The HDMI Handshake

HDMI is now the main type of connection used in home theater setups that include HDTVs, video projectors, Blu-ray Disc players, home theater receivers, network media players, and even cable/satellite boxes. One purpose of HDMI is to simplify connecting all your components together by using one cable for both audio and video.

However, there is another purpose, copyright-protection (known as HDCP). High-bandwidth Digital Copyright Protection requires that all HDMI connected components be able to recognize and communicate with each other. This is referred to as establishing an "HDMI handshake". If the "handshake" doesn't work or HDCP compliance is not met, the HDCP encryption that is embedded in the HDMI signal is not being recognized properly by one, or more, of the connected components. This most often results in not being able to see anything on the display or a pink hue across the entire image.

HDMI Troubleshooting Tips

1. **Check Your HDMI Cable Connections**: HDMI connections don't fit as tight as component or composite video connections and can slip out sometimes if equipment is moved slightly. Please ensure that all HDMI connections are seated firmly and in the correct orientation of their corresponding HDMI ports.

2. **Try a Different Power Up Sequence for Your Components**: In other words, if you have a habit of turning on your TV first, then your Blu-ray Disc player, or other HDMI source component, try the reverse power up sequence and see if that works.

Also, if you have a Blu-ray Disc player, or other component, connected through a home theater receiver and then to the TV – try different startup combinations and see if that works. If you find a sequence that works, remember it. Of course, make sure when everything is turned on, and that you have selected the correct input on your TV that the Blu-ray Disc player, or other source component, is connected to.

However, if changing the power up sequence of your TV and connected components doesn't seem to do the trick, with both the TV and source component on, just try switching to another input on the TV and then switch back to HDMI input and to see if the signal locks in correctly.

3. **Check Your Source Device's Video Resolution & Refresh Rate Output Setting:** If your Blu-ray Disc player or other HDMI source device has a video resolution output setting menu, check to see if it is set to AUTO. If so, reset it to match the native resolution of your TV or video projector (such as 720por 1080p) and see if that provides a more stable result. If your source device has the option for adjusting the refresh rate of the output signal, ensure that your source device is outputting a refresh rate supported by your display (30Hz or 60Hz).

4.   **Use the Process of Elimination**: If you have a Blu-ray Disc player (or other HDMI source) connected through a home theater receiver to a TV and you still don't get anything to show up your TV screen regardless of the power up sequence you try, use the process of elimination. Connect the Blu-ray Disc (or other HDMI source) directly to the TV. This bypasses the home theater receiver. See if that does the trick. If so, the home theater receiver, or the HDMI source component/home theater receiver combination is most likely the culprit.

What you can do now is keep the HDMI source connected directly to your TV and then make a separate audio connection from your source device (such as a Blu-ray Disc player) to your home theater receiver. This is not necessarily the most efficient connection method, but you can still use the separate video and audio connection workaround as the best option for the time being, or as a permanent solution if you prefer.

On the other hand, if you find that none of the above solutions work or work consistently – check to see if there are any announced firmware updates for your HDMI source and home theater receiver (or even your TV) that may resolve this issue. Also check to see there have been complaints filed or posted by other users regarding HDMI handshake issues with your components.

Connecting Your PC/Laptop to a TV Using HDMI

With more consumers using their PC or Laptop as a home theater source component, problems can arise when trying to connect an HDMI-equipped PC/Laptop to an HDMI-equipped TV. First, make sure that you go into your PC/Laptop settings and designate HDMI as the default output connection for both video and audio. If you can't get an image from your laptop to show up on your TV screen, try the following:

1.   Try booting up your PC/Laptop with the HDMI cable connected to a TV that is on.

2.   You can try booting up the PC/Laptop while the TV is off and then turn on the TV.

3.   If the above options don't work, try booting up the PC/Laptop first, and, with the TV on, connect the HDMI cable to both the PC/Laptop and TV.

4.   Ensure that your PC's output resolution and refresh rate are supported by your display (1920 x 1080, 60Hz is a good starting point)

5.   Verify your display mode. "Windows Key + 'P' key" will cycle through your different display modes. Try duplicate mode to mirror your pc monitor or extended mode to treat your TV as a second display.

Final Take

In the vast majority of cases, you won't encounter any problems that are the fault of HDMI connections. However, there are instances where you can run into a problem. If you do, don't panic, before you make any phone calls, or pack everything up and return to the store upset, try the above suggestions. If none of these solutions work, then proceed to contact the J-Tech Digital Support Team. Only after exhausting all of the options you can try yourself should you call a tech or return to the store.

For further troubleshooting and to better understand how your equipment is behaving, consider using these helpful J-Tech Digital tools. *(Original Article by Robert Silva)*

J-Tech Digital JTECH-EDIDM4 4K EDID Emulator

If you're able to get a video signal from your source device to your display, but is the incorrect resolution, consider using the JTECH-EDIDM4 EDID emulator. The EDIDM4 connects between your source device and display. The EDIDM4 will provide your source device customized EDID information (resolution & refresh rate) so that you may optimize the signal to your display. Please note that your HDMI cabling and connected devices will need to support your desired resolution and refresh rate.

J-Tech Digital JTECH-18GA HDMI 2.0 Signal Generator & Analyzer

Can't figure out exactly why your setup isn't working? Narrow down the possible culprits with the JTECH-18GA signal generator. Generate an HDMI AV signal with custom resolution, refresh rates, HDR setting and color modes. A great tool for determining your devices capabilities and diagnosing system issues.