C H A P T E R **16**

Touchscreens, Projectors, and Displays

Revised: April 4, 2012
OL-15762-04

We prepared this material with specific expectations of you.

You manage and operate presentation systems that are connected to remote DMP endpoints.

Audience

Concepts

Overview

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), High Definition (HD), or both.

- 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—including the 40-inch and 52-inch models in our LCD Professional Series—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.

  - When you use a Cisco-branded LCD display, 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.**

Our centralized management features help you to manage a global IP network of digital signs for any purpose — in conference rooms, public venues, or executive offices.

Presentation System Concepts

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 their technical documentation (CSCti35199) at http://cisco.com/en/US/products/ps10099/tsd_products_support_series_home.html.

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.

Understand How to Choose Media Signal Cables

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)

Note   - **When image 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 (the web browser that runs on some DMP models). To work around this limitation, you can lower the browser resolution setting in DMPDM.
- **Shockwave Flash (SWF) text is blurred during playback when a component video cable connects your DMP to its presentation system** (CSCsx48899). To work around this limitation, avoid the use of component video cable.

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 16-1 illustrates the most important factors to consider when you choose signal cables.

Figure 16-1   Signal Cable Purchasing Factors to Consider
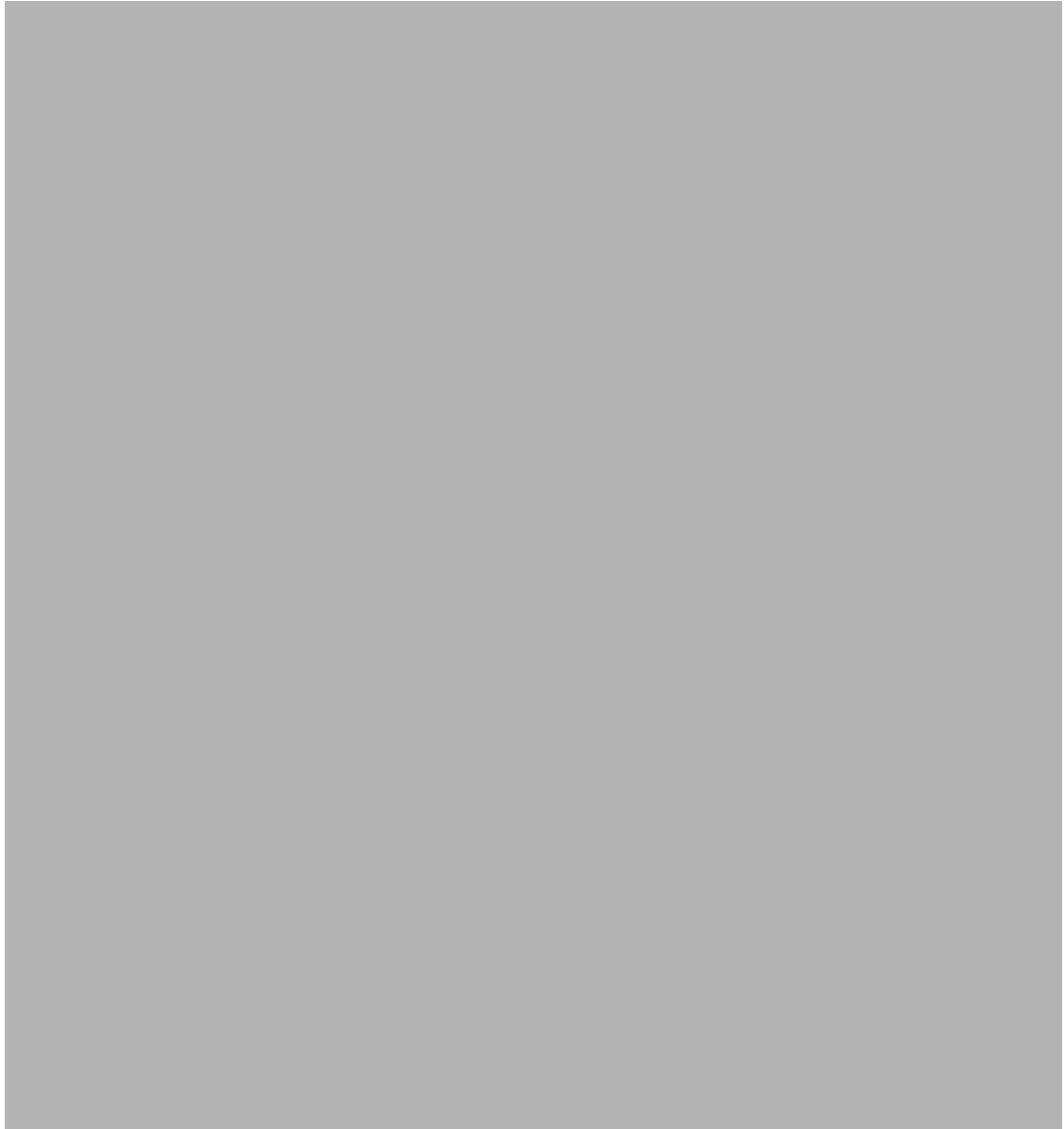
Beyond the general guidelines that Figure 16-1 illustrates, two additional factors might constrain which types of signal cable you can use.

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

- **Your DMP model**—See its datasheet at http://www.cisco.com/go/dms/dmp/datasheets. Also, your packing list states which signal cables Cisco planned to ship with your DMP.

Related Topics

Understand and Prevent Image Retention (Burn-in)

After any LCD panel shows a fixed pattern for more than 12 hours, slight voltage differences can develop among electrodes that power the liquid crystals. Therefore, after you show a fixed image for an extended period of time, it might become blurred or might leave a residual image on an LCD display. This occurs when charged liquid crystal becomes "stuck" in one position.

Nonetheless, image retention should not occur when you follow our recommended best practices.

Turn off your display at regular intervals	• After using your display for 20 hours, turn it off for 4 hours. • After using your display for 12 hours, turn it off for 2 hours.
Rotate colors and color schemes at regular intervals	Cycle between colors every 30 minutes.
Avoid extreme differences in luminance	• Do not use foreground and background colors that differ greatly in their luminance. • Do not use gray. • Use bright colors that are identical in their luminance or that differ only slightly in their luminance. • Apply motion every 30 minutes to regions that show text. • Apply 1 minute of motion to any region that has shown a logo for 4 hours.
Use built-in features to prevent image retention	**Tip** Some Cisco LCD models support these features while others do not. Check your Cisco LCD documentation. • Use the **Scroll** feature to move a solid black bar up and down the display. – Set its interval in the rage from 1 to 10 hours. We recommend a 1-hour interval. – Set its duration in the range from 1 to 5 seconds. We recommend a 5-second duration. • Use the **Pixel Shift** feature to move a dotted black rectangle from top to bottom. – Set its interval in the rage from 1 to 10 hour. We recommend a 1-hour interval. – Set its duration in the range from 10 to 50 seconds. We recommend a 50-second duration. • Use the **Bar** feature to move a black crosshair around your display. – Set its interval in the range from 1 to 10 hours. We recommend a 1-hour interval. – Set its duration in the range from 10 to 50 seconds. We recommend a 50-second duration.

Procedures

Connect to a Digital Display or Projector

Timesaver   **Is your display a touchscreen? If so, this topic is not for you.** Instead, see the "Connect to a Touchscreen" section on page 16-7.

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, additional signal cable to transmit audio signals, or playback will be silent.

Tip   ***Is playback silent even though your signal cable type is HDMI?*** If so, make sure that your DMP has attributed an authentically HDMI-standard resolution value—such as "HDMI_1080p60"—to your presentation system (CSCsk29797). The HDMI standard does not support audio playback through any system whose settings ignore or contradict HDMI standards. Thus, you cannot use HDMI to play audio through a presentation system whose resolution setting is, for example, "VESA_1360x768x60."

Before You Begin

- Obtain an HDMI-to-DVI adapter if your presentation system uses DVI.

Procedure

Step 1   Do only one of the following.

