



madVR Envy

HDMI Cabling and Troubleshooting Guide

www.madvrenvy.com

Revision 2.0

1.0 Introduction

This document explains common pitfalls and issues that can lead to HDMI issues within an A/V system and includes troubleshooting steps to help with for a timely resolution for HDMI related issues. Please rest assured - HDMI issues are not Envy hardware related, and have always been solved by using proper cabling, properly configured compliant devices, and or special updates to the Envy firmware. Follow this guide to ensure a seamless experience with your Envy.

2.0 Prerequisites for Reliable HDMI

Please check the following requirements to make sure your HDMI cabling is ideally suited for use with the Envy. While it's easy to overlook the importance of these requirements, please give each items important consideration.

1. **Use only HDMI 18Gbps or 48Gbps “Premium Certified” HDMI cables.** Premium Certified cables have an official hologram logo and have passed HDMI formal testing. Cables certified as 8K should work fine. Note that we have seen cases where a 10K certified cable caused issues, so out of caution we recommend against using 10K cables at this time.
2. **Use only HDMI cables at least 6 feet (2m) in length.** Some integrators prefer to use short cables for interconnects in the rack to help keep things tidy. And perhaps counter-intuitive, cables shorter than 6 feet can result in too strong of a signal. For interconnects we recommend using high quality *cooper* cables.
3. **Please do not use active fiber cables from source devices** such as Apple TV, Blu-ray players, media players etc. – such devices often do not provide sufficient power for the cable.
4. **Use only active fiber HDMI cables for any runs over 25 feet which come pre-terminated.** We highly recommend using active fiber HDMI cables for long lengths that are pre-terminated at the factory (and not running your own fiber and terminating it yourself). We do not recommend using HDBaseT solutions such as HDMI over CAT6 with baluns. This can lead to intermittent or other signal issues. Keystones and Punch-downs can cause a high probability of failure in some installations. And further, these cables cannot handle the transmission of Envy's upscaled 5K and 8K resolutions (which will require HDBaseT 3.0 later).
5. **Make sure that any directional cable is installed in the right direction.** Active fiber HDMI cables are directional, meaning that there is a designated Source end, and a designated Display end. Please make sure that the Source end is connected to your AVR, sources or HDMI switch that feeds the Envy. And the Display end should be connected into the Envy port labeled “Input”.
6. **If using an active fiber cable, make sure that you are following the vendor's recommended power requirements.** For example, in some cases the vendor may recommend (in some cases based on the cable length) adding power to just the source end (AVR) of the cable, or just the display end (Envy), or it may not matter which end it is added to, just as long as it is not added to both ends, etc. Also, when adding power, only use the vendor supplied power device!

For instance, if using Tributaries cables, you *must* use the vendor supplied power block. Using an alternative like an iPhone USB charging block will cause HDMI stability issues. Using non-standard power devices such as this can cause issues with many other cable brands as well.

7. **Make sure that all cables are plugged in tight and firmly seated.** To be sure, remove the cable and plug it back in.
8. **Make sure that the HDMI cables are plugged into the right Envy ports.** The AVR or HDMI switch should be plugged into the Envy port labeled Input, and the display/projector should be plugged into the port labeled Output.
9. **If using a JVC laser projector, please be sure to update the JVC firmware to version 3.0 or later.** There are known HDMI issues with JVC firmware prior to this version.
10. If you are receiving a warning from the Envy that the display **does not support HDCP 2.2**, and you are sure it does, then the problem is most likely due to the cable, particularly if it is an active fiber cable. See section 3.2 for more information.
11. For the best results, please make sure to **use Envy firmware 1.8.0.0 or later**. You may need to choose Experimental or Beta Builds to access this version. If using versions prior to 1.5.5.0, do not plug any cable into the Envy HDMI pass-thru port or it can lead to No Signal situations (resolved with 1.5.5.0 and later).

