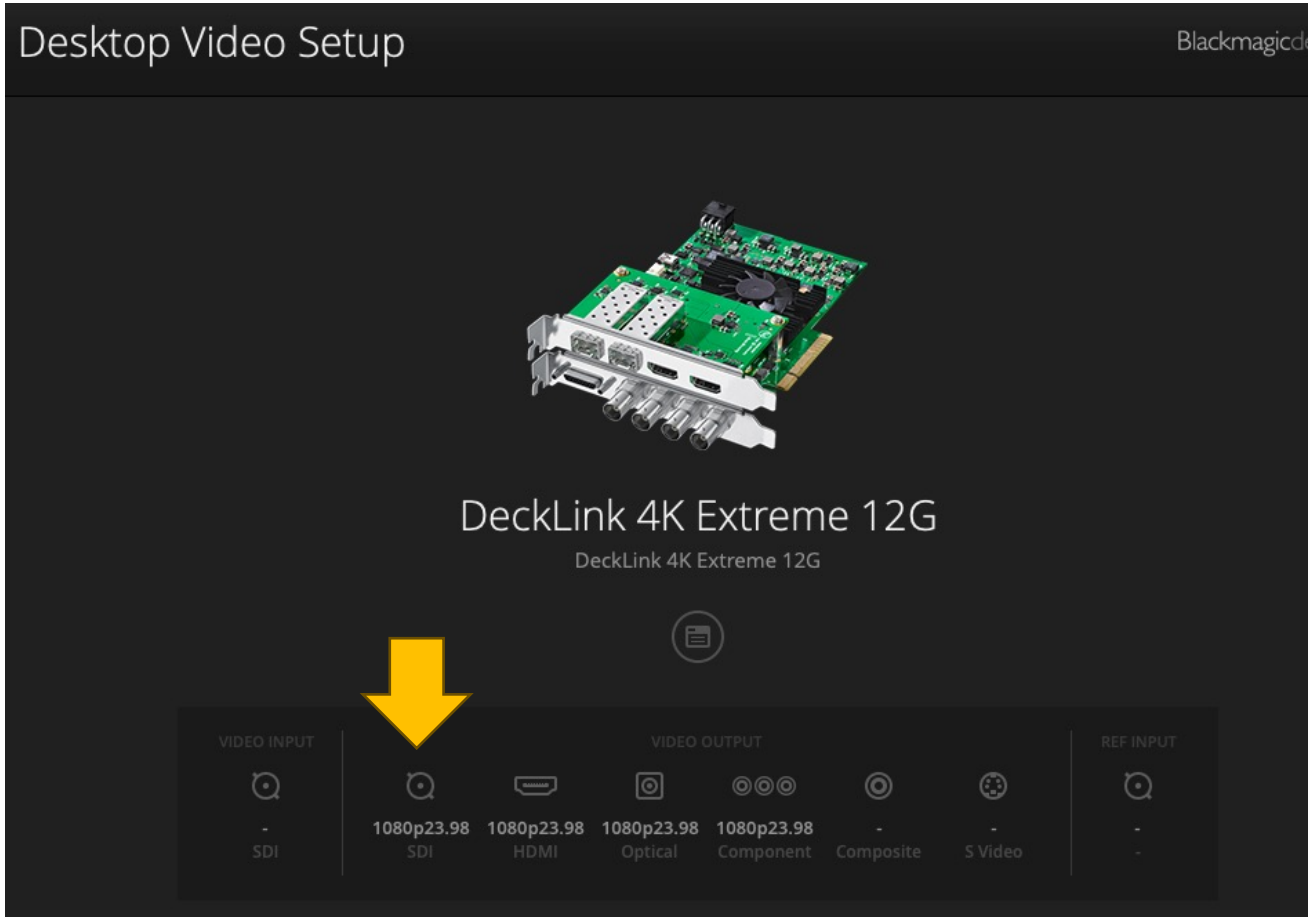


If you have a 4K UHD Premiere sequence, it is possible to get the image on the FSI monitor by doing a down conversion to HD in the Blackmagic Desktop Video Setup software.

