

Quick Start Guide v0.8b

madVR Envy

1. Introduction

Congratulations on the purchase of your madVR Envy! The Envy is the result of over ten years of extensive R&D. It is the first and only video processor to provide patent-pending AI and other advanced algorithms for real-time video, delivering a picture quality unlike anything else. We hope you find watching movies with it as incredibly addicting as we and many others do.

Although Envy works right out of the box, this guide will help you get the most out of it. For the best experience, please review it in full, before getting started.

2. Initial Set Up

The following is an overview for getting up and running quickly.

- 2.1. **Unpack and connect the Envy:** Your shipment contains the Envy, remote control, remote control RF dongle (which may have already been preinstalled in the rear) and a power cord (USA shipments only). Please save the original box and packing materials. Review the rear panel as shown in Appendix A. Connect your HDMI in and out, and power cord. Turn Envy on by pressing the button on the front panel and enjoy it right out of the box!
- 2.2. **Proper ventilation:** Caution: When performing upscaling such as 1080p60 to 4K60, or with other advanced algorithms that may be added in the future, the Envy (particularly the Extreme version) can get “hot to the touch” in the middle and rear section of the lid, and expels hot air from the rear and top vents. Please ensure proper ventilation before use. For important information on ventilation, see Appendix C.
- 2.3. **Remote control:** Review Appendix B for an overview of the remote-control functions. The remote supports both RF and IR. Both the RF and IR dongles are pre-installed, as shown in Appendix A.

To put the remote into RF mode (default): Press and hold the OK button, and while still holding it, press and hold the top left button (Power) for 3 seconds, until the LED light on the remote blinks 3 times. Your remote control is already

set to RF mode by default. For proper operation **keep the RF dongle at 180 degrees** (please do not set it in the 45 or 90-degree position).

To put the remote into IR mode: Press and hold the OK button, and while still holding it, press and hold the top right button (Menu button) for 3 seconds, until the LED light on the remote blinks 3 times. Note: After changing batteries it will be necessary to set the remote back into IR mode.

You can use both RF and IR commands at the same time. For instance, you may want to learn the Envy IR commands into a universal remote, while also keeping the Envy remote around for greater convenience. If learning the IR codes, first put the remote control into IR mode. Then you can leave it in IR mode or switch it back to RF mode, and both your universal remote and the Envy remote will continue to function together either way.

We recommend using the Envy remote control in RF mode, since it does not require line of sight. If you use IR mode and need better line of sight, plug the IR dongle into a USB extension cable and route it under the unit to the front, where it can be easily hidden. To customize the functions of the remote buttons, click the top right button of the remote and press the right arrow until you reach the Remote Configuration Menu.

3. General Operation

This section covers general setup and operation of the Envy.

3.1. **Menus:** The main menus are divided into sections for: Configuration, Permanent Settings, Temporary Settings, Information and Test Patterns. The Configuration menu is where you set information about your system such as your preferred output resolution, color space, bit depth, and your peak brightness. The Permanent Settings are where you set your preferences for HDR processing, upscaling, artifact reduction, sharpening and more. Permanent Settings remain until you change them. Temporary Settings enable you to easily override the current settings (as inherited from the Permanent Settings), until the next signal change (typically when the movie ends), when it then intentionally reverts to the Permanent Settings. The Information menu shows information about your incoming and outgoing signal, the display device, and system information such as your model type and serial number. For security purposes, never share your serial number, except with your dealer or madVR Labs. Test patterns are also included.

- 3.2. **Front-panel:** The front panel is as intuitive as the Envy itself. The LED lights blue when the unit is on, lights red to indicate disk activity, slowly pulsates between blue and off when in standby, and is off when the Envy is powered off. You can control the brightness of the LED (or turn it off) using the wheel at the bottom edge of the front panel. To find the wheel, place your finger on the LED and move it down to the bottom edge of the case. To turn the unit on and off, press the power button (or use the remote). Should you ever wish to unplug the Envy, first press the power button and wait a few seconds until the LED turns off.

- 3.3. **Check output resolution:** Some projectors and displays do not report their native resolution properly. For instance, JVC e-shift 4K projectors report a native resolution of 1080p instead of 3840x2160. And some native 4096x2160 projectors may report 3840x2160. To override this if necessary, press the top right button on the remote to quickly access the Display Configuration menu, and change to the desired resolution.

- 3.4. **Set your peak luminance:** For optimal results, the Envy needs to know your peak luminance. This is set in the Display Configuration menu. If using a scoped screen with the lens zoom method (no A-lens) set the “Peak luminance (scoped)” value to the peak nits when zoomed out for scoped movies. In either case, set the “Peak luminance 16:9” to the peak luminance when the lens is zoomed in for 16:9 content. To get your peak luminance, use a calibration software product to read your cd/m² value off the screen when displaying a full field 100% white pattern. Or measure your lux with a light meter and convert to cd/m². If unsure, ask us.

