CHAPTER 6

Connect to a Presentation System

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A DMP transmits signals to a public presentation system that you choose, such as a flat-panel display or projector that is connected to the DMP.

- This system might use projection or display technologies that are analog or digital.
- It might support Standard Definition (SD) or High Definition (HD).
- Its output fidelity depends in part upon which signal cables (and adapters) connect it to your DMP.

Tip **A DMP can detect automatically when some display brands and models are turned On or Off.** To connect one of these displays to your DMP, you must use an RS-232 serial cable in addition to the video signal cable. *Cisco Digital Signs* documentation on Cisco.com explains how to use this feature in your network.

Topics in this section teach you about these presentation systems, signal cables, and adapters.

Concepts

Understand S-Video Limitations

When you use an S-Video cable to pass High Definition video signals to a DMP, the picture quality is not High Definition. This happens because the S-Video standard is engineered to pass analog video signals in Standard Definition.

When you will use an S-Video signal cable, we recommend a maximum resolution of 728 x 576 @ 25Hz and a maximum cable length of 10 feet (approximately 3 meters).

Understand How HDMI and DVI Differ

With most modern, digital presentation systems, you can use an HDMI cable for both video and audio.

Other such systems might not connect until you combine the HDMI cable with an HDMI-to-DVI adapter for video. However, DVI does not support the transmission of audio signals. In this case, you can use the provided audio cable for audio.

DMP 4310G Notice Regarding HDMI/DVI Effects on Autodetection

A corner case exists that is mildly disruptive. It is not likely to affect your organization. To understand this corner case, assume that all of the following statements are true simultaneously.

- Your DMP model is 4310G.
- Your presentation system's media signal interface is DVI, not HDMI.
- EDID data in the firmware for your presentation system misrepresents its native resolution.
- The falsely claimed resolution is an HDMI standard instead of a VESA standard.

In this case, your DMP 4310G proceeds as if the native resolution is low, to ensure that your digital sign shows anything at all.

Tip **This constraint does not affect a DMP 4305G or a DMP 4400G.** These models do not use the same microprocessor that a DMP 4310G uses.

To work around this behavior, disable the autodetect feature in DMPDM and then choose the actual resolution manually.

Understand Which Displays Work Best with DMPs

We certify that DMPs work as designed with Cisco LCD flat-screen displays. All displays in this series are engineered for intensive use in public settings. See http://cisco.com/go/dms/lcd.

In most cases, DMPs can use displays that comply with modern, international standards. We recommend the following if you must use a third-party display.

- **Digital, not analog.**

- **High-definition, not standard-definition.**

- **Professional-grade, not consumer-grade.** Digital signs and public IPTV installations run many more hours each day than a consumer-grade display is engineered to run. A consumer-grade system is likely to fail years sooner than a professional-grade system would under these circumstances.

- **LCD, not plasma.** Digital signage uses static images more often than it uses full-motion video. Most often, content is web-based or animated in Flash. The nature of these media types means that some pixels are not updated frequently in digital signage. LCDs are less susceptible to burn-in than plasma displays are. Even though image persistence is sometimes a problem on LCD displays, it is almost always self-correcting and is unlikely to occur when you follow manufacturer guidelines for managing your displays correctly.

- **Built-in support for RS-232 signalling.** This recommendation is important in direct proportion to the number of displays that you will manage.

Choose Suitable Media Signal Cables

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Caution   **Poorly shielded cable can sometimes promote undesired signal leakage** *(egress)***, interference from over-the-air signals** *(ingress)***, or crosstalk between cables that are in close physical proximity.**

Special considerations apply when you obtain a signal cable that is longer or of a different type than cables that we included in your product kit. For DMP models that support the following signal cable types, the maximum supported lengths are:

- Composite—10 ft (approximately 3 m)

- HDMI 1.1—16 ft (approximately 5 m)

- RCA—10 ft (approximately 3 m)

- S-Video—10 ft (approximately 3 m)

- SPDIF—10 ft (approximately 3 m)

Cable Quality

The best signal cables objectively are those with the lowest signal resistance. Factors that affect signal resistance include wire gauge, cable shielding quality, and cable connector quality. However, the same materials and engineering designs that reduce signal resistance add to the cost of manufacturing. This added cost is passed along to a consumer. So, it is useful to understand when signal resistance is not relevant. Knowing this can help you to manage and reduce expenses without necessarily lowering your standards. High cost is not inevitable. Nor is it proof of high quality. Sometimes, in fact, high quality (low signal resistance) is irrelevant.

Even mediocre signal cables are sometimes sufficient, and such cables are often very affordable. Figure 6-1 illustrates the most important factors to consider when you choose signal cables.