Under the **Output Conversions** tab, choose **UHD 2160p to HD 1080p**.

You cannot down convert 4K DCI sequences.

Overview of Output Settings



The front page of the Desktop Video Setup gives you an indication of the SDI output to the monitor.

Here the SDI output is 1080 24p.

The Video card **does not have** the HDMI and component signals connected. Only the SDI connection is used.

Overview of Output Settings



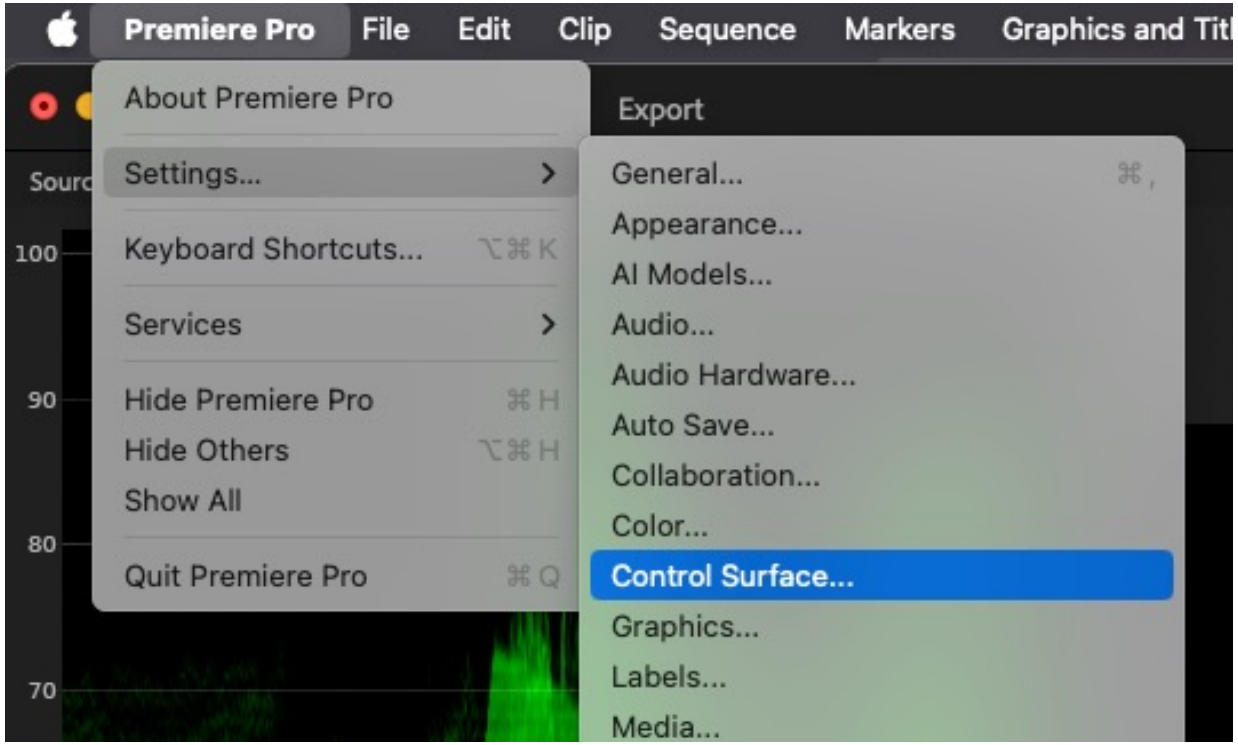
When you are working on a 4K UHD sequence in Premiere and down converting to an HD output, the **SDI A** output will indicate a 4K output (2160p). But the **SDI B** output will note the down conversion to HD (1080p).