- 3.5. **Scope screen settings:** If using an A-lens or a scoped screen with fixed zoom for scoped movies, press the top right button on the remote and press the right arrow to reach the Screen Configuration Menu. Enter your anamorphic stretch factor (e.g. 1.25x) if using an A-lens, or if using the zoom method without an A-lens, turn Masking on, display 16:9 content, and adjust the Top and Bottom masking values so that the image fits within the height of your screen – this will enable the Envy’s automatic black bar detection. For users with scoped screens and no A-lens, this feature is very convenient, as it will automatically fit 16:9 content to your screen without cropping, while showing scoped content at full screen (especially great when switching back and forth from movies and a 16:9 movie selection / poster wall screen).

- 3.6. **Audio delay adjustment (if necessary):** If your AVR/AVP is set up for auto lip sync adjustment, Envy will automatically adjust the audio delay as needed. If you should find that you still need small adjustment despite using auto lip sync, you can do so in the Envy HDMI Configuration menu (Menu button, then right-arrow until you see this menu). If you are not using auto-lip sync, you will need to adjust your AVR/AVP accordingly. In which case note that the video processing in Envy adds roughly

175ms delay to the audio. Therefore, please adjust the audio delay in your audio processor accordingly (only if not using auto lip sync). If you have the movie Ready Player One, a great clip to adjust audio delay is the car race scene around the 10-minute mark of the movie. A flare that is launched in an arch-like fashion, with a whistling sound as it nears the ground, and then explodes like a firework. Likewise, many test discs have lip sync patterns. You likely will have to adjust the source for each of your audio processor's HDMI inputs.

3.7. Pass-thru port: Envy features a low latency pass-thru port perfect for low lag gaming. You can run an HDMI cable from this port directly to another input on your display. Or alternatively if you wish to have just one cable run to your display - you can use a device like the HD Fury Maestro and run a short cable from each Envy HDMI output (regular and pass-thru) to the Maestro, and then run the single main HDMI cable from your display to the Maestro. See Appendix A for the location of the pass-thru port.

3.8. Popular Envy Tweaks: The default settings in the Envy deliver an outstanding image. However, like adding toppings to an ice cream, you may wish to suit the settings to taste. Please play around in the Permanent and Temporary Settings to see what you like best. Popular tweaks include:

HDR Settings (first page in the Permanent and Temporary Settings menu): Highlight Recovery (try at "Insane"), Contrast Recovery (try at High), Shadow Detail Recovery (try various settings), Brightness Preference tweaks (raising this means you want the overall picture to be brighter but leaves less room for HDR highlights, and lowering this means you want the overall picture to be darker but leaves more room for HDR highlights).

Upscaling and Sharpening (also in the Permanent and Temporary Settings menu): Did you know that the Envy can add very tasteful, artifact-free and ringing-free sharpening, even to 4K sources? Try adding some Crisp Edges, Edge Enhancement and Detail Enhancement and see what you think!

More tips and tricks coming here, soon.

3.9. Show off your Envy! What fun would the Envy be without the ability to show yourself and others just why you bought the world's most advanced video processor in the first place? We are so proud of the power of the Envy and the huge benefit it provides that we added features exactly for this purpose. Here's how to use a few of them:

Dynamic Tone Mapping (green button): With HDR content, click the green button on your remote to toggle the Envy's DTM on and off. When toggled off, the Envy will turn off its DTM and output the content as HDR to your display, which will then turn on its own HDR tone mapping, so you can easily compare the difference. Be prepared for what you are about to see – behold the magic power of the Envy.

Highlight Recovery (blue button): With HDR content, click the blue button to toggle Highlight Recovery on and off. This comparison is best done with content paused on your screen. The differences will not be visible in all scenes and with all content, so you may have to play around to find the right scene to do the comparison with. Look for content that has bright highlights with texture detail and view that with this feature on and off. One example of a great scene to compare this is the bright yellow flower on the Spears and Munsil HDR Benchmark 4K Blu-ray demo disc. Also try this after choosing a higher strength Highlight Recovery setting in the Permanent and Temporary settings (have we mentioned there is an “insane” mode?).

Contrast Recovery (yellow button): With HDR content, click the yellow button to toggle Contrast Recovery on and off. You will find that with this feature on, the content has a considerable amount of added depth and perceived contrast. And with this feature off the image looks a bit murky, with a thin milky-like layer. Try this with Contrast Recovery set to High as well.

More tips and tricks to show off your Envy coming soon.

- 3.10. **Auto-updates:** Your Envy makes it very easy to install new versions of the Envy firmware with a simple click of your remote using the Firmware Configuration menu. To access the auto-update options, click the top-right button on your remote and press the left-arrow. The following describes the menu items in detail:

Current Firmware Version: This displays the firmware version currently in use. This information can also be found on the System Information menu.

Built Type: This option sets the minimum type of firmware you wish to be notified about. Options are: Stable Builds only, Release Candidates, Beta Builds, and Test Builds. For instance, if you select Beta Builds you will be notified about all firmware except Test Builds. With all the ongoing development we recommend Beta Builds for most users. Test Builds should be considered highly

experimental. When deemed by madVR Labs to be more stable, they are promoted to Beta Builds, and so forth up to Stable Builds.