- *Does your presentation system use HDMI?*

  When you will use HDMI

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

  b. Connect the other end of the cable to your presentation system.

  c. Procced to Step 2.

- *Does your presentation system use DVI?*

  When you will use DVI

  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.

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

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

  f. Pproceed to Step 2.

Step 2   If the presentation system is not already turned on, turn it **On** now.

Step 3   Stop. You have completed this procedure.

Related Topics

- Video and Audio Signal Interfaces, page 16-35
- Connect to a Digital Display or Projector, page 16-6

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.

- 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   Do only one of the following.

- *Does your touchscreen use HDMI?*

  When you will use HDMI

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

  b. Connect the other end of the cable to your touchscreen.

  c. Proceed to Step 2.

- *Does your touchscreen use DVI?*

  When you will use DVI

  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 touchscreen.

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

  e. Connect the other end of the audio cable to the corresponding interface on your touchscreen.

  f. Proceed to Step 2.

Step 2   Do only one of the following.

- *Does your touchscreen use USB?*   **When touchscreen interaction relies on USB**

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

    b. Connect the other end of the cable to your touchscreen.

    c. Proceed to Step 3.

    Note   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.

- *Does your touchscreen use RS-232?*   **When touchscreen interaction relies on RS-232**

    a. Connect an RS-232 serial cable to the **RS232** interface on the back panel of your DMP.

    b. Connect the other end of the cable to your touchscreen.

    c. Proceed to Step 3.

Step 3   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 4   Stop. You have completed this procedure.

Related Topics

- Video and Audio Signal Interfaces, page 16-35

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

- Video and Audio Signal Interfaces, page 16-35

Use RS-232 Signals to Control Presentation Systems

No international agency exists to tell all of the world's video equipment manufacturers which commands and methods (such as RS-232) a presentation system must support. Likewise, no global authority exists to state exactly which hexadecimal string—if any—must invoke a particular command.

So when manufacturers implement RS-232 commands, they do so as they see fit. Thus, RS-232 command syntax differs among manufacturers and sometimes differs even among equipment models that share a manufacturer in common.

Tip   **Check the manufacturer's product documentation for your LCD display to learn about its RS-232 support and syntax.**

So, how is RS-232 useful to me?

Your digital signs run in the real world because your organization expects to tell someone something. But when you, the administrator, are half a world away from a sign, or even just a few buildings away, how can you be *absolutely sure* that your sign is doing anything—let alone everything—correctly?

- Is its power turned Off when it should be turned On?

- Is its audio muted during an exclusive musical performance?

- Does it ignore a valid video input signal while listening on some other, but disconnected, interface?

Meanwhile, how can you recognize and fix any such misconfiguration from miles away? Situations like these are perfect for RS-232, whose technology passes properly constructed "command-and-control" instructions through a DMP and into its attached presentation system.

A case in point: Cisco Digital Signs software can tell you automatically and in real-time which of your centrally managed Cisco LCD displays are turned On or Off. You can learn at a glance when one (or more) of these remote units is in the wrong power state, and then issue a simple command to correct the mistake. But even so, your ability to turn remote equipment On or Off so easily through the Internet is just one benefit of feeding RS-232 commands through a DMP to its attached LCD display.

This section includes these topics.

- Prepare Cisco Displays to Support RS-232 Syntax, page 16-11
- Bootstrap DMTech Displays to Enable Their RS-232 Support, page 16-16
- Bootstrap NEC Displays to Enable Their RS-232 Support, page 16-19
- Delete Equipment Settings That Use RS-232 Syntax, page 16-25

- Use RS-232 Signals to Control Presentation Systems, page 16-10
- Use RS-232 Syntax to Control Digital Signs, page 16-21

Prepare Cisco Displays to Support RS-232 Syntax

Note   **This material pertains to multiple Cisco LCD display models.**

32-inch	40-inch	42-inch	47-inch	52-inch	55-inch
(LCD-100L-PRO-32N)	(LCD-100-PRO-40N)	(LCD-110L-PRO-42)	(LCD-110L-PRO-47)	(LCD-110-PRO-52S)	(LCD-110Q-PRO-55Q)

Individual Cisco LCD display models each support dozens of RS-232 commands, covering the range of their configurable features.
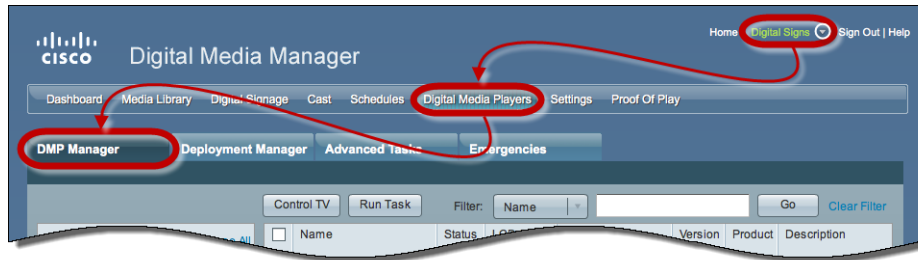
This topic explains various steps that you must complete before a Cisco LCD display supports RS-232 signaling for centralized management.

Before You Begin

- Connect your Cisco LCD display to the DMP that will drive it.
- Plug in your LCD display and turn it On.

Procedure

Step 1   Choose **Digital Media Players > DMP Manager**.

Step 2   Use one of these methods, at your discretion, to limit the scope of what the DMP List table shows to you.

- *Limit the scope by filtering.*

    (Optional)
    When you will filter against an attribute value

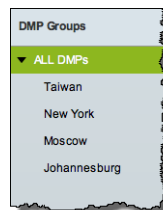   a.   Choose a DMP attribute type from the Filter list.

    You can filter by DMP name, description, IP address, MAC address, or any other supported attribute.

    b.   Enter an actual value to filter against the attribute type that you chose.

    Had you chosen to filter against the Description attribute, for example, you might now enter a word like '**classroom**' or '**billboard**' as the value to match.

    c.   Click **Go**.

    d.   Proceed to Step 3.

- *Limit the scope by browsing.*

    (Optional)
    When you will browse by DMP group

    a.   Browse in the DMP Groups tree to restrict what the DMP List table shows.

    b.   Proceed to Step 3.

Step 3   Click one DMP in the table to choose it exclusively.

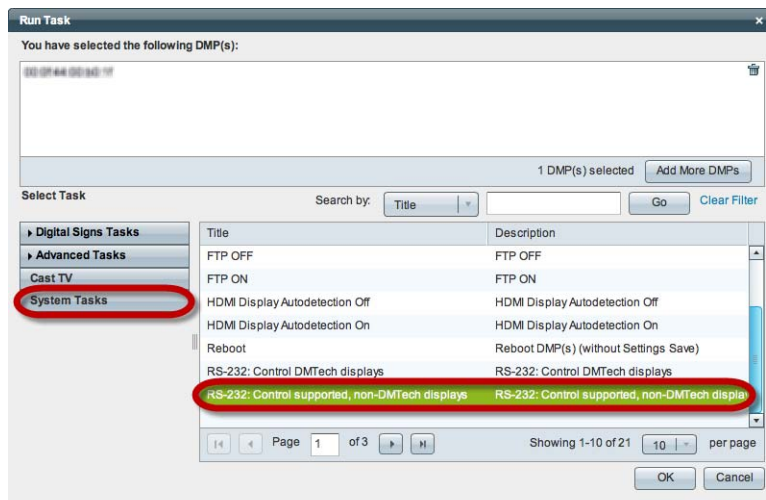|	Name	Status	LCD Status	IP Address	Version	Product	Description	Internal Storage Free/Total (GB)	External Storage Free/Total (GB)	WAAS Status	Actions
☑		☑	Not Set				registered	27.59 / 29.8	0 / 0	yes	🔍 📝 🗑

OR

Use check boxes to choose multiple DMPs whose attached presentation systems are all identical.