Tangent Wave Control Surface Settings

CDA AV suite zero EV 5.810

2026

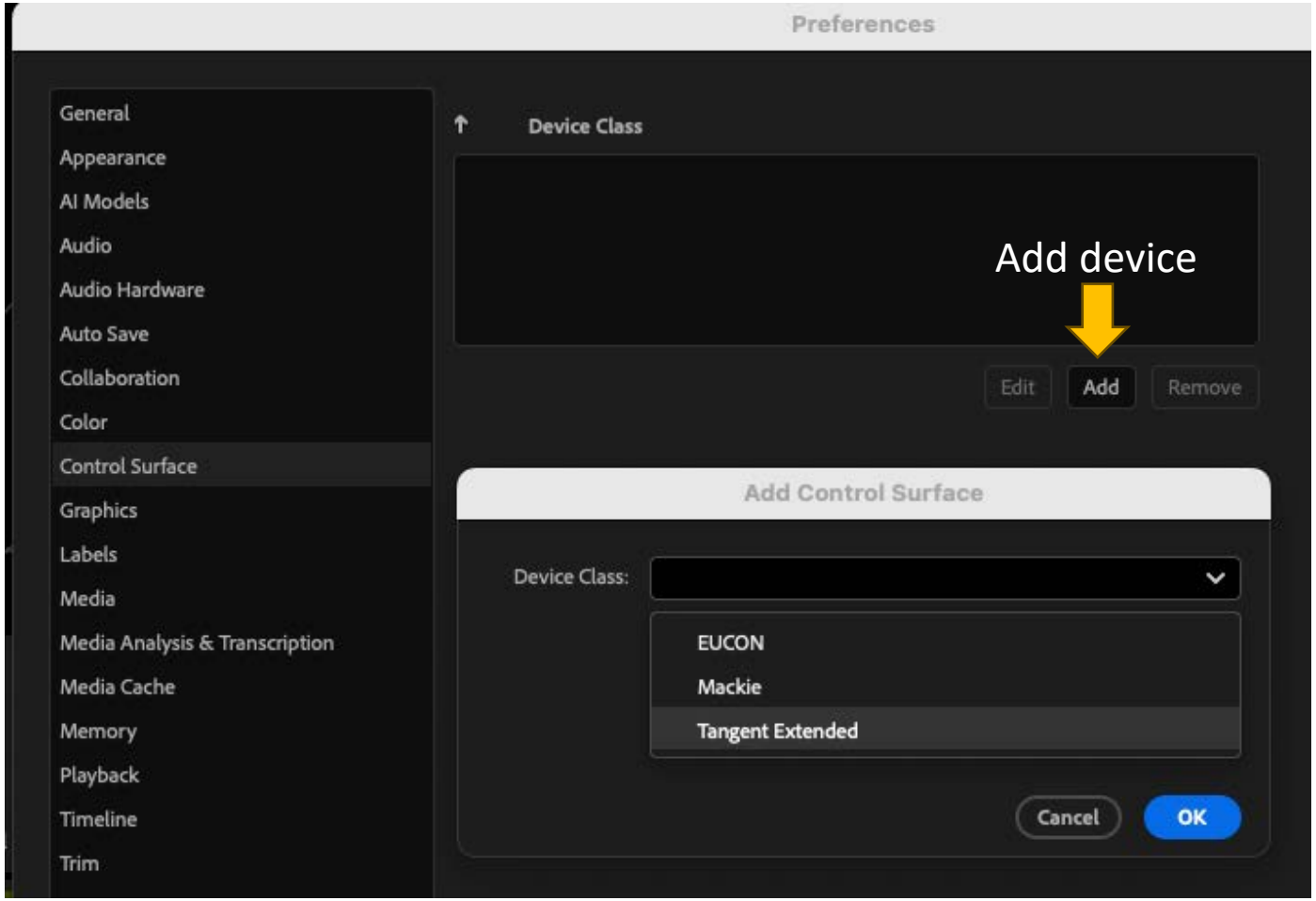
Enabling the Tangent Wave in Premiere



Make sure the Tangent WAVE controller is plugged in (USB 2 connector on the USB dock).

Go to Premiere Pro/Settings/ Control Surface

Enabling the Tangent Wave in Premiere



Add a device and in the drop-down menu and choose **Tangent Extended.**

Tangent Controller Mapping

To see the controls mapped onto the Tangent controller, you must be in the colour workspace in Premiere with a video clip selected in the sequence. The different controls for each of the tabs of the **Lumetri Colour Effect** will appear.