Figure 6-1   ***Signal Cable Purchasing Factors to Consider***
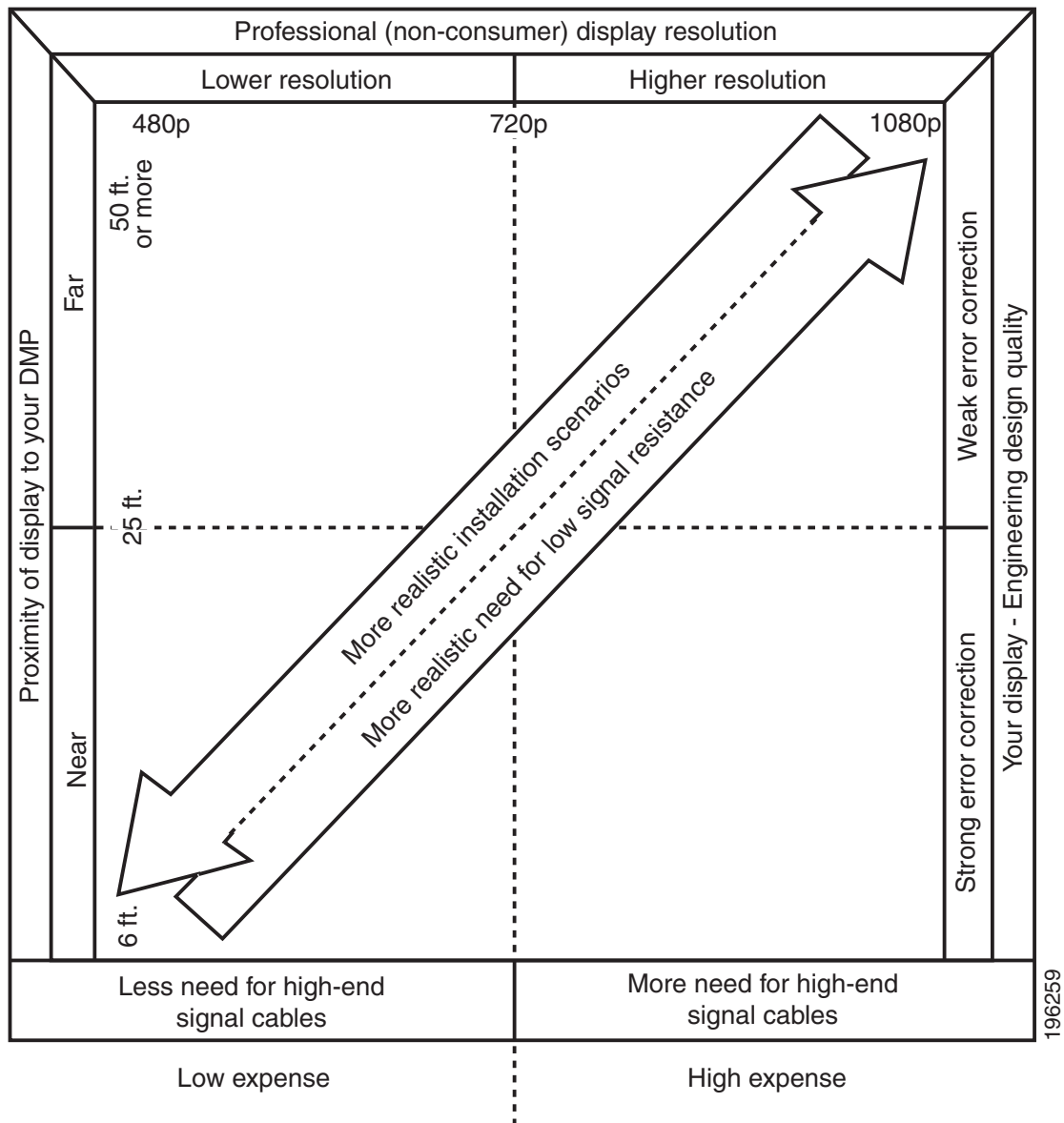
Beyond the general guidelines that Figure 6-1 illustrates, two additional factors might constrain which types of signal cable you can use.

- **The technology, brand, and model of your display**—Check its product documentation to understand its compatibility with various signal cable types.

- **The DMP model**—Table 2-2 states which I/O ports are available on various DMP models. (Alternatively, if the table does not describe your DMP model, see its datasheet at http://www.cisco.com/go/dms/dmp/datasheets.) Your packing list states which signal cables Cisco planned to ship with your DMP.

Related Topics

- Connect to a Presentation System, page 6-1

Understand How to Work Around the Low Signal Quality of Composite Video

> **Note** **When video signals are transmitted through a composite cable, image quality suffers.** When you use a composite cable and your DMP shows any web-based media, small text might be difficult to read in TVzilla. To work around this limitation, you can lower the browser resolution setting in DMPDM.

Related Topics

- TVzilla, page 3-4
- Connect to a Presentation System, page 6-1

Procedures

- Use an HDMI Connection, page 6-5
- Use a Connection that Combines HDMI with DVI, page 6-6
- Connect to a Touchscreen, page 6-7
- Connect to an Analog Display or Projector, page 6-8

Use an HDMI Connection

> **Timesaver** **Is your display a touchscreen?** If so, this topic is not for you. Instead, see the "Connect to a Touchscreen" section on page 6-7.

