Digital Detective HDMI® Installation Help

Are you having a problem getting your HDMI systems to work properly? Liberty is dedicated to helping you be successful. After working with a variety of installations and trouble calls, we found that most of the problems can be resolved by following a few rules. Follow the published guidelines below, and you will be on your way.

Guidelines for Successful HDMI Installations

With HDMI there is always the potential for a handshake issue. The technology for the handshake is similar to plug-and-play. There is a reason it was nicknamed plug-and-pray! These issues can be minimized by:

1.) Stabilize your system settings:
   a) Use displays with the same resolution (e.g. 1080p). Even better, use displays from the same manufacturer.
   b) Set color depth on all sources to match. (e.g. 8 bit)
   c) Set encoding on sources to match (e.g. Monitor (RGB) as opposed to Television (YPbPr)).
   d) Set resolution on all sources to match (e.g. 1080p)
   e) Note that if you force the resolution to a set frequency it must be displayable by all displays in the system. E.g. a 1080p source will not display on a 720p display. The system can only perform at the level of the poorest display in the system.
   f) Set color depth on scalers / receivers to match. (e.g. 8 bit)
   g) Set encoding on scalers / receivers to match (e.g. Monitor (RGB) as opposed to Television (YPbPr)).
   h) Set resolution on scalers / receivers to match (e.g. 1080p)
   i) Important installations techniques:
      I. During setup, do not hot patch the cables.
      II. Power up/down from the power switch instead of the plug.
      III. Minimize "daisy-chained" electronics. No more then 3 HDMI devices should be in a loop excluding source and display.
      IV. Test the system at your shop prior to installation at the customer site so that you troubleshoot without the customer looking over your shoulder and on your own schedule.
      V. Plug everything in prior to power up.
   j) Start power-up from the display back to the source. E.g. display, extender, receiver, source. This sequence itself will cure many issues.
   k) Use shortest HDMI cables possible, especially between devices and extenders.

2.) Other important considerations:
   a) The progression of specification updates has lead to equipment interoperability issues in the field. When mixing versions not all HDMI features may be available.
   b) The majority of returned extenders and repeaters are found to be perfectly good. We find many of the issues that cause these returns are resolved by following the rules above.
   c) Because some devices have EDID memory, once the memory has been screwed up by hot-patching or some other error above, it can be very difficult to get it back in line. Solutions depend on the product in question.
   d) The results of most failures are the same: No picture. This makes troubleshooting very difficult. You can’t tell if you are dealing with operation headspace, connector issues, cable issues or equipment failure. Usually it is not the latter.
   e) $100 cable testers simply test continuity. They do not test the ability to transmit a high frequency signal.
   f) If there is a problem, start with the most basic system and add components one at a time. Start by forcing the signal to a low resolution (720p) to see if that resolves the issues. Once you get it to work it will probably be very forgiving...
   g) When in doubt, shut down the entire system and restart according to the sequence above.
Liberty Wire and Cable Equipment Specific Tips and Suggestions

DL-HDCAT, DL-HDCAT-WP, and DL-HDCAT-INT tips

1) Category cable extenders are susceptible to issues from EMI such as cell phones so it would be wise to avoid them on longer runs. Be extremely careful routing them near motors, florescent lights, high current magnetic fields etc. The use of shielded cables will alleviate these issues.

2) Be gentle with the wire. The frequencies involved are up to 20x the frequencies typical in a computer network. A kink in a cable can cause internal damage that is not visible from the outside but will prevent successful transmission of the signals at high frequencies. If you are having issues try swapping the #1 cable with the #2 cable. It is possible that just #1 was damaged and since all the high frequencies are on #1, the problem will go away.

3) CAT6 works better than CAT5e cable. 2 cables are required.

4) Shielded cables work better than non-shielded, however the shield must be attached to a ground to be effective. Ensure you use shielded connectors with shielded cable.

5) All 8 wires are required for HDMI extenders (only 4 are required for 100BaseT network connections) so just because it works for the network, it may not work for HDMI. Test the cable to Gigabit Ethernet standards to make sure all conductors are tested.