The curves tab of the Lumeteri Colour Effect will not be mapped on to the Tangent.

The **Basic Correction** and **Colour Wheels and Match** tabs work well with the Tangent.

All of your colour correction in Premiere happens in the Lumetri Colour Effect.

Tangent Wave Controls



Here, for example, the Lumetri Colour Effect **Basic Correction** tab is mapped onto the top controls of the Tangent Wave.

FSI DM240
Monitor Settings

CDA AV suite zero EV 5.810

2026

FSI Rotary Knobs



DO NOT use the rotary knobs on the front of the monitor to adjust Phase, Chroma, Brightness or Contrast. The monitor is calibrated and requires no adjustment. Double clicking any of these buttons will reset them to their normal calibrated state.

The Brightness and Contrast should be set to zero.

DO use the rotary knobs for adjusting the point to be analyzed by the Measurement 10 bit and CIE Measurement tools.

Default Menu Settings for the FSI monitor

The following page describes the default setup for working with the FSI monitor.

This setup is designed to accept a **video level signal** from the software.

If you are working with Adobe Premiere this is the setup you require.

The Gamma and Gamut selections have been made for maximum flexibility but can be adjusted for any project. Read further if you wish to make a Gamma or Gamut change.

Default Menu Settings for the FSI Monitor

Check these settings before you begin colour correcting.
You can access the menu through the buttons on the front of the monitor.
Read further to change some of these options.

Real Time Scopes/ Lum Win Style/ **IRE**
Video/SDI Format/ **Auto**
Color Management/ Color Space/ **Rec 709**
Color Management/Gamma Select/ **2.4**
Color Management/Color Temperature/ **6500K**
Color Management/SDI Black Level/ **Video**
Color Management/Video Clipping/ **OFF**

