Concepts

Overview

A DMP transmits signals to a public presentation system, such as a monitor or projector, that is connected to the DMP. This presentation system might be analog or digital. Its output fidelity depends in part upon which signal cables (and adapters) connect it to your DMP.

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.

Tip Do you use a Cisco-branded LCD display? If so, a feature of *Cisco Digital Signs* software can detect automatically when your display is turned On or Off. To connect one of these models to your DMP, you must use an RS-232 serial cable in addition to the video signal cable.

Related Topics

- Use an HDMI Connection, page 2
- Use a Connection that Combines HDMI with DVI, page 2
- Connect to a Touchscreen, page 4

Procedures

Use an HDMI Connection

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

- Use a Connection that Combines HDMI with DVI, page 2

Use a Connection that Combines HDMI with DVI

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

- Use an HDMI Connection, page 2

Connect to an Analog Display or Projector

Tip Although DMPs support connections to analog presentation systems, we recommend strongly that you use digital 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

- Work Around the Low Signal Quality of Composite Video Cables, page 3

Work Around the Low Signal Quality of Composite Video Cables

Note Image quality suffers in visual media when the signals that describe them are transmitted through a composite cable. 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
- Connect to an Analog Display or Projector, page 3

Connect to a Touchscreen

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 of these cable types for interactivity, you can use only one of them at a time.

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.

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 if it requires a serial connection or a USB connection to your DMP, or if it supports both of these connection types.

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 your DMP, but 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.

A message might appear on the touchscreen, to inform you that it must download a characterization file. This happens only if your touchscreen uses technologies from Elo TouchSystems and if 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.

<table>
<tr><td>⌕</td><td></td></tr>
<tr><td>**Tip**</td><td>When you turn On a touchscreen that was calibrated previously, it might sometimes appear not to have been calibrated. If this happens to you, unplug the serial cable or the USB cable that connects this touchscreen to your DMP, and then plug that cable back in again.</td></tr>
</table>

Step 5   Stop. You have completed this procedure.

Choose and Calibrate a Touchscreen Driver

This procedure applies to you only if your DMP supports interactivity through touch and your presentation system is a touchscreen. Furthermore, it assumes that you completed the "Connect to a Touchscreen" section on page 4.

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.

- Log in to DMPDM.

Procedure

Step 1   If your touchscreen shows a message that says it must download a touchscreen characterization file:

- Do not disturb or interrupt this process. It occurs only once, automatically.

- The process takes approximately 10 minutes to finish. When it is finished, your touchscreen will clear the message automatically.

- Stop. You have completed this procedure and there is no need to perform any of its other steps.

Step 2   Because some touchscreen drivers cannot be calibrated on a DMP while it is playing video, use DMPDM to stop all videos.

   a.   Click **Video Multicast** in the Display Actions list, and then click **Stop**.

   b.   Click **Media URL** in the Display Actions list, and then click **Stop**.

Step 3   Choose the browser rotation angle for your touchscreen.

Supported rotation angles are 0°, 90°, 180°, and 270°.

   a.   Click **Browser** in the Settings list.

   b.   Choose an option from the Screen Rotation Angle (clockwise) list, and then click **Apply**.

   c.   Click **Save Configuration** in the Administration list, and then click **Save**.

   d.   Click **Restart DMP** in the Administration list, and then click **Restart**.

Step 4   After your DMP restarts, log in again to DMPDM.

Step 5   Click **Touch Screens** in the Settings list.

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Tip   If you do not see this option in DMPDM, your DMP might not support this feature. If you believe that its hardware design allows for the possibility of such support, check whether any firmware upgrade is available for your DMP that adds support for this feature:

- Cisco DMS release notes—http://cisco.com/go/dms/releasenotes.
- Cisco DMS compatibility information—http://cisco.com/go/dms/compatibility.

If such firmware is available, obtain it and then complete the DMP firmware upgrade procedure in the DMPDM user guide at http://cisco.com/go/dms/dmpdm. The nature of your Cisco DMS service contract might limit:

- Which upgrades are available to you.
- Where and how you obtain upgrades.
- Whether you must pay anything to obtain upgrades.

To learn about Cisco service contracts, see http://cisco.com/go/cscc.

a.   Check the Currently Loaded Driver row to see which touchscreen driver, if any, is active on your DMP.

The driver might be **3M**, **Zytronic**, **Elo**, **GeneralTouch**, or possibly something else. As we test various drivers, we might update this list between any two DMPDM releases.

Your DMP must use a driver that is compatible with your touchscreen.

b.   If the active driver is not compatible with your touchscreen, choose the compatible driver from the Choose Touch Screen to Activate list.

c.   Click **Apply**.

d.   Click **Save Configuration** in the Administration list, and then click **Save**.

e.   Click **Restart DMP** in the Administration list, and then click **Restart**.