3.0 HDMI Troubleshooting

Before beginning any troubleshooting, try or consider all the following:

1. Please be sure to update your Envy to the latest “Experimental” firmware and see if that solves it. Likewise, you can try rolling back to earlier Envy firmware versions.
2. If you are using dual outputs from your AVR, with one going to the Envy, and one going to another display, remove the one going to the display, so that only the Envy is connected to the AVR. Does this solve the problem?
3. If the issue only occurs when using the Kaleidescape (with some or all content), and your Envy was built before September 2021, you may need a special update to the FPGA on the Envy’s HDMI card. This must be performed remotely by a madVR Labs technician. Please contact support@madvr.com and include your serial number and a full description of the issue (see Section 4.0).
4. If the installation that had been working fine before, please consider what, if anything, changed since the issue started. For example, knowing the issue started after installing new cables or a new source device can provide a big clue. You can also try restoring from older Envy settings.

Also, it is a good idea to try temporarily bypassing other devices in the chain, such as switcher, AVRs, HDMI “doctors”, etc.

5. Make sure that all HDMI cables are plugged into the right slots:
 - A. Make sure that the HDMI cable running from your Envy to the display is plugged into the Envy HDMI port labeled “Output”, and NOT into the “PASS” port, or any unlabeled HDMI port on the back of the Envy, such as the one on the I/O socket near all the other motherboard connectors and USB ports.
 - B. Make sure that the HDMI cable coming from the AVR/AVP or other such media sources is plugged into the Envy HDMI port labeled “INPUT”.
 - C. Note: The HDMI port labeled “PASS” is a zero-latency pass through port. Only use this port if you wish to bypass the Envy. When connected to this port, the display will see unprocessed output from the Envy. The Envy menus will not display at all when this port is used, because the Envy is entirely bypassed when using this port.
6. **Determine if the problem is on the input vs output side of Envy.** This will then drive the rest of the troubleshooting efforts, accordingly:
 - A. Bring up any Envy menu using its remote control and keep the menu on the screen.
 - B. Reproduce the issue. During the HDMI issue, does the Envy menu display on the screen? If so, the issue is on the **input** side. If the Envy menu disappears when the HDMI issue occurs, or the menu doesn’t display correctly, the issue is on the **output** side.
 - C. If the issue cannot be easily reproduced, it is not realistic to keep the Envy menu on the screen for hours or days while watching content, waiting for the issue to occur. In that case, wait for the issue to occur, such as a situation where there is no signal. Then try to bring up an Envy menu. If the menu displays, the issue is on the input side. Otherwise, it is on the output side.

3.1 Troubleshooting HDMI Problems on the INPUT Side

If you have determined the issues are on the input side, follow these troubleshooting steps:

1. Make sure you meet and followed the Prerequisites for Reliable HDMI Handshaking listed at the start of this guide. If not, your issue could very well be caused by not meeting these requirements, even if that seems unlikely.
2. Connect the source device directly to the Envy Input HDMI port. Does everything then work reliably? If so, it suggests the issue may be with your AVR or HDMI switch, or with one of the cables that is now bypassed. Likewise, if you have any devices or extenders in between your AVR

or HDMI switcher and the Envy, such as an HDMI “doctor”, please remove such devices and retest. Switch the cable back to the AVR or HDMI switch and continue with the steps below, which may help you further isolate the problem. If the problem persists when running the cable from the source device directly into Envy, please triple-check your cable, and then follow the steps in Appendix A and disregard the remaining steps below.

3. Make sure you are using an AVR output that is configured to pass HDMI 2.0 18 Gbps. Some AVRs like Denon or Marantz must be specifically set in their menus to “HDMI Enhanced”. Some high-end AVRs/AVPs may have one port that outputs at that bandwidth and a second port that does not – so please ensure you are using the correct HDMI output from the AVR/AVP.
4. Make sure that none of your HDMI devices, HDMI distribution system, or switches is performing *any* video processing and that any EDID management functions are disabled! Devices that perform EDID functions can commonly cause issues like HDMI intermittent dropouts, failure for Envy to receive an HDR signal when expected or can cause Envy to receive the wrong frame rate or resolution as its incoming signal. As a test, try removing such devices temporarily.
5. By default, the Envy EDID tells devices downstream that it supports the full 18 Gbps bandwidth (4K 60 444 HDR). Your cable may not have the required bandwidth to support this. This is likely different than what your AVR or other downstream components see when Envy is not in the chain and can explain situations where there is only a HDMI issue when the Envy is in the chain.