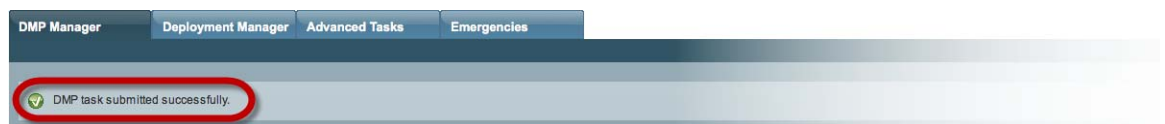|	Name	Status	LCD Status	IP Address	Version	Product	Description	Internal Storage Free/Total (GB)	External Storage Free/Total (GB)	WAAS Status	Actions
☑		☑	Not Set				registered	27.59 / 29.8	0 / 0	yes	🔍 📝 🗑
☑		☑	Not Set				registered	28.09 / 29.8	0 / 0	no	🔍 📝 🗑

Step 4   Click [Run Task], above the DMP List table.

Step 5   Click **RS-232: Control supported, non-DMTech displays** in the System Tasks drawer.

Step 6   Click **OK**.

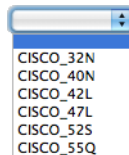A message loads under the DMP Manager tab, confirming that DMM received your submission.

Step 7   Choose **Digital Media Players > Advanced Tasks > DMP Polling Status Control**.

Step 8   Click 📄 **Add New Application**.

a.   Choose your Cisco Professional Series LCD display model from the TV Type list.

✎   **Note**   **This variation of our standard TV Type list includes Cisco models exclusively.** These are the only presentation system models whose electrical power On/Off state this Cisco DMS release can poll in real-time.

ALSO: *Is your Cisco LCD display the 32-inch model?* If so, see the "Do you use our 32-inch LCD display?" section, elsewhere in this procedure. It might be necessary for you to disable a feature that all other users enable.

b.   Choose **On** from the Polling list, and then click **Submit**.

We generate a concise name for this application automatically. We are able to do this because your selections have already defined the purpose and scope of your new polling control application. Its generated name is always one of these:

- `CISCO_32N=on`
- `CISCO_40N=on`
- `CISCO_42L=on`
- `CISCO_47L=on`
- `CISCO_52S=on`
- `CISCO_55Q=on`

After we show the name to you, your new polling control application is ready for use.

Step 9   Click `Run Task`, again.

Step 10   Click **DMP Polling Status Control** in the Advanced Tasks drawer.
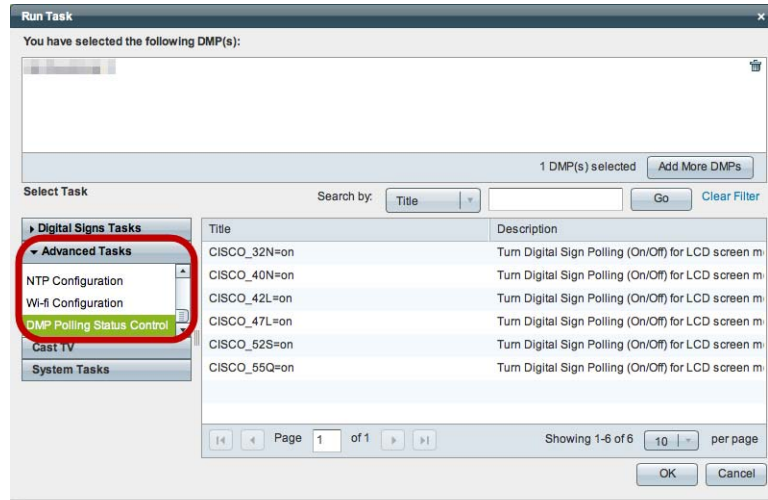
Step 11   Click the same "**=on**" application that you saved for your Cisco LCD model, and then click **OK**.

A message loads under the DMP Manager tab, confirming that DMM received your submission.
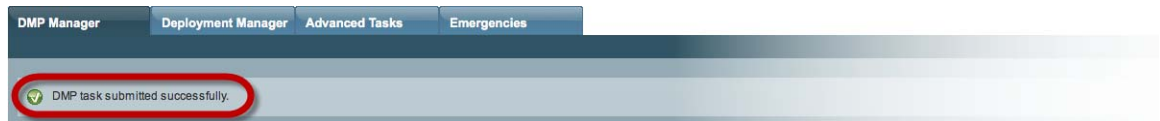
Note   **As many as 5 minutes might pass before the LCD Status column updates its value to show the real-time power state of your Cisco LCD display.** Ultimately, this value will say either "Display On" or "Display Off." Until then, however, it will say "Not Set."

Please check the next step in this procedure, however, to learn if another step is necessary here to configure your LCD Professional Series model.

Step 12   Compensate, as needed, for model-specific exceptions to basic RS-232 setup.

- *Do you use our 42-inch or 47-inch LCD display?*

When you will poll the On/Off status of a 42- or 47-inch Cisco LCD display

Factory-default settings for this equipment save power by turning Off most of its support for remote management and polling. Almost any attempt to use such features can fail while the energy-saving settings remain in effect.[1] **So, before you can reliably manage or poll this equipment from Cisco DMS, YOU[2] MUST explicitly prepare the RS-232 service for use.** Later, at your discretion, you can either turn Off[3] this support or leave it turned On[4] continuously.

  a. Press **Menu** on the handheld remote control unit.

      Your LCD display shows its OSD menu.

  b. Use buttons on the remote control to choose **Option > Set > Set ID**, and then change the Set ID value (from "Off") to **1**.

  c. Press **Exit** on the remote control.

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1. CSCts44188; CSCtl83984.
2. Or the on-site operator for this equipment.
3. Which decreases power consumption but complicates remote management.
4. Which simplifies remote management but increases power consumption.

Related Topics

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Bootstrap DMTech Displays to Enable Their RS-232 Support

You can use our Digital Signs software to transmit instruction codes through your DMPs, and into their attached presentation systems.
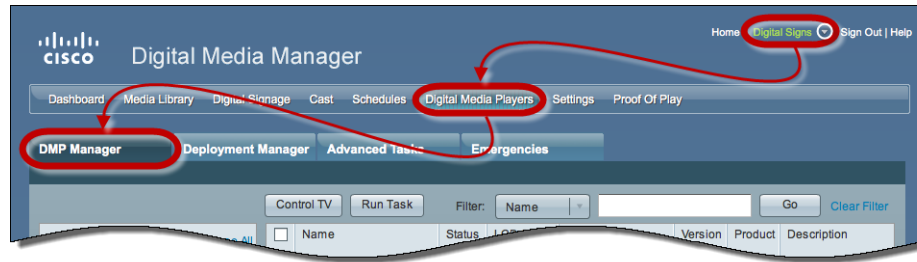
Note   **We do not maintain or control the RS-232 commands for any third-party equipment.** Please check the manufacturer documentation for your non-Cisco presentation systems to learn which RS-232 strings are engineered to manage them.

Procedure

Step 1   Choose **Digital Media Players > DMP Manager**.

Step 2   Use one of these methods, at your discretion, to limit the scope of what the DMP List table shows to you.

- *Limit the scope by filtering.*   (Optional)

  When you will filter against an attribute value

  a.   Choose a DMP attribute type from the Filter list.

  You can filter by DMP name, description, IP address, MAC address, or any other supported attribute.

  b.   Enter an actual value to filter against the attribute type that you chose.

  Had you chosen to filter against the Description attribute, for example, you might now enter a word like '**classroom**' or '**billboard**' as the value to match.

  c.   Click **Go**.

  d.   Proceed to Step 3.

- *Limit the scope by browsing.*   (Optional)

  When you will browse by DMP group

  a.   Browse in the DMP Groups tree to restrict what the DMP List table shows.

  b.   Proceed to Step 3.

Step 3 Click one DMP in the table to choose it exclusively.

