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JBL Synthesis SDP-75 HDMI Capabilities and Input Configuration

At JBL Synthesis, we understand the rapidly evolving and advancing nature of HDMI technology, and the compatibility questions that may arise as a result. With that in mind, we've developed this white paper to share additional pertinent details with our valued customers. If after reading this document you continue to have questions, the knowledgeable field engineers at CSupport@harman.com can help.

ALL commercially available formats can be properly passed by the SDP-75:

- 4K-24/30 Hz, 4.4.4, 8-12 Bit
- 4K-24/30 Hz, 4.2.2, 8-12 Bit
- 4K-50/60 Hz, 4.4.4, 8-Bit
- 4K-50/60 Hz, 4.2.2, 8-12 Bit
- 4K-50/60 Hz, 4.2.0, 8-12 Bit
- Support for BT.2020 color space, at all above resolutions
- Support for HDR-10, including "UHD Premium" designated content

Four HDMI inputs are HDMI 2.0b and HDCP 2.2 compliant, 18Gbps (aka 6G, 600MHz) (Inputs 4-7)

Three HDMI inputs are currently programmed as HDMI 1.4a for compatibility with non-compliant legacy sources. (Inputs 1-3)

In addition to HD (1080i/p), the legacy ports also support the following resolutions:

- 4K @ 24/25/30Hz, 4:4:4, 8bpc = 297MHz
- 4K @ 24/25/30Hz, 4:2:2, 8,10,12bpc = 297MHz
- 4K @ 60/50Hz, 4:2:0, 8bpc = 297MHz

Some legacy devices are not backward-compatible with any product's HDMI 2.0a inputs. These inputs will actually pass UHD content, as long as the bandwidth does not exceed their bandwidth limitation of 340MHz, and still support many HDMI 2.0 features such as HDR, BT2020, 4:2:0 as well as HDCP 2.2. Note that there are a number of parameters that can be juggled to minimize the required bandwidth, which normally happens automatically. In some cases, the difference between 60Hz and 24Hz solves the problem. In other cases, going from 4:4:4 to 4:2:2 color reduces the bandwidth adequately. (Note that no consumer source material is actually 4:4:4. Any 4:4:4 input to the SDP-75 is as a result of the source unit, such as a Kaleidescape or OPPO player, up-converting the signal.) As an example, playing the challenging Samsung HDR test disc on an OPPO UHD player results in 2160p/24 FPS, YCbCr 4:4:4, BT.2020, HDR10, while connecting to a 1.4a input results in 2160p/24, YCbCr, 4:2:2, BT.2020, HDR10. The only difference is the lack of the up-converting from the OPPO player, which most displays can also do internally. Thus, the "legacy" inputs are capable of far more than true legacy inputs, and offer greater value to the user.





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In the future, all seven of the SDP-75 HDMI inputs will be capable of being reprogrammed as HDMI 2.0b or as HDMI 1.4a via adding back the format-support EDIDs.

Output #2 must be used for HDMI 2.0b.

Output #1 is HDMI 1.4a and should in general *not* be connected for proper results from output #2. If the sink (video display) connected to input #1 has exactly the same capabilities as the sink connected to output #2, it should work properly. However, due to the many combinations of sources and sinks, we cannot confirm this to be true for every use case. We therefore recommend avoiding the use of output #1 if at all possible to minimize the chance of conflicts.