For example, you might find that the system works perfectly fine without the Envy in the chain, but you have the HDMI issue as soon as you put Envy into the chain. This may lead to the false assumption that the problem must be with the Envy, when actually there are many reasons why a cable can fail with Envy in the chain (cable is good enough when not using an Envy), but not with Envy in the chain (cable cannot carry sufficient bandwidth when used with an Envy).

For example, by default Envy outputs RGB 12bit, which has a higher bandwidth than RGB 8bit or YCbCr 4:2:2 12bit that your system will likely use when Envy is not in the chain. Another example is that a cable may work fine at 4K without an Envy in the chain, but fail with Envy outputting 5K.

If your cable cannot support the full 18 Gbps, this can lead to intermittent or total dropouts. As a test, go to the Envy HDMI Configuration Menu, and change the EDID INPUT Override (not to be confused with the OUTPUT override) to 9 Gbps, then restart the Envy. Is the problem resolved? If so, it points to an issue with your cable, even if it is 18 Gbps certified (sometimes cables cannot meet the full spec, and sometimes cables go bad). After finishing with this test, return the setting to Auto/Pass-thru.

6. Try replacing your interconnect cables with brand new HDMI cables (following the cable guidelines at the start of this document) to see if that helps. You can start with the cable between one source device and the AVR, and the AVR and Envy. If that resolves the issue, replace the other cables as well.
7. If Envy displays No Signal, try pressing the Red Envy remote button to send a HDMI Hotplug. Does the image come back after this? This is not a solution, but important information to pass along to us, and in some cases can be a convenient way to easily restore the HDMI signal.

8. If after all these steps the problem persists, and especially if the issue is happening only when using a Kaleidescape, try placing a HDFury Vertex, Vertex 2 or Arcana between the Kaleidescape and AVR. Or you might be able to accomplish the same thing using any smart 2x1 or 4x1 switch that performs an HDMI sync when in use. Make sure the HDMI device has all EDID management and scaling features turned off. Does inserting this device between the Kaleidescape and AVR solve the issue?
9. If none of these steps have helped you resolve the issue, please capture HDMI troubleshooting logs by *carefully* following the instructions in Appendix A. Then contact support@madvr.com and describe the exact circumstances.

3.2 Troubleshooting HDMI Problems on the OUTPUT Side

If you have determined the issues are on the output side, follow these troubleshooting steps:

1. Make sure you meet and followed the Prerequisites for Reliable HDMI Handshaking listed at the start of this guide. If not, your issue could very well be caused by not meeting these requirements, even if that seems unlikely. Unlike HDMI issues on the input side, **issues on the OUTPUT side of the Envy are almost always caused by the cable between the Envy and display...**
2. The fastest way to test and resolve an issue on the output side is to **temporarily replace the cable** with a brand-new HDMI cable certified as specified in Section 2.0. We understand that this can be troublesome, especially when it is difficult to run a new cable between the rack and the projector. In that case we recommend obtaining a new cable that is long enough for you to safely drape it across the floor, so that you can test a new cable without the time and trouble to run a new cable. If the new cable works, then although it may be a big challenge to replace it permanently, you at least have your answer and can plan accordingly.
3. If it is not possible to replace the cable even temporarily per #2, then temporarily relocate the Envy close enough to the display to test with a passive HDMI cable no longer than 4 meters. We recognize that relocating the Envy is usually not a viable permanent option, however the purpose of this test is solely to determine whether the cable is the issue.
4. If it is determined that the cable is at fault, and it is not possible to replace the cable, you can **try inserting an active HDMI switch** (using just one input and output), such as one from AVPro Edge or Pixelgen, in front of the display. The switch may clean up the signal and permanently solve the issue, as we have seen work in such cases.
5. If it is not possible to permanently replace the cable or add a switch, you may be able to get a reliable signal by using 9 Gbps output bandwidth in the Envy, with little loss in picture quality, and only for 4K 60 HDR content. Not the ideal solution, but in a pinch, this may solve that you need. To do this, in the Envy HDMI Configuration menu, change the EDID OUTPUT override (not to be confused with the INPUT override) to 9 Gbps, as follows:

