



madVR Envy

Sony Setup Guide

www.madvyenvy.com

Revision 1.0

Introduction

Welcome to the Envy Sony Setup Guide. Although setting up the Envy itself is often as simple as plugging in the HDMI cables and entering the projector's peak brightness, it is important that your projector be set optimally for use in conjunction with the Envy. This guide covers the recommended set up for Sony projectors when used with Envy.

Please make all the menu changes with “Base Settings” selected in the Profile Bar (the bottom selection in each Envy menu) so the changes will be permanent. Otherwise, if you make changes when “Active Settings” is selected in the Profile Bar, the changes will only be temporary and later lost, unless you use the “Save to Base” option. For a better understanding of how settings in the Envy work, please see Introduction to Profiles guide at www.madvrenvy.com/#downloads.

Sony Configuration

The following steps are recommended to best configure the Sony for use with the Envy.

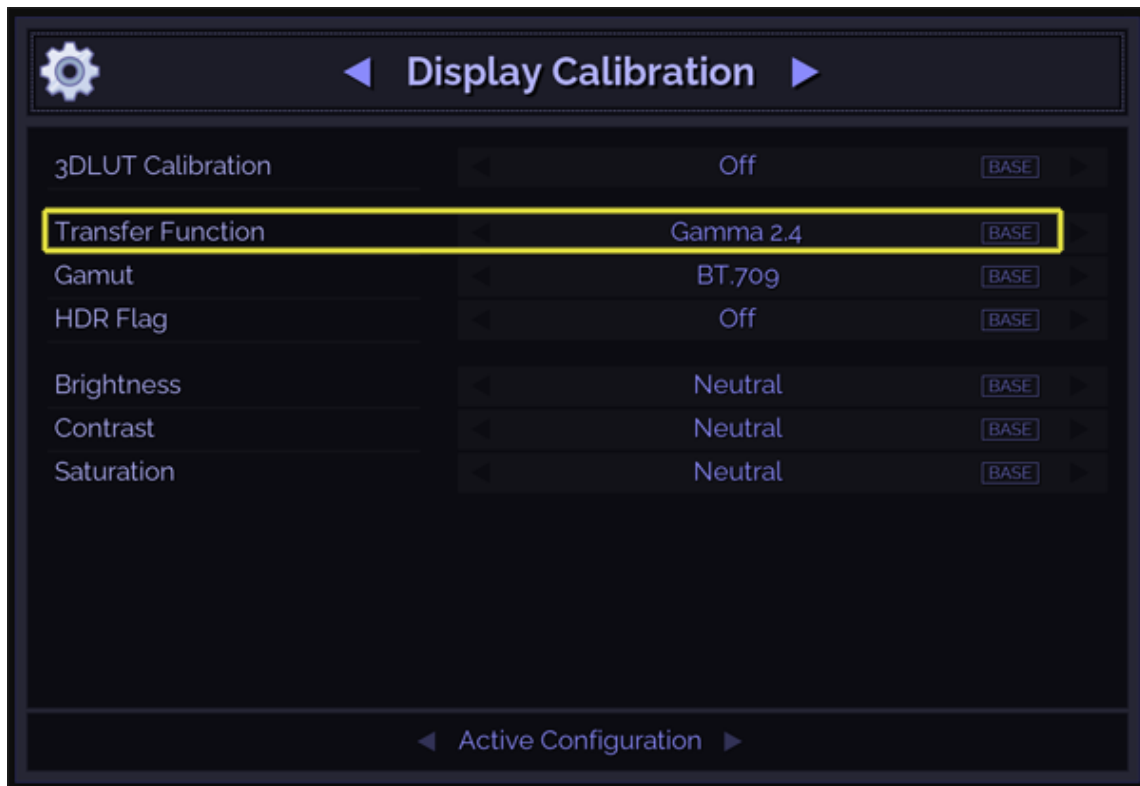
1. First, we need to configure important settings in the Envy's Display Configuration menu. Pressing the top-right button on the Envy remote to access this menu. Then follow the steps below. An example of the completed settings is shown in the image on the next page.
 - A. **Resolution setting:** If you are using a screen with an aspect ratio of 1.85:1 or larger, such as a 2.35 or 2.40, set the “Resolution” option in this menu to **4096 x 2160**. This will make full use of the full Sony panel and provide additional brightness. After changing to 4096 x 2160, adjust your lens zoom position to fit the screen. If using a 16:9 screen, set the “Resolution” to **3840 x 2160** (4096 would be slightly detrimental for 16:9 screens).
 - B. **Color Space:** Change the Color Space to **YCbCr**. If you later perform a 3D LUT, for best results you should then change to the RGB setting and use that with your calibration.
 - C. **Peak Luminance:** Peak Luminance is a measure of the brightest image your display achieves for a specific system configuration. This depends on several factors, including your display's lumens, lens position, iris position, lamp/laser power mode, calibration settings, throw distance, and your screen size and gain.