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Tip   The Elo and GeneralTouch drivers are self-calibrating.

Step 6   If you chose 3M, Zytronic, or another driver that must be calibrated manually:

a.   After your DMP has restarted, log in again to DMPDM.

b.   Click **Touch Screens** in the Settings list.

c.   Click **Calibrate** *<driver_name>* **Screen**, where *driver_name* is the name of the driver that you chose.

- When messages appear on the touchscreen surface that prompt you to touch the surface in various places, follow the prompts exactly. For example, the calibration utility might prompt you to touch exactly five areas or exactly nine areas.

- If you do not complete this exercise within the brief period that is allotted for it, the calibration utility times out automatically.

- Repeat these steps for manual calibration if the driver utility times out before you can calibrate your driver.

> **Note** You must repeat the calibration whenever you:
>
> - Rotate a touchscreen or change its resolution.
> - Replace a touchscreen.

Step 7 Stop. You have completed this procedure.

Related Topics

- Connect to a Touchscreen, page 4

Configure Video Output

Before You Begin

- Connect your DMP to its presentation system.
- Log in to DMPDM.

Procedure

Step 1 Click **DMP Display Attributes** in the Settings list.

The display autodetection feature is enabled by default. However, it fails unless you use either:

- An HDMI signal cable.
- An HDMI signal cable in combination with an HDMI-to-DVI adapter.

> **Note** If you are satisfied with the choices and entries that DMPDM made for you as a result of its DMP display autodetection, *you are done* with this section and you can go now to the "Configure Your DMP to Trust Only Your DMM Appliance" section on page 26.
>
> Otherwise, if you are *not* satisfied—or if your display does not support HDMI connections—do the following.

   a. Choose **Disable** from the DMP Display Autodetection (requires HDMI) list.

   b. Choose a standard from the Display Standard list that applies in your country. For example, even though our factory default selection is NTSC_M, your country might use **PAL** instead.

   c. Choose your connector and signal type from the Interface (DMP display output) list. For example, you might use **SVIDEO**.

      If you do not know which options to choose, see the manufacturer documentation for your presentation system.

Step 2 Choose from the Color Space list the absolute color space that your presentation system uses.

Step 3 (**If you chose RGB as the color space**) Choose an option from the Color Component Order list to define the order in which to store red, green, and blue data.

The color component order is sometimes called the left-to-right additive color model.

Step 4 (**Optional**) Move any or all of the sliders to compensate for presentation system deficiencies in video (brightness, contrast, or saturation) or audio (channel volume).

Step 5 Click **Apply** to confirm your choices and to implement them until you change them or until you restart your DMP.

Step 6 Click **Show IP**—in the DMP Mode area—to test if your choices are suitable ones for your presentation system.

Your presentation system should show a Cisco logo and should show the IP address for your DMP.

Step 7 Click **Save Configuration** in the Administration list, and then click **Save**.

Step 8 Stop. You have completed this procedure.

Change the Splash Screen Duration

You can use DMPDM to change how long your DMP shows its splash screen during startup. This is useful when, for example, your organization prefers not to reveal an IP address casually to all observers.

- A duration of 30,000 milliseconds (30 seconds) is the factory default.
- A duration of 1 millisecond turns off the splash screen.
- Any duration in the range from 2 to 5,000 milliseconds (5 seconds) does not have any effect.

Before You Begin

- Log in to DMPDM.

Procedure

Step 1 Click **Browser** in the Settings list.

Step 2 Enter a new duration in milliseconds in the **Splash Screen Display Time (in milliseconds)** field.

Step 3 Click **Apply**.

Step 4 Click **Save Configuration** in the Administration list, and then click **Save**.

Step 5 Stop. You have completed this procedure.

Reference

Media Interfaces on a DMP Chassis

Table 1   DMP Interfaces

Category and Subcategory	Subcategory		Chassis Labels	Instances per DMP Model	
				DMP 4305G	DMP 4400G
Media Signal					
Wired[1]	Video		• HDMI 1.1	1	1
			• Composite[2] • CVBS[3]	1	1
			• YPbPr[4] • S-Video	1	1
	Audio	RCA	• SPDIF	0	1
		3.5mm[5]	• Audio	0	1
		RCA	• Right	1	0
			• Left	1	0
	Infrared Remote Control Signal	3.5mm IR receiver extension	• IR Extension	0	1
Wireless	Infrared Remote Control Signal		• —	1	1
Serial (Comm Ports)					
Wired	Data	RS-232 (9-pin to 9-pin)	• RS 232	1	1

1. Each video and audio signal cable that we ship with DMPs is 6 ft (approximately 1.83 m) long.

2. See Work Around the Low Signal Quality of Composite Video Cables, page 3.

3. The S-Video/YPbPr connector supports Composite CVBS when you add an S-Video-to-Composite adapter.

4. Use an S-Video signal cable with a YPbPr-to-S-Video adapter to transmit and receive YPbPr data signals.

5. Stereo audio output, irrespective of the cable type for video output.

How to Choose Displays (Monitors) That Work Well with DMPs

We certify that DMPs work as designed with Cisco LCD flat-screen displays, which 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. If you will use a third-party display, we recommend:

- **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 if 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.