- a) Navigate to the HDMI Configuration menu, b) At the bottom of the menu, select Base Configuration. This step is critical.
 - b) Under the HDMI Output -> EDID Override, select 4K HDR 9 Gbps. Please do not confuse this setting with the HDMI Input -> EDID setting, also in this same menu.
 - c) Power cycle or restart the Envy. This is critical, as EDID changes do not take place until the Envy is restarted.
6. If none of the above helps, to check whether the display could somehow be the culprit or a contributing cause (rather than the cable). To do this, connect the Envy HDMI output to a 1080P or 4K TV (if none is available, a PC monitor that is HDCP 2.2 complaint can be used instead). If the problem persists, try different HDMI cables between the Envy and TV. Although this will not solve the issue at hand with your primary display, it may provide the insight needed to further troubleshoot the issue.
 7. As a best practice, please only change one thing at a time in each test. For instance, do not change more than one cable, setting, source device, signal path, or any combination thereof at a time. Otherwise, it makes it much more challenging to identify the root cause.
 8. If none of these steps help, email support@madvr.com and describe in detail the issue, and the exact steps you have taken for troubleshooting. Please do not submit an HDMI log per Appendix A, which is helpful primarily for HDMI INPUT side issues.

4.0 How to File a Great Support Case – Help Us Help You

If you have exhausted all these troubleshooting steps, we are happy to help you try and resolve the issue quickly. To do so, however, we will need very detailed information from you. Please be sure that with any HDMI reported issue that you include *all* the following details:

- 8.1. What exactly is the issue? Please be very specific. For example, “The picture goes out” is a start. But here are some examples that help more: “The picture goes black. Envy says No Signal in the top left corner of the screen” or “The picture goes black. Envy does not show No Signal, and but the projector shows it has no signal” are examples of details that help us better understand the issue.” or “The picture goes black for 2 seconds, then comes back, then it is fine for several minutes, but then happens again, and the cycle repeats. When the picture goes black, the Envy menu also disappears and then comes back with the picture”.
- 8.2. What is the source device/player that is being used at the time the issue happens (e.g., Apple TV, Kaleidescape, Roku)? If the device supports multiple apps, such as the Apple TV, does the issue happen only in one particular app (e.g., Netflix or HBO Max)? Does this issue ever occur when using any other source devices? Does the issue seem specific to a particular signal format (e.g., 1080P or 4K60 etc.)?

- 8.3. What is the make/model of the AVR? Are there any HDMI devices between the AVR/switch and the Envy? Or between the Envy and the projector? If so, what make/model and what is its purpose? Have you tried removing those?
- 8.4. What is the make/model of the display or projector? What type of cables (make and brand) and length is used to connect the source devices to the AVR/switch, to connect the AVR/switch to the Envy, and to connect the Envy to the display/projector? Is there any HDMI over CAT 6 or balun/extenders in use?
- 8.5. How often does the issue occur? All the time, usually once during a movie, maybe once a week, etc.
- 8.6. How long has this Envy installation been in place? Did you just install it, and have had the problem from the start? Or has Envy been installed for a while, and for how long, and the issue has just started recently? Did you change any cables or make any changes to your A/V gear or any settings changes to Envy or the other gear? What changes, if any, have been made recently?
- 8.7. What steps if any can be used to reproduce it or seem to make the issue more likely to occur?
- 8.8. Is the issue on the Input or Output side of the Envy? See Section 3.0 to determine this.
- 8.9. What exact troubleshooting steps have you taken in this guide and/or otherwise? What if anything made a difference or partial difference?