The best way to determine your peak luminance is to display a 100% white pattern and measure it using 3rd party calibration software or a handheld lux meter. If measuring with calibration software, enter the “cd/m²” measurement as your nits value. If using a lux meter, you will need to convert the lux reading to nits or foot lamberts. Please ask your dealer for assistance if needed.



- Assuming you changed the Color Space from RGB to YCbCr in step 1B above, go to the Envy HDMI Configuration menu (press the Envy menu button, then press the right arrow button four times) and set the **Slow YCbCr Handshake** option to On. This optimizes the HDMI handshake with the Sony. Without this setting, you may experience green flashes during HDMI handshakes. If you later use a 3D LUT calibration and set the Color Space back to RGB, set this handshake setting back to Off.
- If not using a 3D LUT, it is critical that the Envy Transfer Function value match the **Gamma Correction** setting in the Sony menu. We recommend using a value of 2.4 for both the Sony and Envy. To access the Gamma Correction setting in the Sony - from the main "Picture" menu, select Expert Setting. Then set the Gamma Correction value to 2.4.

To access the Transfer Function setting in the Envy: From the Display Calibration menu (press the top-right button on the Envy remote, then press the right arrow button once), change the Transfer Function to 2.4. In the event you wish to use a different Gamma Correction in the Sony, such as 2.2, please make sure you then also set the Transfer Function to match (2.2 in that case).



4. If using a scope screen (a screen that has an aspect ratio of 1.85 or greater, such as 2.35 or 2.40 aspect ratio), please follow the instructions in the Envy Scope Screen Setup Guide, available from www.madvrenvy.com/#downloads.
5. ALL other settings in the various Envy Configuration Menu should be left on AUTO, unless you have a particularly good and specific reason to change it. Often people change these settings without understanding the fully impact. A good example is the HDR Flag setting. Some people change this to On, thinking that would be a good thing. In almost all cases this should be left in Auto (and Envy will not set the flag, intentionally). Note that changing the "Configuration" items should not be confused with the changing the Envy Settings Menu (the Envy remote control button with the 3 sliders on it) - those are there for you to change to suit your tastes.
6. In the Sony "Picture" menu, we recommend turning Reality Creation Off. Or using it lightly, such as Resolution at 15 or lower, Noise Filtering - Off, Defocus Optimization - Off. Sharpness of 15 is generally optimal but feel welcome to set it to taste.
7. In the Sony Cinema Black Pro menu, we recommend dynamic control set to Full (but it is OK to use limited or off, perhaps even more "correct" to use Off, but this can be set to taste). For Laser Light Output we recommend on Max, to maximize the brightness available for HDR. If this causes the Sony fan to run a bit too loud, you can use a slightly lower setting for max without impacting the brightness much, while quieting the Sony fan.

