This list of Best Practices is recommended for all HDMI products. Following these recommendations will ensure the best performance for the system, and will help prevent installation issues.

Design Considerations

☐ Standardize your cabling method with colors or tags.

- Be consistent with cabling bundles to each room, tie them together before they recess into the wall or ceiling.

☐ Limit the number of tiers in your HDMI network.

- Do not attempt to use two 4x4 matrix products rather than one 8x8 matrix. Additional splitters, matrices, and extenders between the source devices and the display decrease signal quality.

☐ Use an HDMI input other than the HDMI / DVI port when possible.

☐ Be aware of bandwidth and feature limitations of HDMI cables.

- Check the Binary™ HDMI Features Guide.

☐ Be aware that both HDBaseT Extenders and Matrices support 1080p@60Hz video resolutions at their specified distances. 4k2k@30Hz resolution is supported by HDBaseT Extenders only at their specified distances. Matrices do not support 4k2k@30Hz resolution.

Wiring & Termination

☐ Terminate RJ45 connections using the EIA 568B standard.

- Use 568B for HDMI transmission as recommended by most major video transmission manufacturers to lessen video sync issues at longer lengths.
- Follow termination standard printed on the jacket of the category cable itself.

☐ Take proactive steps to account for potential difficulties designing, predicting, and troubleshooting ESD problems.

- Use shielded CAT5e/CAT6 and shielded RJ45 connectors, as strongly recommended.
- Be aware unshielded or improperly terminated cables are susceptible to video dropout problems from ceiling fans, arc-fault circuit breakers used in new construction, and other EMI sources.
- Use shielded connectors with drains connected at both ends for proper shielding.

☐ Validate all termination points for continuity and bandwidth when possible.

- Use an RJ-45 Test Meter: Include Pair/Continuity/Tone preferably with cable length testing capability.

☐ Keep termination points to a minimum.

- Limit termination points to a minimum, more termination points equals more opportunity for error.

☐ Leave extra cable at each end of CAT5e/CAT6 runs, don't exceed the maximum length. This ensures terminations will not have to be added to the run if the cable is damaged or needs to be longer.

☐ Use a single, continuous category cable drop when extending HDMI with 1CAT/2CAT technology.

☐ Be aware HDBaseT technology specifications require stranded category patch cables to be 5m (16.4ft) or less.

- Limit keystone punch downs to no more than two when necessary.

☐ Use shielded patch cables and keystones/couplers to make shielded cable fully effective.

☐ Use closed-ended, crimped connectors. EZ or pass-through style connectors can easily be wiggled loose, causing a short or improper connection.

Resolution Configuration

☐ Be aware EDID management is specific to each source, not the displays.

☐ Use embedded EDIDs and turn off Deep Color at the source component(s) before learning the EDID.

☐ Force the source to a single output resolution - 1080p, 720p, etc., when possible.

- Set the Deep Color to 8bit per color (24bit total). Allowing it to auto-detect higher resolutions can cause issues if the system design can't support it.

☐ Select the highest common EDID from the lowest performing display/zone in the system when configuring EDID settings. For example, if you have one display in the system that does not accept a 1080p video format you will need to select a 1080i EDID. This is also true when you are using a surround system. If you have displays that cannot decode a 5.1 audio codec you will need to set the EDID to 2ch stereo.

HDMI Network

- Disable all CEC (HDMI Control) features.
  - Be aware that communication over CEC can cause a rift with other communications over the HDMI network, specifically with control systems, leaving them inoperable.
- Check for video scaler settings in all Sources, Audio Video Receivers, and Displays.
  - Ensure each scaling option is turned off, or set to a fixed resolution when troubleshooting. It is not recommended to use an "Auto" setting for video scaling.
- Confirm that you have the most current firmware on all sources, matrices, extenders, audio/video receivers, and displays.
  - Check with the manufacturer and confirm that there isn't a firmware that is manually updated with USB or a Serial connection. These firmware updates are generally a major update and not available via the network update feature.

- Set each source to a single resolution to minimize switch times.
- Use active cables if HDMI lengths exceed 7.5m (25ft.)
  - Use active cables for point-to-point applications only.
- Use HDMI extenders if using active cables beyond 30m (100ft.).
- Use 1m (~3ft.) or shorter HDMI interconnect cables between any device and the input or output HDMI port of an HDMI/HDBaseT extender.
- Be aware some sources (HDMI 1.3a and older) do not support a feature known as "Clock Stretching" and will need to pass through a device that supports Clock Stretching, such as a B-220-HDSPLTR, in order to pass signals over HDBaseT links.
- Use the HDMI Tester: Binary™ HDMI Digital Cable Continuity Tester with LED Readout (for HDMI cables only, not through extenders).

Troubleshooting Tips

- Reduce the system to the most basic setup, removing all variables.
- Be methodical; only change one item at a time.
- Connect one item at a time and test before moving to the next item.

- Contact Technical support for further assistance.
  - Phone: 866-838-5052
  - Hours: M-F 8am - 8pm EST