Appendix A

How to Capture HDMI Logs for INPUT Side Issue

This section explains how to capture and automatically submit to us HDMI logs, once you have determined the issue is on the input side of the Envy (see HDMI Troubleshooting section). **Please do not submit logs for issues determined to be on the OUTPUT side of Envy.** As this type of log is for INPUT side issues only.

Important: For these steps, please pick **one**, and only one, very specific issue and scenario for us to troubleshoot for now. For instance, if you have problem x with the Xbox when doing abc, and problem y with the Xbox when doing def, and problem z with the Apple TV when doing 1234, please pick only one of those scenarios for this testing and collect logs only for that.

Please do not collect logs for multiple problems or multiple scenarios for the same problem. That will make troubleshooting much slower and unproductive. After progress is made on the first issue, then we will be happy to look any additional issues/scenarios. If you have multiple issues/scenarios, the best one to start with is the one that is most problematic for you. And usually, the best issue to start with is also the one that is easiest for you to reproduce, to make the best use of your time.

Once you have decided on the specific issue/scenario you would like to focus on, please follow these exact steps:

1. Go to the Envy Firmware Configuration Menu, choose Test Build, and select the latest firmware, and at least 1.2.2.1 or later, and install it. This is required, as the older versions do not have the full logging capabilities this version offers.
2. Go to the Envy HDMI Configuration Menu and press the Red button while "HDMI Configuration" in the title bar is highlighted. This will open more menu options on that page.
3. Highlight the option that appears for "Logging" and turn it On. Then Save to Base (press Green).
4. Follow whatever steps are needed to reproduce the one specific issue/scenario. If it is an intermittent issue, it is perfectly fine if you try x times and can't reproduce it, and then finally reproduce it. You do not need to worry about clearing the old logs before each try.
5. As soon as possible after reproducing the issue, go back to the Logging menu item (from step 3) and highlight the Logging line. Then press Yellow and please wait while it compresses and sends the logs automatically to us. After submitting the log to us, it is automatically cleared on your system. If you wish to send a smaller log, which can sometimes make it easier for our HDMI engineer to troubleshoot, you can clear the logs before attempting to reproduce the issue. To do this, highlight the Logging line and press the Red button. It is important to send the logs as quickly as possible after reproducing an issue, so that our HDMI engineer can most easily find the problem (by looking for issues near the end of the log file). Also, the logs rollover after several minutes, so if you wait too long, the useful logging data may be overwritten.

6. Once the logs are compressed and sent, a message will appear on the screen that says the logs were uploaded successfully. It will include a log ID number, like e23b5. Please note this ID as you cannot get the ID again once you clear the message.
7. Please send your dealer an email that contains a description of the problem you reproduced, the steps used to reproduce it, whether the issue is intermittent or always happens, and if intermittent, how often it occurs. An example of a good error report is: "I'm having a problem with [describe problem in detail]. It only happens when/if I do xyz and such and so is happening. The problem happens always/sometimes under those conditions. I captured logs and the ID is e23b5." Your dealer will pass your problem report and Log ID onto us. The dealer will not need to do anything to get us the logs, as they are submitted directly to us by your Envy when you perform step 5.
8. After you send the logs, they are automatically cleared. Please keep the Logging turned On, so that you can easily capture logs in the future. Especially if the problem is hard to reproduce, you can leave the logs running always, and then send the logs once the issue occurs. If you want to send more logs, send an email that says what's different about the new log and if it should replace a previous log (like "Please ignore log IDs 12345 and 34567 and instead look at log ID 76543" or "I also managed to capture the situation where (different outcome is captured) in log ID 23451". Please do not submit multiple logs for the same test scenario and outcome, or if you do by accident, let us know which ones to ignore and which one to focus on.