6) Do not run category cables for HDMI extenders through a network patch panel.

7) Make sure cables are similar in length. They need to be exactly the same length (within 3-inches).

DL-HDFO tips

1) Use the shortest HDMI cables possible between the source and transmitter and between the receiver and the display. 2 meters is the maximum recommended length.

2) Note that the sequence of the Fiber cable connection on the receiver is 2, 1 and 4, 3. NOT 1234. Make sure it is properly connected. Not all fibers are connected identically and this device will not work if fibers are in the wrong sequence.

3) The previous revision of this product required Category Cable for EDID, HDCP, and Power. Category 6 will be better then Category 5e and ensure both ends are wired identically (568B or 568A)

4) It is recommended to pull more fibers then required when possible for redundancy and future proofing.
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DL-HDCX tips

1) Do not use this product with RGBHV switching. The DL-HDCX uses the 4/5 coax cables in a bidirectional mode; also the frequencies are much higher than most analog electronics can manage. Both make it impossible to use an RGBHV switcher.

2) Use an HDMI matrix switcher such as our DL-HDMxx to manage the signals. These are available up to 36x36 HDMI ports.

3) Liberty has tested this device with the DirecTv HR21, HR20 and AppleTv with excellent results. We’ve also tested with Sony BluRay, Sony PS3, Samsung, Toshiba, LG, Panasonic and PCs. Displays that have been tested include multiple models from Sony, LG, Samsung, Toshiba and Gateway. It is probably compatible with your equipment.

4) Do not use adapters in series with this product, VGA adapters generally contain 3 coax and twisted pairs for the sync and will not work. ONLY use BNC connectors with this product—RCA adapters will cause a failure.

5) Make sure that all connectors are properly installed. Failure of even one of the wires will result in no picture.

6) The choice of cabling is very important; this product sends a digital signal and requires a high frequency digital compliant cable. CATV Quad and Dual shield cable cannot support this signal. Use of a SDI or SMPTE certified cable is recommended. Mini HiRes cable will have a reduced length.

7) The power connector (Yellow) can be used as a continuity tester. Disconnect all other cables before the test. Use the power LED as an indicator on each coaxial leg when testing.

8) The color code on the device is simply for consistency of connection. It does not mean that if you disconnect the red wire you will be a yellow image. You will probably get no image. The unit splits the HDMI signal into four equal parts without regard to the data in the signal stream.

DL-HDMxx tips

1) Use displays with the same resolution (e.g. 1080p /60). Even better, the same manufacturer.

2) Do not use auto resolution. Force the settings to:
   a) A common resolution to something common to all displays such as 1080p/60.
   b) Color depth (e.g. 8 bit)
   c) Encoding (e.g. Monitor (RGB) as opposed to Television (YPbPr).
   d) Set EDID according to the equipment manual.
Still have a problem?

If you still have issues, we need to know what you know about your system and the problems you are experiencing. Please communicate the following information and let us know when the best time would be to contact you while you are at the jobsite.

Here is what we need:

1) Contact information
   a) Technical contact (if not the person who called)
   b) Customer
   c) Best method to contact, phone, e-mail etc.
   d) Date/time
   e) Best time to call you

2) Project Information
   a) Project name
   b) Liberty products on project
      c) Date of order or Liberty order number(s) for the Liberty products.

3) Equipment list of everything in system, require Brand and Model numbers.

4) List any other extenders, repeaters, switches and DA’s Brand and Model numbers.

5) HDMI cables, length, manufacturer and model #

6) Extender cables, manufacturer brand (Category, Fiber, or RGB)

7) Any introduced connectors, manufacturer and part number.

8) Ideally a system drawing of the installation.

Liberty Tech Support follows up and determines that above steps have been taken.

Additionally:
1. LWC may research unusual system components or system designs.
2. Contacts manufacturers for further information.
3. Suggests alternative system designs that may resolve problems.
4. Replaces defective equipment
5. Communicates with your account rep what steps were taken to resolve the problem.

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