Procedure

Step 1 Connect the HDMI cable to the **HDMI** interface on the back panel of your DMP.

Step 2 Connect the other end of the cable to your presentation system.

Step 3 Turn **On** the presentation system.

Step 4 Stop. You have completed this procedure.

Related Topics

- DMP Physical Specifications and Interfaces (I/O Ports), page 2-4
- Use a Connection that Combines HDMI with DVI, page 6-6

Use a Connection that Combines HDMI with DVI

Timesaver   **Is your display a touchscreen?** If so, this topic is not for you. Instead, see the "Connect to a Touchscreen" section on page 6-7.

HDMI and DVI differ in their support for audio signals and use connectors that are shaped differently, but otherwise are identical. Thus, an adapter can help you to connect to your DMP any presentation system that supports DVI but not HDMI. When you do this, however, you must also use a separate signal cable to transmit audio signals, or there will not be any audio.

Before You Begin

- Obtain an HDMI-to-DVI adapter.

Procedure

Step 1   Make connections for video.

   a. Connect the HDMI cable to the **HDMI** interface on the back panel of your DMP.

   b. Fasten an HDMI-to-DVI adapter to the free end of the cable.

   c. Connect the free end of the DVI adapter to the corresponding interface on your presentation system.

Step 2   Make connections for audio.

   a. Plug the 3.5mm audio jack into the **Audio** interface on the back panel of your DMP.

   b. Connect the other end of the audio cable to the corresponding interface on your presentation system.

Step 3   If the presentation system is not already turned on, turn it **On** now.

Step 4   Stop. You have completed this procedure.

Related Topics

- DMP Physical Specifications and Interfaces (I/O Ports), page 2-4
- Use an HDMI Connection, page 6-5

Connect to a Touchscreen

Tip   **Some touchscreens work as designed only after they are calibrated manually.** If your touchscreen is one of these, its calibration occurs during a later stage of DMP setup. The list of related topics for this procedure states where you can learn about calibration.

DMP connections to a touchscreen are mostly the same as for other digital displays. However, touchscreens employ a special cable that supports interactivity through touch. This might be either an RS-232 serial cable or a USB cable, depending on the touchscreen model. Although some models support both cable types for interactivity, you can use only one type at a time.

Before You Begin

- Verify that your DMP model supports touchscreen technologies and that we support the touchscreen brand, model, and device driver that you will use. See http://www.cisco.com/go/dms/compatibility.

- Check the documentation for your touchscreen to learn whether it requires a serial connection or a USB connection to your DMP, or if it supports both.

Procedure

Step 1   Connect an HDMI cable to the **HDMI** interface on the back panel of your DMP.

Step 2   Connect the other end to your touchscreen.

OR

If your touchscreen supports DVI connections and not HDMI connections:

- Fasten an HDMI-to-DVI adapter to the free end of the cable.

- Connect the free end of the DVI adapter to the corresponding interface on your touchscreen.

Tip   **You can use an HDMI splitter or other supported method to attach multiple presentation systems to a DMP.** However, only one of these systems can be a touchscreen.

Step 3   Do only one of the following.

- Connect a USB cable to the **USB** interface on the back panel of your DMP. Then, connect the other end to your touchscreen.

  If your DMP model has only one USB connector, you might prefer to connect an external hard drive there for added local storage. In this case, an RS-232 serial cable would be the better choice for connecting a touchscreen to your DMP.

- Connect an RS-232 serial cable to the **RS232** interface on the back panel of your DMP. Then, connect the other end to your touchscreen.

Step 4   Turn **On** the touchscreen.

Tip   **Does a message on the touchscreen say that it must download a "characterization" file?** This happens only when your touchscreen uses technologies from Elo TouchSystems and when you have never turned it On previously (or after its CF card is reformatted). When you see this message, please disregard it. The touchscreen will obtain its characterization file automatically during a later stage of DMP setup.

Step 5   Stop. You have completed this procedure.

Related Topics

- DMP Physical Specifications and Interfaces (I/O Ports), page 2-4
- Choose and Calibrate a Touchscreen Driver, page 9-3

Connect to an Analog Display or Projector

Tip   **DMPs support connections to analog presentation systems,.** However, we recommend strongly that you use *digital* presentation systems whenever possible.

Procedure

Step 1   Make connections for video.

  a.   Plug one yellow jack from the RCA video cable into the **CVBS** interface on the back panel of your DMP.

  b.   Connect the free end of this cable to the corresponding interface on your presentation system.

Step 2   Make connections for audio.

  a.   Plug the 3mm jack on the RCA audio cable into the **AUDIO** interface on the back panel of your DMP.

  b.   Connect the free end of this cable to the corresponding interface on your presentation system.

Step 3   If the presentation system is not already turned on, turn it **On** now.

Step 4   Stop. You have completed this procedure.

Related Topics

- DMP Physical Specifications and Interfaces (I/O Ports), page 2-4
- Understand How to Work Around the Low Signal Quality of Composite Video, page 6-5