8. Sony Contrast Enhance - We recommend turning this off, but it can be used in moderation if preferred, but be sure to check it with Envy's Contrast Recovery function while Envy is doing Tone Mapping with 4K HDR.
9. Please follow these three steps to ensure the Sony switches color spaces properly based on whether the incoming signal is using the BT709 or BT2020 color space. These settings are found in the "Picture" menu, under "Expert Settings":
 - A. Set the "HDR" option to Auto. This way, the Sony will automatically switch to the correct color space based on the incoming signal.
 - B. Play any HDR content, so that the Sony receives a BT2020 signal. Set the "Color Space" to BT2020. Alternatively choose "Color Space 2" if you wish to bypass the Sony's P3 filter, although we do not recommend this.
 - C. Play any SDR BT709 content. Set the "Color Space" to "DCI" or "BT709" (the choice given depends on which Sony projector you are using).
10. We recommend setting Sony's MotionFlow to Off. When using the Sony panel at full 4096 resolution, the MotionFlow option is limited to just one mode and it can reduce max light output, impacting HDR headroom and quality. However, the MotionFlow can still be used if preferred - just be aware it can impact the overall light output.
11. In the Sony "Setup" menu, set Network Management On. This will be useful once we introduce the integration that enables the Envy to control the Sony directly.
12. Sony HDMI Configuration:
 - A. Under the Sony "Function" menu, set the Dynamic Range for the HDMI ports to "Limited", to be sure the Sony picks the proper levels (Auto will usually pick Limited, but sometimes the Sony will get it wrong and cause a level mismatch).
 - B. Change the HDMI Type from Standard (9 Gbps ports) to Enhanced (18 Gbps ports) for all models except the VW295ES, which does not support 18 Gbps input. Note, however, that **this setting requires certified full bandwidth 18 Gbps HDMI cables**. For cables over 30 feet this usually means an active fiber HDMI cable. If you have HDMI dropouts or handshaking issues after changing this setting, set the Envy HDMI Output EDID Override (on the Envy HDMI Configuration menu) to 9 Gbps, from the default of 18 Gbps. This can slightly degrade quality of 4K60 content, but is a suitable workaround until the cable situation can be solved.

13. Under the Sony Expert menu:

- A. We recommend everything be set to Off. As discussed earlier, but bears repeating, the Gamma Correction set here should match the Envy's Display Configuration Transfer Function setting.
- B. Set the HDR mode to Auto. When Envy receives HDR, it intentionally sends SDR to the Sony. If you bypass Envy's tone mapping using the green button on the remote, then Envy will output HDR (for HDR sources) and the Sony will use its own tone mapping. In some cases, the Sony may not switch its tone mapping to "On" in this case. Should that happen, you can manually change this setting from Auto to HDR10. However, please be sure to return it to Auto (or Off) before switching the Envy tone mapping back on.
- C. Always set the **Anamorphic** option to **Off**, even if you have an anamorphic lens (in which case you will configure the Envy Screen Configuration menu settings to use its AI-based anamorphic stretch instead).
- D. Aspect should be set to **Auto**. Regardless of the Aspect Ratio of the Screen or content, the Envy can be configured to optimize the picture size with the use of its Profile system, along with its Black Bar Detection and Management options.

Quick Sanity Check

After completing the setup of the Envy with your Sony projector, we recommend reviewing the following checklist as a final "sanity check" to help ensure everything is set up optimally:

- A. Play any 4K HDR movie (except Gemini Man or Billy Lynn). Check the Envy Incoming Signal Menu (press OK on the Envy remote when no Envy menu is active) and make sure that the "Framerate" shows 23.976. If instead it shows 59.94, and you are using an Apple TV or Kaleidescape, then your source device(s) are not set up for proper playback – check our setup Apple TV and Kaleidescape guides on our website for more information. Or if you are using a different source device, check its settings and make sure it outputs in a "native" or "direct" mode.
- B. While playing the 4K HDR movie, check the Envy Incoming Signal Information to make sure the "Transfer Function" shows "HDR". If not, Envy is not receiving HDR from the source player. This could be caused by a "rogue" device in the HDMI chain, or if using an AVR like the Denon/Marantz, make sure it is set to use "Enhanced" HDMI, so that it outputs the full 18 Gbps bandwidth and is not restricted to 9 Gbps.

- C. While on the Envy Incoming Signal menu, press the right arrow once to access the Outgoing Signal Information. Make sure that the “Framerate” shown here matches the “Framerate” from the Incoming Signal Information menu (in this example, both should show 23.976).
- D. If the colors look undersaturated or oversaturated, check the Envy Outgoing Signal Information and verify that the Outgoing “Colorimetry” matches the color space you expect for the current content being played (e.g., “BT.2020” or “BT.709”), and check the Sony menu to confirm the projector is using that correct, corresponding color space (revisit steps 9).

Additional Resources

This concludes the Sony setup instructions. We recommend also review the Envy Introduction to Profiles guide, and the setups guides for source devices such as Kaleidescape and Apple TV. This and other such resources are available at www.madvrenvy.com/#downloads. Thank you and enjoy your Envy!