	Name	Status	LCD Status	IP Address	Version	Product	Description	Internal Storage Free/Total (GB)	External Storage Free/Total (GB)	WAAS Status	Actions
☑		☑	Not Set				registered	27.59 / 29.8	0 / 0	yes	🔍 📝 🗑

OR

Use check boxes to choose multiple DMPs whose attached presentation systems are all identical.
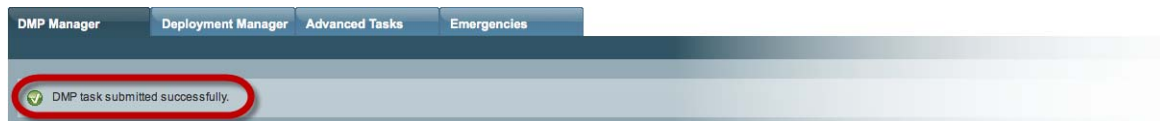
	Name	Status	LCD Status	IP Address	Version	Product	Description	Internal Storage Free/Total (GB)	External Storage Free/Total (GB)	WAAS Status	Actions
☑		☑	Not Set				registered	27.59 / 29.8	0 / 0	yes	🔍 📝 🗑
☑		☑	Not Set				registered	28.09 / 29.8	0 / 0	no	🔍 📝 🗑

Step 4 Click Run Task, above the DMP List table.

Step 5 Click **RS-232: Control DMTech Displays** in the System Tasks drawer.

Step 6 Click **OK**.

A message loads under the DMP Manager tab, confirming that DMM received your submission.

| DMP Manager | Deployment Manager | Advanced Tasks | Emergencies |

✓ DMP task submitted successfully.

Step 7 Stop. You have completed this procedure.

Related Topics

- Elements to Activate RS-232 for LCD Displays by DMTech, page 16-41

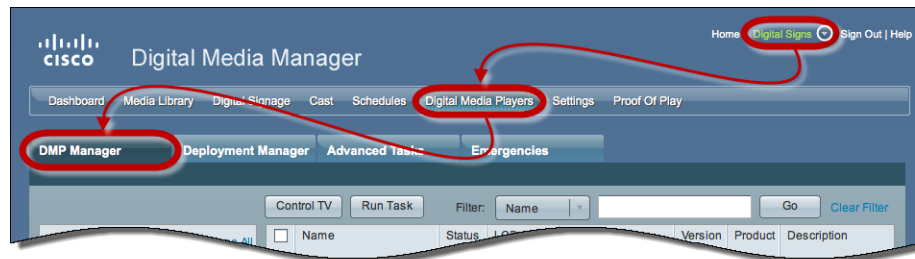# Bootstrap NEC Displays to Enable Their RS-232 Support

You can use our Digital Signs software to transmit instruction codes through your DMPs, and into their attached presentation systems.

> **Note**   **We do not maintain or control the RS-232 commands for any third-party equipment.** Please check the manufacturer documentation for your non-Cisco presentation systems to learn which RS-232 strings are engineered to manage them.

Procedure

Step 1   Choose **Digital Media Players > DMP Manager**.

Step 2   Use one of these methods, at your discretion, to limit the scope of what the DMP List table shows to you.

- *Limit the scope by filtering.*   (Optional)

  When you will filter against an attribute value

  a. Choose a DMP attribute type from the Filter list.

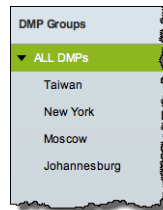 Filter: | Name | ▾ | | | Go | Clear Filter

  You can filter by DMP name, description, IP address, MAC address, or any other supported attribute.

  b. Enter an actual value to filter against the attribute type that you chose.

  Had you chosen to filter against the Description attribute, for example, you might now enter a word like '**classroom**' or '**billboard**' as the value to match.

  c. Click **Go**.

  d. Proceed to Step 3.

- *Limit the scope by browsing.*   (Optional)

  When you will browse by DMP group

  a. Browse in the DMP Groups tree to restrict what the DMP List table shows.

  DMP Groups
  ▼ ALL DMPs
      Taiwan
      New York
      Moscow
      Johannesburg

  b. Proceed to Step 3.

Step 3   Click one DMP in the table to choose it exclusively.

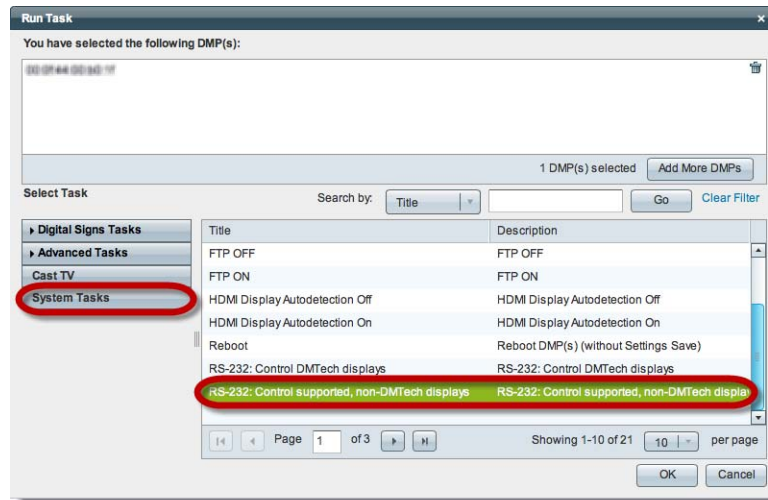| ☐	Name	Status	LCD Status	IP Address	Version	Product	Description	Internal Storage Free/Total (GB)	External Storage Free/Total (GB)	WAAS Status	Actions
☑		☑	Not Set				registered	27.59 / 29.8	0 / 0	yes	🔍 ▤ 🗑

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Use check boxes to choose multiple DMPs whose attached presentation systems are all identical.

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☑		☑	Not Set				registered	27.59 / 29.8	0 / 0	yes	🔍 ▤ 🗑
☑		☑	Not Set				registered	28.09 / 29.8	0 / 0	no	🔍 ▤ 🗑

Step 4   Click   Run Task , above the DMP List table.

Step 5   Click **RS-232: Control supported, non-DMTech displays** in the System Tasks drawer.

Step 6   Click **OK**.

A message loads under the DMP Manager tab, confirming that DMM received your submission.

Step 7   Stop. You have completed this procedure.

Related Topics

- Elements to Activate RS-232 for Supported LCD Display Brands (except DMTech), page 16-40

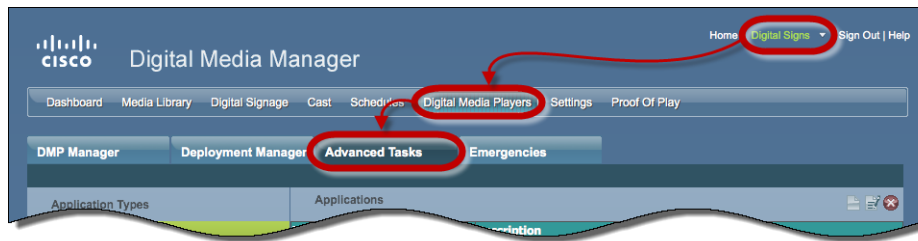# Use RS-232 Syntax to Control Digital Signs

You can add and edit RS-232 commands that operate LCD displays or other presentation system types.

Before You Begin

- Prepare your displays for centralized management via RS-232 commands.
- Activate RS-232 command access for your displays.

Procedure

Step 1   Choose **Digital Media Players > Advanced Tasks**.

Step 2   Click **System Tasks** in the Application Types list.

Step 3   Do one of the following.

- *Are you adding (creating) a command?*

    When you will define and save a new RS-232 command

    a. Click 📄 **Add New Application**.

    The page is refreshed so that you can choose options and enter values.

    b. Enter a name.

    c. Choose **Set** from the Request Type list.

    d. Enter an RS-232 command string in the Request field.

- *Are you editing a command that you saved previously?*

    When you will edit a saved command

    a. Find your editing target in the Applications table.

    b. Click its named row in the Applications table.

    c. Click 📝 **Edit Application**.

    The page is refreshed so that you can choose options and enter values.

    d. As needed:
    - Edit the name.
    - Edit the RS-232 command string in the Request field.