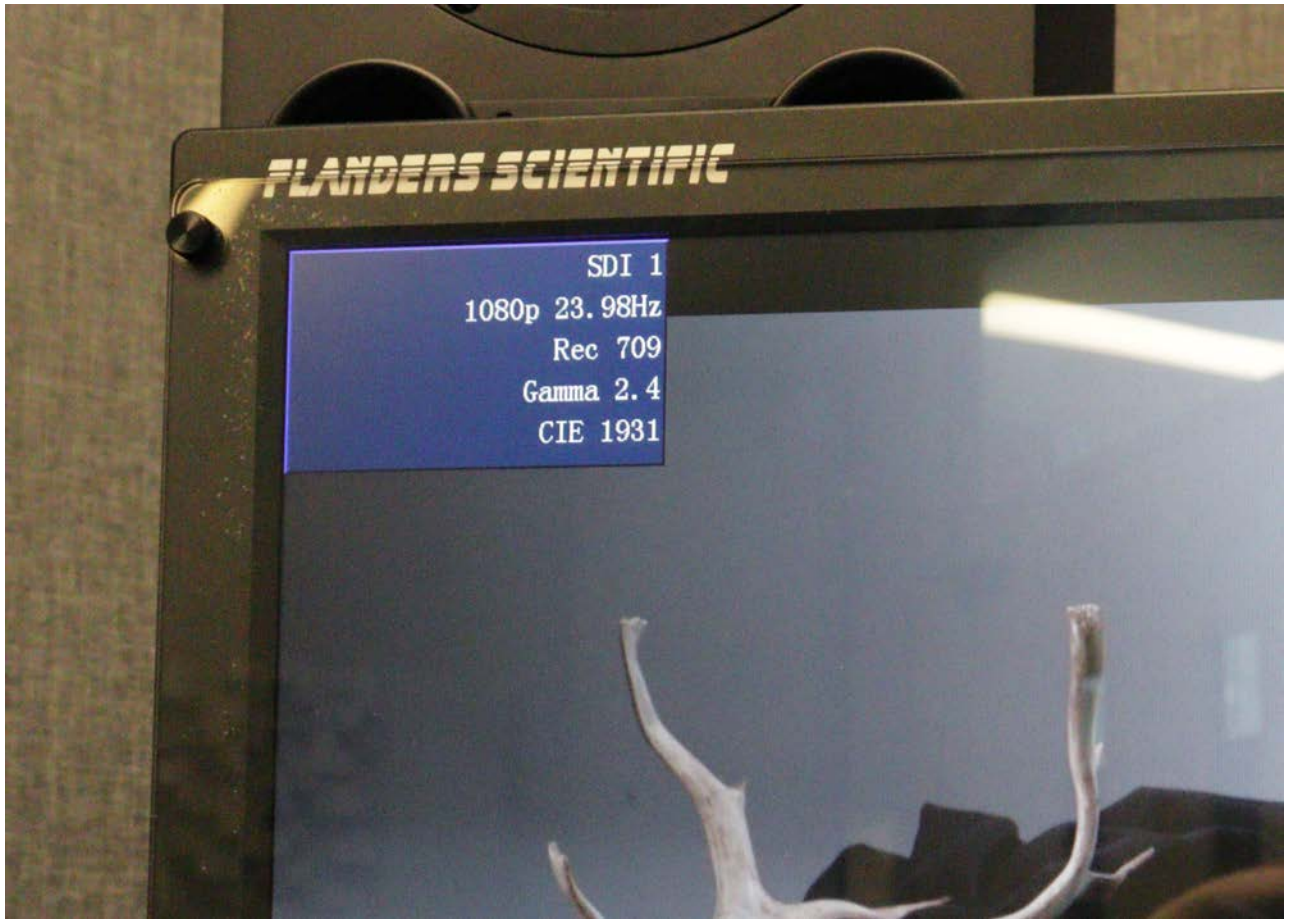


FSI Monitor SDI 1 input



To receive a video signal, the FSI monitor should be on **SDI 1** input.

Seeing the Input on the FSI Monitor



When the video signal first appears, there will be a box in the top left with the resolution and frame rate of the input signal and the color gamut and gamma settings that are set in the monitor.

The resolution and frame rate should match your sequence settings.

If it does not, or if there is no signal, adjust the video output settings of the Blackmagic video card.

Making Gamma Adjustments

Standard video displays have different contrast settings, called Gamma settings. Gamma refers the transition that occurs from black to white. This is typically a non-linear transition with the degree of the curve determined by the display device.

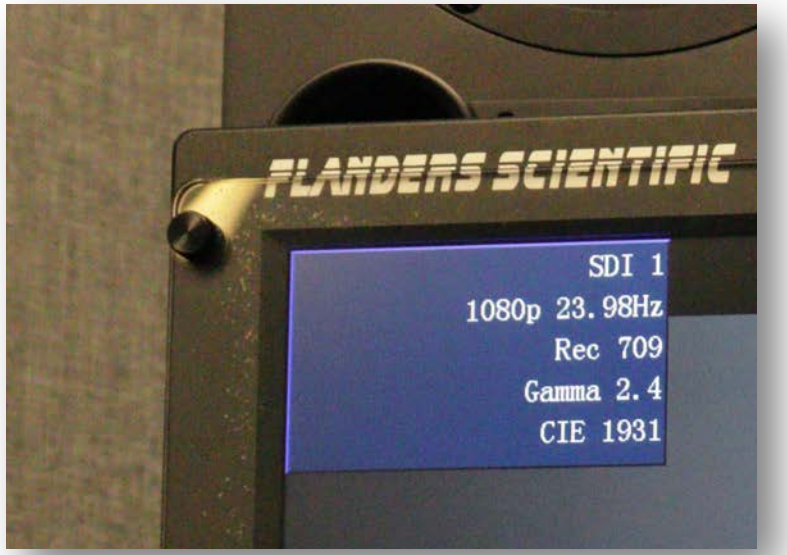
Every type of video display device has slight variations in how it adjusts image contrast using the gamma curve. The variations are slight but significant. A **higher display gamma** produces **more contrast** and a slightly darker image.