How to Choose 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.

Media Signal Cable Length

For DMPs 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)

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. The key points to understand are:

- High cost is not inevitable.
- High cost is not proof of high quality.
- Sometimes, high quality (low signal resistance) is irrelevant.

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

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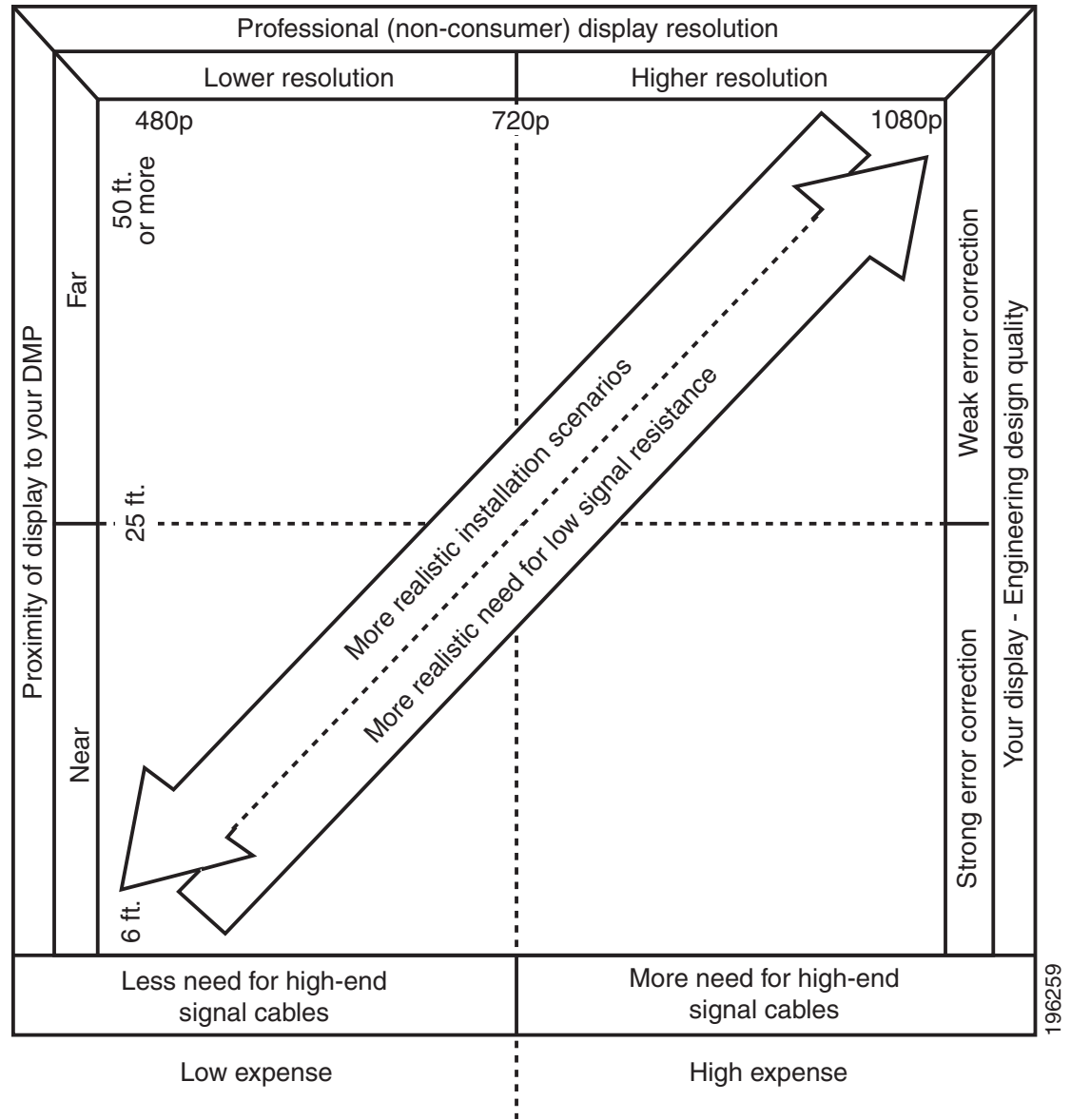
Beyond the general guidelines that Figure 1 illustrates, two additional factors constrain which types of signal cable you can use:

- **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 1 on page 9 states which physical interfaces are available on various DMP model chassis. (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

- Overview, page 1

- Connect to an Analog Display or Projector, page 3