For example, the hexadecimal strings in Table 16-1 convey many of the RS-232 commands that you can send in this way to a Cisco LCD Professional Series display.

Table 16-1   *RS-232 Commands to Manage Cisco LCD Displays*

Task	Hexadecimal RS-232 Command Strings					
	32-inch LCD-PRO	**40-inch LCD-PRO**	**42-inch LCD-PRO**	**47-inch LCD PRO**	**52-inch LCD-PRO**	**55-inch LCD-PRO**
Power						
On	rs232.tx_hex= 6B612030312030310D	rs232.tx_hex= AA11FF010112	rs232.tx_hex= 6B612030312030310D	rs232.tx_hex= 6B612030312030310D	rs232.tx_hex= AA11FF010112	rs232.tx_hex= 3462303131303030303310D
Off	rs232.tx_hex= 6B612030312030300D	rs232.tx_hex= AA11FF010011	rs232.tx_hex= 6B612030312030300D	rs232.tx_hex= 6B612030312030300D	rs232.tx_hex= AA11FF010011	rs232.tx_hex= 3462303131303030303300D

Table 16-1   RS-232 Commands to Manage Cisco LCD Displays (continued)

Task	Hexadecimal RS-232 Command Strings					
	32-inch LCD-PRO	40-inch LCD-PRO	42-inch LCD-PRO	47-inch LCD PRO	52-inch LCD-PRO	55-inch LCD-PRO
Input Source						
HDMI	rs232.tx_hex= 6B622030312030380D	rs232.tx_hex= AA14FF012135	rs232.tx_hex= 6B622030312030380D	rs232.tx_hex= 6B622030312030380D	rs232.tx_hex= AA14FF012135	rs232.tx_hex= 3462303131303130300D
DVI	—	rs232.tx_hex= AA14FF01182C	—	—	rs232.tx_hex= AA14FF01182C	rs232.tx_hex= 3462303131303130300310D
Component	rs232.tx_hex= 6B622030312030340D	—	rs232.tx_hex= 6B622030312030340D	rs232.tx_hex= 6B622030312030340D	rs232.tx_hex= AA14FF01081C	rs232.tx_hex= 3462303131303130300360D
AV	rs232.tx_hex= 6B622030312030320D	rs232.tx_hex= AA14FF010C20	rs232.tx_hex= 6B622030312030320D	rs232.tx_hex= 6B622030312030320D	rs232.tx_hex= AA14FF010C20	rs232.tx_hex= 3462303131303130300380D
PC	rs232.tx_hex= 6B622030312030370D	rs232.tx_hex= AA14FF011428	rs232.tx_hex= 6B622030312030370D	rs232.tx_hex= 6B622030312030370D	rs232.tx_hex= AA14FF011428	rs232.tx_hex= 3462303131303130300330D
S-Video	—	—	—	—	—	rs232.tx_hex= 3462303131303130300370D
BNC	—	—	—	—	rs232.tx_hex= AA14FF011E32	—
Mute						
On	rs232.tx_hex= 6B6520303120300D	rs232.tx_hex= AA13FF010114	rs232.tx_hex= 6B6520303120300D	rs232.tx_hex= 6B6520303120300D	rs232.tx_hex= AA13FF010114	rs232.tx_hex= 3462303135353030310D
Off	rs232.tx_hex= 6B6520303120310D	rs232.tx_hex= AA13FF010013	rs232.tx_hex= 6B6520303120310D	rs232.tx_hex= 6B6520303120310D	rs232.tx_hex= AA13FF010013	rs232.tx_hex= 3462303135353030300D
Volume						
0%	rs232.tx_hex= 6B662030312030300D	rs232.tx_hex= AA12FF010012	rs232.tx_hex= 6B662030312030300D	rs232.tx_hex= 6B662030312030300D	rs232.tx_hex= AA12FF010012	rs232.tx_hex= 3462303131353030300D
25%	rs232.tx_hex= 6B662030312031390D	rs232.tx_hex= AA12FF01192B	rs232.tx_hex= 6B662030312031390D	rs232.tx_hex= 6B662030312031390D	rs232.tx_hex= AA12FF01192B	rs232.tx_hex= 3462303131353030032350D
50%	rs232.tx_hex= 6B662030312033320D	rs232.tx_hex= AA12FF013244	rs232.tx_hex= 6B662030312033320D	rs232.tx_hex= 6B662030312033320D	rs232.tx_hex= AA12FF013244	rs232.tx_hex= 3462303131353030035300D
75%	rs232.tx_hex= 6B662030312034620D	rs232.tx_hex= AA12FF014b5D	rs232.tx_hex= 6B662030312034620D	rs232.tx_hex= 6B662030312034620D	rs232.tx_hex= AA12FF014b5D	rs232.tx_hex= 3462303131353030037350D
100%	rs232.tx_hex= 6B662030312036340D	rs232.tx_hex= AA12FF016476	rs232.tx_hex= 6B662030312036340D	rs232.tx_hex= 6B662030312036340D	rs232.tx_hex= AA12FF016476	rs232.tx_hex= 3462303131353031300D
Brightness						
25%	rs232.tx_hex= 6B6820312031390D	rs232.tx_hex= AA25FF01193E	rs232.tx_hex= 6B6820312031390D	rs232.tx_hex= 6B6820312031390D	rs232.tx_hex= AA25FF01193E	rs232.tx_hex= 3462303131313030032350D
50%	rs232.tx_hex= 6B6820312033320D	rs232.tx_hex= AA25FF013257	rs232.tx_hex= 6B6820312033320D	rs232.tx_hex= 6B6820312033320D	rs232.tx_hex= AA25FF013257	rs232.tx_hex= 3462303131313030035300D
75%	rs232.tx_hex= 6B6820312034620D	rs232.tx_hex= AA25FF014B70	rs232.tx_hex= 6B6820312034620D	rs232.tx_hex= 6B6820312034620D	rs232.tx_hex= AA25FF014B70	rs232.tx_hex= 3462303131313030037350D
100%	rs232.tx_hex= 6B6820312036340D	rs232.tx_hex= AA25FF016489	rs232.tx_hex= 6B6820312036340D	rs232.tx_hex= 6B6820312036340D	rs232.tx_hex= AA25FF016489	rs232.tx_hex= 3462303131313031300D
Contrast						
25%	rs232.tx_hex= 6B672030312031390D	rs232.tx_hex= AA24FF01193D	rs232.tx_hex= 6B672030312031390D	rs232.tx_hex= 6B672030312031390D	rs232.tx_hex= AA24FF01193D	rs232.tx_hex= 3462303131313132350D
50%	rs232.tx_hex= 6B672030312033320D	rs232.tx_hex= AA24FF013256	rs232.tx_hex= 6B672030312033320D	rs232.tx_hex= 6B672030312033320D	rs232.tx_hex= AA24FF013256	rs232.tx_hex= 3462303131313130035300D
75%	rs232.tx_hex= 6B672030312034620D	rs232.tx_hex= AA24FF014B6F	rs232.tx_hex= 6B672030312034620D	rs232.tx_hex= 6B672030312034620D	rs232.tx_hex= AA24FF014B6F	rs232.tx_hex= 3462303131313130037350D
100%	rs232.tx_hex= 6B672030312036340D	rs232.tx_hex= AA24FF016488	rs232.tx_hex= 6B672030312036340D	rs232.tx_hex= 6B672030312036340D	rs232.tx_hex= AA24FF016488	rs232.tx_hex= 3462303131313131300D