Standard Video Display Gammas

2.6 DCI projectors (This is only for Digital Cinema projection.)
2.4 HD broadcast displays (TVs in North America and other NTSC nations)
2.35 EBU broadcast displays (TVs in Europe)
2.2 Default for computer screens and data projectors

These are the standard gamma settings for each display device.
Ideally, we would do separate colour corrections for each different type of display.
In practice, we seldom want to colour correct more than once for different displays.
Therefore, the FSI monitor is set to a gamma of **2.4**, as a compromise.

About the Default Gamma Setting



The gamma of 2.4 sets the contrast between that of DCI (2.6) and computer displays or data projectors (2.2). It is the perfect gamma for North American TVs.

If you are colour correcting for a DCP export, but still need a suitable correction for broadcast (TV) or the web, this is a good compromise setting. Correcting at the DCI standard of 2.6 might necessitate a second correction for the web (2.2).

If you will be showing your work in a gallery but are unsure about whether it will be shown on a TV or on a data projector and you will also need a file for the web, this is also a good compromise setting.

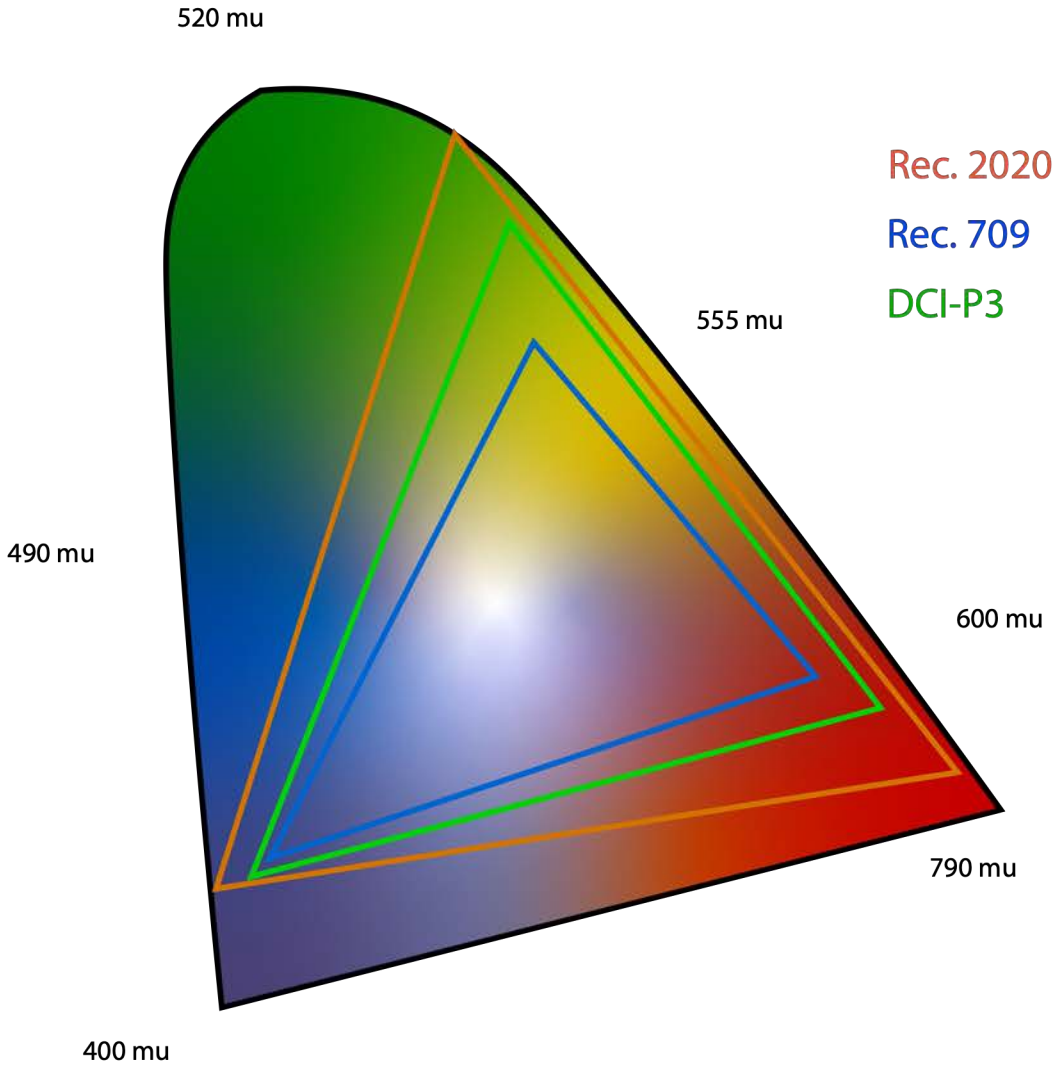
Changing the Gamma on the FSI Monitor



To change the gamma on the FSI monitor, use the menu navigation controls on the front of the FSI monitor and navigate to **Color Management/ Gamma Select**.



About Gamut



Video files have different color spaces or colour **gamuts** that define the range of hues that they can reproduce.

These can be mapped out on the CIE triangle, a chromaticity diagram that shows all possible visible colours in a horseshoe shaped area.

DCI-P3: Cinema Projectors
Rec. 2020: HDR displays
Rec. 709: HD Video (TVs that are not HDR)
Adobe RGB: Computer Displays (not shown)

Premiere has no DCI P3 gamut sequences

By default, the FSI monitor is set to the Rec. 709 gamut.
All Adobe Premiere sequences are either Rec. 709 gamut or HDR Rec. 2020.
Premiere does not have a DCI P3 colour gamut output for sequences.