Notification Type: When an update is available, a popup notification will be displayed according to your preferences. Options are Always, If Menu Is Open, and Never.

Install Firmware: To install a firmware version, move to the “Install Firmware” line and use the left/right arrows to select any version, then select OK, and Install. You can select any version, including past versions. This makes it easy to experiment with Test Builds or Beta Builds, for example, since you can always rollback the update just as easily. All updates are self-contained, so for instance if you are on 1.0.10 you can install 1.0.14 directly, without installing versions in between. Some updates may require that your Envy be powered off and then back on – if so, you will be prompted to do so.

Changelog: The changelog provides details about what new features, fixes and enhancements are included in the update selected in the Install Firmware line. You can browse through each versions changelog simply by highlight it in the Install Firmware selection.

- 3.11. **3D LUT Calibration:** The underlying madVR software in the Envy is designed to support LightSpace, ColourSpace, CalMAN, Chromapure, DisplayCal, HCFR, and Argyll CMS. If you are using CalMAN, contact us to request the Envy 3D LUT Calibration Guide for CalMAN. If using ColourSpace, contact us for important tips and tricks.

4. Troubleshooting

- 4.1. **Remote does not work:** Did you insert batteries? If wanting to use RF, make sure the black RF antenna dongle is installed in the USB port as shown in Appendix A. If RF is still not working, see Section 2.3 to ensure it is in RF mode. If so, try removing the antenna for 2 seconds and plug it right back into the same spot. If using IR, make sure the remote is in IR mode, and that the IR dongle in the *rear* of the unit has line of sight to your remote, or use an extension cable as described in Section 2.3. If neither of these helps, see item “b” below.
- 4.2. **Envy appears to be doing nothing:** Make sure you inserted the HDMI input into the bottom port as shown in Appendix A. If you installed it into the top port, that is the

pass-thru port, and Envy will not apply any processing and the remote will appear not to work.

- 4.3. **Envy is outputting 1080p instead of 4K:** Make sure you are not inadvertently pressing and holding the red button on the remote – doing so forces the Envy to output 1080p, which is useful in the event you ask it to output a resolution which your display does not support.
- 4.4. **Envy does not power on:** Check the power supply switch and make sure the “circle” side of the switch is up in the air (“line” is pressed down), as pictured in Appendix A.
- 4.5. **Green flashes:** You may notice a full screen green flash or two during HDMI signal changes / handshaking in some situations. In the Display Output mode use RGB if using YUV. Or if using YUV, choose Slow and Clean Handshakes in the Envy HDMI Configuration menu.
- 4.6. **Audio delay:** Envy adds audio delay as part of its processing. Please see Section 3.6 for information about setting the audio delay.
- 4.7. **Something else?** Please contact us at support@madvr.com

We hope you enjoy your Envy as much as we enjoyed making it for you! Thank you.

Appendix A – Envy Rear Panel Connections



Appendix B – Remote Control Guide

| Remote Button | Quick press | Press & hold |
|--------------------------------|---------------------------------|----------------------------------|
| Power (button 1) | Standby (F1) | Restart (SHIFT-F1) |
| Menu (button 2) | Configuration Menu (F2) | Test Patterns (SHIFT-F2) |
| Virtual Inputs (button 3) | 16:9 AR (F8) | Scoped AR (SHIFT-F8) |
| Settings (button 4) | Temporary Settings (F9) | Default Settings (SHIFT-F9) |
| "OK" (with no menus on screen) | Signal Information (F5) | Close Current Menu (ESC) |
| Red | Hotplug HDMI Input (F10) | Force 1080p60 Out (SHIFT-F10) |
| Green | Envy Tone Mapping On/Off (F11) | HDR Histogram On/Off (SHIFT-F11) |
| Blue | Highlight Recovery On/Off (F12) | Reset Debug Counters (SHIFT-F12) |
| Yellow | Contrast Recovery On/Off (W) | Show/Hide Debug Info (SHIFT-W) |



Appendix C –Ventilation

To help ensure the safe operation of the Envy and its longevity, it is important that you provide adequate ventilation in the area where it is used. The Envy draws cool air in from the right-side fans, and to a lesser extent, from the bottom of the unit. It is essential therefore that you leave the Envy plenty of room for ventilation on *all* sides:

- Please use the Envy only in a well-ventilated area. Avoid using it in a small enclosed space, in a cubby or other such three-sided enclosure, unless there is plenty of room for outside ventilation.
- Allow for several inches of clearance behind the unit.
- Allow for at least one inch of clearance above the unit. In a rack, leave at least 1 RU.
- Allow for at least one inch below the unit, and preferably, do not place the Envy on top of any equipment that expels hot air out its top.
- Allow for at least a few inches on the right and left sides of the unit.
- Never not place any objects or materials on top of the unit and ensure all vents are unobstructed.
- Envy should be used in its horizontal position, as laying it on its side could obstruct airflow from the side fans.