Table 16-1 **RS-232 Commands to Manage Cisco LCD Displays (continued)**

Task	Hexadecimal RS-232 Command Strings					
	32-inch LCD-PRO	40-inch LCD-PRO	42-inch LCD-PRO	47-inch LCD PRO	52-inch LCD-PRO	55-inch LCD-PRO
Sharpness						
25%	rs232.tx_hex= 6B6B2030312031390D	rs232.tx_hex= AA26FF01193F	rs232.tx_hex= 6B6B2030312031390D	rs232.tx_hex= 6B6B2030312031390D	rs232.tx_hex= AA26FF01193F	rs232.tx_hex= 346230313131323032350D
50%	rs232.tx_hex= 6B6B2030312033320D	rs232.tx_hex= AA26FF013258	rs232.tx_hex= 6B6B2030312033320D	rs232.tx_hex= 6B6B2030312033320D	rs232.tx_hex= AA26FF013258	rs232.tx_hex= 346230313131323035300D
75%	rs232.tx_hex= 6B6B2030312034620D	rs232.tx_hex= AA26FF014b71	rs232.tx_hex= 6B6B2030312034620D	rs232.tx_hex= 6B6B2030312034620D	rs232.tx_hex= AA26FF014b71	rs232.tx_hex= 346230313131323037350D
100%	rs232.tx_hex= 6B6B2030312036340D	rs232.tx_hex= AA26FF01648A	rs232.tx_hex= 6B6B2030312036340D	rs232.tx_hex= 6B6B2030312036340D	rs232.tx_hex= AA26FF01648A	rs232.tx_hex= 346230313131323130300D
Colorfulness[1] (Saturation)						
25%	rs232.tx_hex= 6B692030312031390D	rs232.tx_hex= AA27FF011940	rs232.tx_hex= 6B692030312031390D	rs232.tx_hex= 6B692030312031390D	rs232.tx_hex= AA27FF011940	rs232.tx_hex= 346230313131363032350D
50%	rs232.tx_hex= 6B692030312033320D	rs232.tx_hex= AA27FF013259	rs232.tx_hex= 6B692030312033320D	rs232.tx_hex= 6B692030312033320D	rs232.tx_hex= AA27FF013259	rs232.tx_hex= 346230313131363035300D
75%	rs232.tx_hex= 6B692030312034620D	rs232.tx_hex= AA27FF014B72	rs232.tx_hex= 6B692030312034620D	rs232.tx_hex= 6B692030312034620D	rs232.tx_hex= AA27FF014B72	rs232.tx_hex= 346230313131363037350D
100%	rs232.tx_hex= 6B692030312036340D	rs232.tx_hex= AA27FF01648B	rs232.tx_hex= 6B692030312036340D	rs232.tx_hex= 6B692030312036340D	rs232.tx_hex= AA27FF01648B	rs232.tx_hex= 346230313131363130300D
Tint						
25%	rs232.tx_hex= 6B6A2030312031390D	rs232.tx_hex= AA28FF011941	rs232.tx_hex= 6B6A2030312031390D	rs232.tx_hex= 6B6A2030312031390D	rs232.tx_hex= AA28FF011941	rs232.tx_hex= 346230313131353032350D
50%	rs232.tx_hex= 6B6A2030312033320D	rs232.tx_hex= AA28FF01325A	rs232.tx_hex= 6B6A2030312033320D	rs232.tx_hex= 6B6A2030312033320D	rs232.tx_hex= AA28FF01325A	rs232.tx_hex= 346230313131353035300D
75%	rs232.tx_hex= 6B6A2030312034620D	rs232.tx_hex= AA28FF014B73	rs232.tx_hex= 6B6A2030312034620D	rs232.tx_hex= 6B6A2030312034620D	rs232.tx_hex= AA28FF014B73	rs232.tx_hex= 346230313131353037350D
100%	rs232.tx_hex= 6B6A2030312036340D	rs232.tx_hex= AA28FF01648C	rs232.tx_hex= 6B6A2030312036340D	rs232.tx_hex= 6B6A2030312036340D	rs232.tx_hex= AA28FF01648C	rs232.tx_hex= 346230313131353130300D
Remote Control Lock[2]						
On	—	AA36FF010036	—	—	AA36FF010036	—
Off	—	AA36FF010037	—	—	AA36FF010037	—
Panel Lock[3]						
On	—	rs232.tx_hex= AA5FFF010160	—	—	rs232.tx_hex= AA5FFF010160	rs232.tx_hex= 346230313130333030310D
Off	—	rs232.tx_hex= AA5FFF01005F	—	—	rs232.tx_hex= AA5FFF01005F	rs232.tx_hex= 346230313130333030300D
Safety Lock[4]						
On	rs232.tx_hex= 6B6D2030312030310D	rs232.tx_hex= AA5DFF01015E	rs232.tx_hex= 6B6D2030312030310D	rs232.tx_hex= 6B6D2030312030310D	rs232.tx_hex= AA5DFF01015E	—
Off	rs232.tx_hex= 6B6D2030312030300D	rs232.tx_hex= AA5DFF01005D	rs232.tx_hex= 6B6D2030312030300D	rs232.tx_hex= 6B6D2030312030300D	rs232.tx_hex= AA5DFF01005D	—

1. An image with a colorfulness value of zero percent is grayscale, while the same image with a colorfulness value of 100 percent has vivid colors.

2. The display ignores its handheld remote control but still responds to other commands.

3. The display ignores its built-in buttons but still responds to other commands.

4. Control the display exclusively through your DMP. Neither the handheld remote control nor buttons on the display can override your off-site management.

Step 4   Set other, optional values as needed.

Step 5   Click **Submit** to save your work, so that you might someday use it.

OR

Click **Cancel** to discard your work.

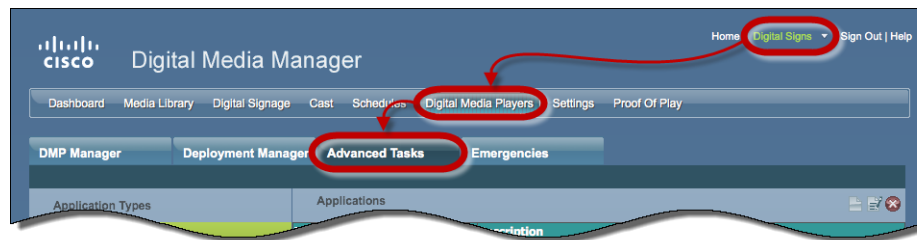**Step 6**   Stop. You have completed this procedure.

What to Do Next

- *Would you like to **delete** a saved command?*
  Proceed to the "Delete Equipment Settings That Use RS-232 Syntax" section on page 16-25.

Delete Equipment Settings That Use RS-232 Syntax

You can delete any of your named and saved RS-232 command strings.

Procedure

Step 1   Choose **Digital Media Players > Advanced Tasks**.

Step 2   Click **System Tasks** in the Application Types list.

Step 3   Find your editing target in the Applications table.

Step 4   Click its named row in the Applications table.

Step 5   Click 🛑 **Delete Application**.

Step 6   Click **Submit** to commit this deletion.

OR

Click **Cancel** to abandon this deletion.

Step 7   Stop. You have completed this procedure.

Related Topics

- RS-232 Commands to Manage Cisco LCD Displays

DVI

Support DVI Management

- Prepare a 40- or 52-inch Cisco LCD to Support Centralized Management through DVI, page 16-26

Prepare a 40- or 52-inch Cisco LCD to Support Centralized Management through DVI

Note   Only our 40-inch and 52-inch LCD display models support DVI connections.

When you use an HDMI cable or a DVI cable to connect your DMP to a 40- or 52-inch Cisco LCD display, you can use Digital Signs to centrally manage the LCD display.

When unmodified HDMI is the connection type from a DMP to either of these display models, centralized management from DMM works immediately, without any prerequisites. However, when you combine HDMI with a DVI adapter, you must complete a simple task **at the physical installation site** for your display before you can start to centrally manage it.

Before You Begin

- Activate RS-232 command access for your 40-inch or 52-inch display.

Procedure

Step 1   Press **Menu** on the remote control for your 40-inch or 52-inch LCD display.

OR

Press **Menu** on the LCD display front panel.

Step 2   Choose **Input > Source List > DVI**, and then press **Enter**.

Step 3   Choose **Input > Edit Name > DVI > HD STB**, and then press **Enter**.

Step 4   Stop. You have completed this procedure.