When using the CDA colour correction suite, you will be using **a Rec.709 sequence** in Premiere.

Rec. 709 is the perfect gamut setting when correcting for the web, broadcast and gallery installation.
When working in Premiere, keep the Gamut setting of the FSI monitor on Rec. 709.

Even though Digital Cinema uses the DCI P3 gamut with more colours, you can still use the Rec. 709 gamut for Digital Cinema (DCPs). If you correct in the Rec.709 colour space, all the colours will appear accurately in the DCI P3 colour space. You will not have used the full advantage of the DCI P3 colour space but it will be accurate.

Correcting HDR (Rec. 2020) video

HDR means specifically the HDR TV standard.

HDR TVs are brighter TVs with expanded contrast and colours. They are not widely used and Concordia Fine Arts has no HDR display devices.

The FSI DM240 monitor is not designed to colour correct HDR video for HDR TV.

It is not an HDR display. However, it can simulate the HDR Rec. 2020 colour space if you wish. Please see the manual from FSI included in this package.

HDR does NOT refer to video shot with LOG luminance sampling or shooting video in LOG with a high dynamic range cinema camera (SLOG, CLOG, ArriLOG, etc.). RAW video is also not specifically shot for HDR devices.

Video Scopes and Meters



On the front of the FSI monitor, there are several function buttons.

These have been chosen to display various video scopes and meters.

The following pages will describe the default settings for each of these function buttons.

Waveform and Vector Scope: F1



These are the essential scopes and it is useful to see them overlaying the image.
Both have translucent backgrounds. The scales of both of these scopes can be adjusted in the monitor menu settings.

Waveform Monitor scale



For Adobe Premiere, keep the Luminance Window Style to **IRE**.

Then the waveform monitor will match the one inside Premiere that is also set to the IRE scale by default.

You can verify this. It's best to use the colour bars that you can generate inside Premiere:

File/New/HD Bars and Tone

RGB Parade: F2



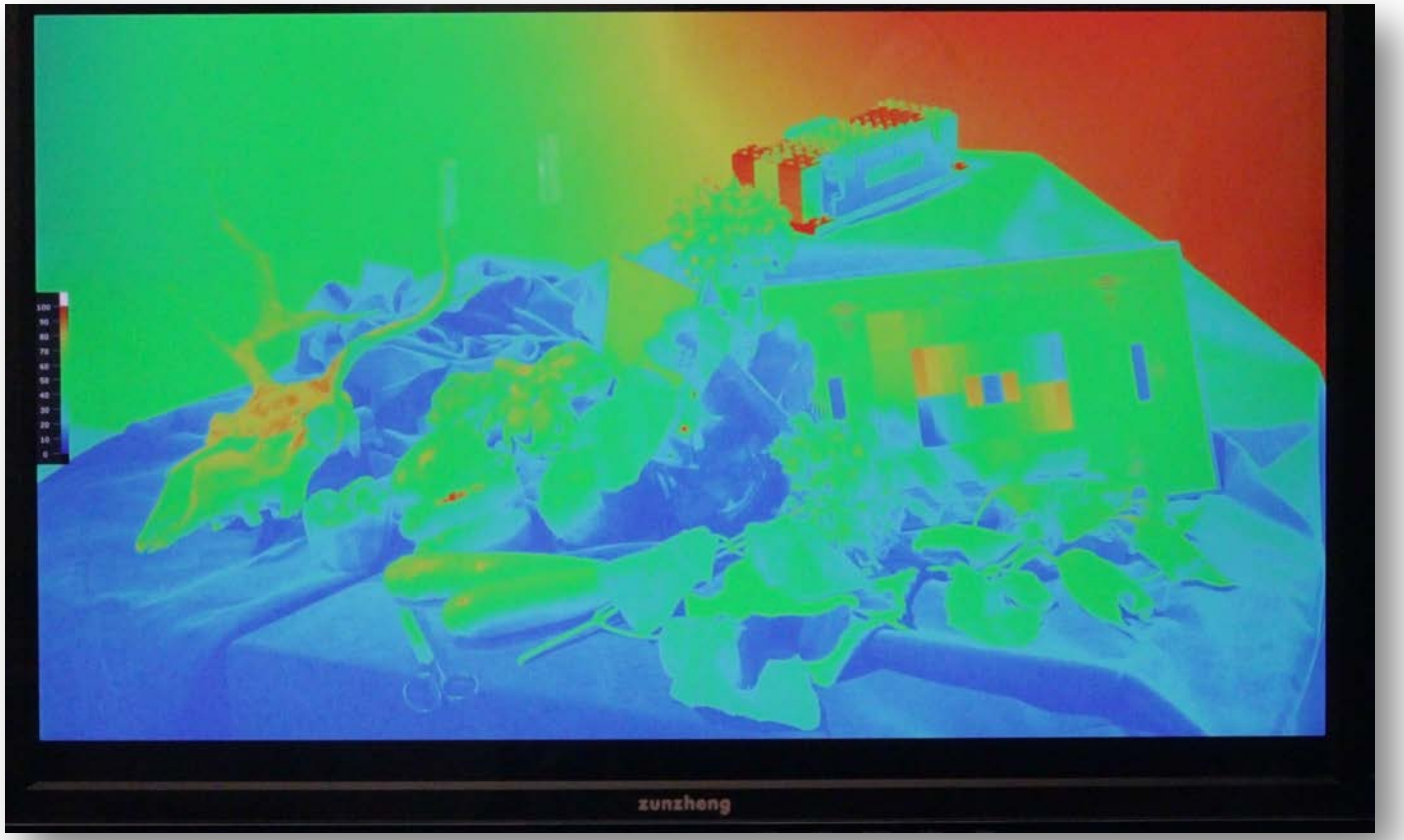
Histograms: F3



These scopes are less essential but once again it is convenient to see them with the image.

Unfortunately, these scopes do not have transparent backgrounds.

Luma Coloring: F4



This assigns a color to specific areas of luminance.

Once again, the settings are adjustable, see the FSI DM240 manual for details (included with this guide).

Measurement 10 bit: F5



This provides precise 10 bit YRGB measurements on a precise point or area of the image.

CIE Measurement: F6



This provides chromaticity measurements of any point or area. The point will be plotted on the CIE color space triangle. Very useful for white balancing if you have a white area in your image!

These are not very common tasks to perform. See the FSI manual for more details.

Thank you for reading this guide!

Questions or comments:

philip.hawes@concordia.ca