

Overview

There are several options for dealing with HDMI signals in installations that center around the DVX-2100HD. The particular options available to a designer / installer primarily depend on the presence or absence of HDCP for copy-protected content. If HDCP is not present then audio and video signals can be connected directly to the DVX-2100HD through the use of appropriate adapter cables. If HDCP is present then the decision centers around whether to use analog audio and video instead of HDMI or to use some other means of delivering the audio/video content to the display over HDMI. The purpose of this white paper is to describe the implementation of these various options.



1: HDMI without HDCP:

When using HDMI sources such as personal computers, cameras and some set-top boxes that do not use HDCP to copy-protect the audio and video content, audio and video signals can be directly connected to the DVX-2100HD. Adapter cables will be needed to connect digital HDMI video and stereo analog audio signals.

1. Use any quality HDMI to DVI adapter cable to connect the HDMI output from the source device to one of the DVI-I input connectors on the DVX-2100HD.
2. Connect the stereo analog output audio signals from the source device to one of the line-level audio input connectors on the DVX-2100HD. You may find this step easier by using AMX's 5-Pin Phoenix to RCA adapter cable, part number FG10-003-20.
3. Use the front-panel menu, the Web GUI, or NetLinx code to configure the video format on the chosen video input to DVI.

Using this connection scheme, video signals will be scaled accordingly based on input and output resolution settings.

2: HDMI with HDCP:

When using HDMI sources that implement HDCP, there are a number of ways to connect audio and video in the system. They are described below.

2A: Using Analog Video

Most HDMI/HDCP sources also provide an analog Component video output. Because the DVX can scale the component video input if necessary, video performance will not be an issue in most situations.

1. Use an FG10-2170-09, DVI to 3 RCA Male cable or equivalent to connect component video from the source to the DVX.
2. Connect the stereo analog output audio signals from the source device to one of the line-level audio input connectors on the DVX-2100HD. You may find this step easier by using AMX's 5-Pin Phoenix to RCA adapter cable, part number FG10-003-20.
3. Use the front-panel menu, the Web GUI, or NetLinx code to configure the video format on the chosen video input to Component.

2B: Connecting HDMI directly to the display

If there is only one display in the system and it has a sufficient number of HDMI inputs to support the number of HDMI/HDCP sources, then the source(s) can be directly connected to the display.

1. Connect the HDMI/HDCP source(s) directly to the display using a standard HDMI cable.
2. Connect one of the DVX video outputs to a compatible video input on the same display (RGBHV or DVI).
3. If the display will not be used as the amplifier for the space, then connect the stereo analog audio outputs from the source(s) to line level audio input connectors on the DVX. Microphone inputs can be used as mono line-level inputs if necessary.
4. The DVX can then be programmed to switch the display to the appropriate HDMI input whenever an HDMI/HDCP source is selected and then switch the display to the input connected to the DVX for all other sources.

2C: Using an HDMI switcher

If there are multiple displays in the system or a large number of HDMI/HDCP sources, then the best solution is to use the AMX AVS-OP-0808-JD0 Optima 8x8 HDMI Digital Video Matrix Switcher.

1. Connect all HDMI/HDCP sources to the HDMI switcher inputs using standard HDMI cables.
2. Use a DVI to HDMI adapter cable to connect the DVI output from the DVX to an input on the HDMI switcher.
3. Connect all displays to the HDMI switcher outputs using standard HDMI cables.
4. If the DVX will be used as the amplifier, then connect the stereo analog audio outputs from the sources to line level audio input connectors on the DVX. Microphone inputs can be used as mono line-level inputs if necessary.
5. The DVX can then be programmed to command the HDMI switcher to route the selected source to the correct output.

Conclusion

By using one of the above approaches, HDMI signals with or without HDCP can be incorporated into almost any DVX-based architecture.