Related Topics

- Elements to Activate RS-232 for Supported LCD Display Brands (except DMTech), page 16-40
- RS-232 Commands to Manage Cisco LCD Displays
- Use Predefined Tasks to Configure and Manage Equipment, page 16-28

HDMI

Support Autodetection

Activate or Deactivate HDMI Autodetection

Procedure

Step 1   Deploy the System Task event called **HDMI Display Autotection On**.

OR

Deploy the System Task event called **HDMI Display Autodetection Off**.

Step 2   Stop. You have completed this procedure.

Related Topics

Activate or Deactivate Resolution Autodetection

Before You Begin

- Activate HDMI autodetection.

Procedure

Step 1   Deploy the System Task event called **Screen Resolution Autotection On**.

OR

Deploy the System Task event called **Screen Resolution Autodetection Off**.

Step 2   Stop. You have completed this procedure.

Related Topics

Use Predefined Tasks to Configure and Manage Equipment

Configure DMP Output

Manage Presentation Systems

Define or Edit DMP Output Settings for A/V

You can configure the audio and video signals that DMPs send to their attached presentation systems.

Procedure

Step 1   Choose **Digital Media Players > Advanced Tasks**.
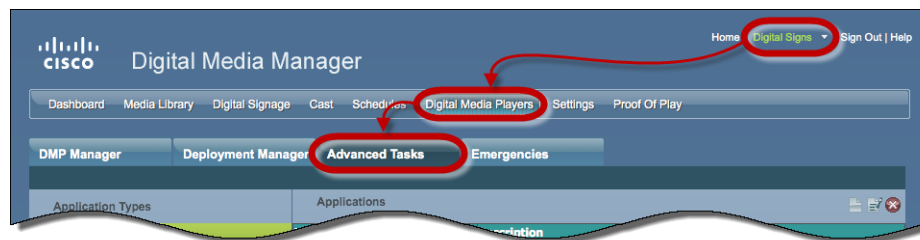
Step 2   Click **DMP Audio/Video Settings** in the Application Types list.

Step 3   Do one of the following.

- *Are these new settings?*

   When your A/V settings are new
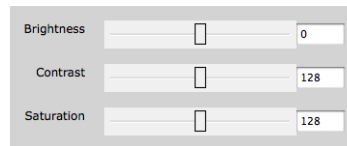
   a. Click 🗋 **Add New Application**.

   The page is refreshed so that you can choose options and enter values.
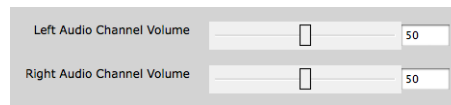
   b. Enter a name.

   For example, the name might identify a locale where the lighting is dim, for which you must adjust the brightness.

   c. Set values for brightness, contrast, and saturation.

Brightness		0
Contrast		128
Saturation		128

   d. Set values for the Left and Right audio channels.

Left Audio Channel Volume		50
Right Audio Channel Volume		50

   e. Set any other, optional values as needed.

   f. Proceed to Step 4.

- *Are you editing saved settings?*

   When your A/V settings should change

   a. Find your editing target in the Applications table.

   a. Click its named row in the Applications table.

   b. Click ✍ **Edit Application**.

   The page is refreshed so that you can choose options and enter values.

   c. As needed:
      - Edit the name.
      - Edit values for brightness, contrast, or saturation.
      - Edit values for the Left or Right audio channels.
      - Edit other, optional values as needed.

   d. Proceed to Step 4.

Step 4   Click **Submit** to save your work, so that you might someday use it.

     OR

     Click **Cancel** to discard your work.

Step 5   Stop. You have completed this procedure.

Related Topics

- Elements to Configure DMP Audio/Video Settings, page 16-39

Delete DMP Output Settings for A/V

You can delete any of your named and saved settings for DMP audio and video output.

Procedure

Step 1   Choose **Digital Media Players > Advanced Tasks**.

Step 2   Click **DMP Audio/Video Settings** in the Application Types list.

Step 3   Find your deletion target in the Applications table.

Step 4   Click its named row in the Applications table.

Step 5   Click ⊗ **Delete Application**.

Step 6   Click **Submit** to commit this deletion.

OR

Click **Cancel** to abandon this deletion.

Step 7   Stop. You have completed this procedure.

Related Topics

- Elements to Configure DMP Audio/Video Settings, page 16-39

Use Simple Menus to Control A/V Settings

You can define and save a customized bundle of device configuration settings for certain popular presentation system models. We provide this option for models that pass our tests for DMP compatibility.
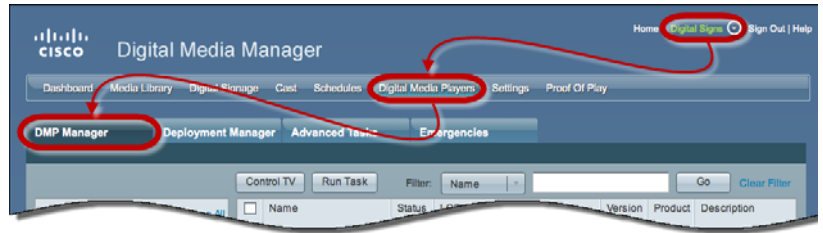
Procedure

Step 1   Do one of the following.

- *Would you prefer to start from your DMP inventory?*

When you will start from your DMP inventory

a. Choose **Digital Media Players > DMP Manager**.

b. Choose an option from the Filter list to restrict which DMPs the table describes.

OR

Browse in the DMP Groups tree to restrict which DMPs the table describes.

c. Click a DMP in the table to choose it.

OR

Use check boxes to choose multiple DMPs whose attached presentation systems are identical.

d. Click Control TV, above the DMP List table..

e. Proceed to Step 2.

■ **Procedures**

- *Would you prefer to start from your collection of advanced tasks?*

When you will start from your collection of advanced tasks

a. Choose **Digital Media Players > Advanced Tasks**.
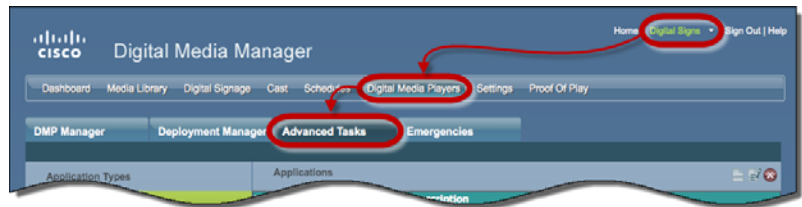
b. Click **DMP Display Controls** in the Application Types list.

c. Click 🗋 **Add New Application**.

The page is refreshed so that you can choose options and enter values.

d. Proceed to Step 2.

Step 2 Choose your display's make and model from the TV Type list.
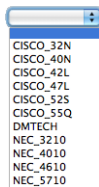
✎ **Note**   We provide preconfigured tasks for only the presentation system models that pass our tests for DMP compatibility.

Step 3 Enter a name for the bundle of device configuration settings that you are about to define.

Step 4 Set values for video attributes.

Step 5 Set values for audio attributes.

Step 6 Set other, optional values as needed.

Step 7 Click **Submit** to save your work, so that you might someday use it.

OR

Click **Cancel** to discard your work.

Step 8 Stop. You have completed this procedure.

What to Do Next

- *Would you like to **edit** what you saved?*
  Proceed to the "Edit A/V Settings That You Chose from Menus" section on page 16-33.

- *Would you like to **delete** what you saved?*
  Proceed to the "Delete A/V Settings That You Chose from Menus" section on page 16-34.

Related Topics

-
-
-
-

Edit A/V Settings That You Chose from Menus

You can edit any of your named and saved RS-232 command string bundles.

Procedure

Step 1   Choose **Digital Media Players > Advanced Tasks**.
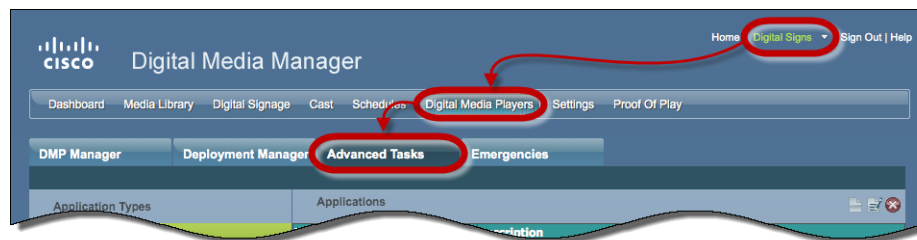
Step 2   Click **DMP Display Controls** in the Application Types list.

Step 3   Find your editing target in the Applications table.

Step 4   Click its named row in the Applications table.

Step 5   Click ✏ **Edit Application**.

The page is refreshed so that you can choose options and enter values.

Step 6   As needed.:

- Edit the name.
- Edit values for contrast, brightness, sharpness, color, or tint.
- Edit values for audio.
- Edit other, optional values.

Step 7   Click **Submit** to save your work, so that you might someday use it.

OR

Click **Cancel** to discard your work.

Step 8   Stop. You have completed this procedure.

■ **Reference**

What to Do Next

- *Would you like to **delete** what you edited?*
 Proceed to the "Delete A/V Settings That You Chose from Menus" section on page 16-34.

Related Topics

- Prepare a 40- or 52-inch Cisco LCD to Support Centralized Management through DVI, page 16-26
- Elements to Choose A/V Settings from Menus, page 16-36

Delete A/V Settings That You Chose from Menus

You can delete any of your named and saved RS-232 command strings.

Procedure

Step 1   Choose **Digital Media Players > Advanced Tasks**.

Step 2   Click **DMP Display Controls** in the Application Types list.

Step 3   Find your deletion target in the Applications table.

Step 4   Click its named row in the Applications table.

Step 5   Click ⊗ **Delete Application**.

Step 6   Click **Submit** to commit this deletion.

    OR

    Click **Cancel** to abandon this deletion.

Step 7   Stop. You have completed this procedure.
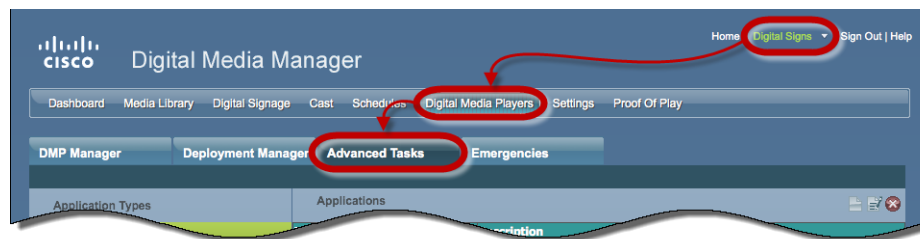
Related Topics

- Use RS-232 Syntax to Control Digital Signs, page 16-21

Reference

- Video and Audio Signal Interfaces, page 16-35
- Supported Touchscreen Drivers, page 16-36
- Software UI and Field Reference Tables, page 16-36
- FAQs and Troubleshooting, page 16-41

Video and Audio Signal Interfaces

DMP 4305G

DMP 4310G

DMP 4400G

Table 16-2   Media Signal Interfaces

Category	Chassis Label		DMP 4305G	DMP 4310G	DMP 4400G
Video connectors	HDMI 1.1	• HDMI	**1**	0	**1**
	HDMI 1.3[1]		0	**1**	0
	Component[2]	• YPbPr/S-Video	0	**1**	0
		• S-VIDEO/YPbPr	**1**	0	0
		• S-Video	0	0	**1**
	Composite	• CVBS	**1**	0[3]	**1**
Audio connectors	3.5mm jack[4]	• Audio	0	**1**	**1**
	RCA	• SPDIF	0	0	**1**
		• RIGHT	**1**	0	0
		• LEFT	**1**	0	0

1. Backward-compatible to HDMI 1.1.

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

3. There is no Composite CVBS connector on a DMP 4310G. Its YPbPr/S-Video connector supports Composite CVBS via an S-Video-to-Composite adapter.

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

Supported Touchscreen Drivers

DMP Model	Supported Drivers
DMP 4400G	• 3M MicroTouch • ELO Acoustic Pulse Recognition systems and non-APR systems • ELO non-Acoustic Pulse Recognition systems • GeneralTouch ST6001S and ST6201 • Zytronic Zybrid
DMP 4310G	• 3M Touch Systems Capacitive Pulse SCT • 3M Dispersive Signal DST • 3M Projected Capacitive PCT (with single touch) • ELO non-Acoustic Pulse Recognition systems • GeneralTouch ST6001S and ST6201

Software UI and Field Reference Tables

Elements to Choose A/V Settings from Menus

Navigation Path

Either of these:

- Digital Media Players > DMP Manager > Control TV
- Digital Media Players > Advanced Tasks > DMP Audio/Video Settings

Table 16-3   Elements for Menu-driven Settings

Element	Description
TV Type	Choose the manufacturer and the model. **Tip Other elements on this page:** • Are not available until after you choose an option from this list. • Vary according to your choice from this list.
Name	A unique and human-readable name for these settings. It is unique in the sense that you have not used it previously as the name for anything that can be scheduled. You must enter a name.
Description	A brief description. The description is optional.
Contrast	A contrast setting value in the range from 0 to 100. Set the contrast. Then, check **Apply**.

Table 16-3   Elements for Menu-driven Settings (continued)

Element	Description
Brightness	A brightness setting value in the range from 0 to 100. Set the brightness. Then, check **Apply**.
Sharpness	A sharpness (clarity) setting value in the range from 0 to 100. Set the sharpness. Then, check **Apply**.
Color	A color setting value in the range from 0 to 100. Set the color. Then, check **Apply**.
Tint	A tint setting value in the range from 0 to 100. Set the tint. Then, check **Apply**.
TV Channel	An analog TV signal frequency value in the range from 0 to 99. Set the signal. Then, check **Apply**.
Audio Volume	An audio volume level setting value in the range from 0 to 100. Set the volume. Then, check **Apply**.
Mute	Choose whether to mute your presentation system.
Input	Choose the method that corresponds to your video signal cable, such as HDMI or S-Video.
Power	Choose whether to power your presentation system.

Cisco Displays Only

Safety Lock	• Choose **On** to lock the front panel controls and the remote control buttons for your LCD Professional Series display. When anyone at its physical location presses buttons on the remote control or uses controls on the display front panel while they are locked, an on-screen message explains that the lock is engaged. There is no effect when anyone at its physical location uses the remote control unit to enter the safety lock PIN. • Choose **Off** to unlock these controls. It does not matter how you locked them. When you use Digital Signs to remotely unlock the remote control unit and controls on the display front panel, it is not necessary to enter the safety lock PIN. Note **Any option that you choose from this list clears your choice, if any, in the Remote Control Lock and Panel Lock lists.** You can choose only one option among all three of these lists, which are hidden unless you chose CISCO_40N or CISCO_52S from the TV Type list.

Table 16-3   Elements for Menu-driven Settings (continued)

Element	Description
Remote Control Lock	• Choose **On** to lock the remote control unit for your LCD Professional Series display. When anyone at its physical location presses buttons on the remote control while it are locked, an on-screen message explains that the lock is engaged. There is no effect when anyone at its physical location uses the remote control unit to enter the safety lock PIN. • Choose **Off** to unlock the remote control. It does not matter how you locked it. When you use Digital Signs to remotely unlock a remote control, it is not necessary to enter the safety lock PIN. Note **Any option that you choose from this list clears your choice, if any, in the Safety Lock and Panel Lock lists.** You can choose only one option among all three of these lists, which are hidden unless you chose CISCO_40N or CISCO_52S from the TV Type list.
Panel Lock	• Choose **On** to lock the front panel controls for your LCD Professional Series display. When anyone at its physical location uses controls on the display front panel while they are locked, an on-screen message explains that the lock is engaged. • Choose **Off** to unlock the front panel controls. It does not matter how you locked them. When you use Digital Signs to remotely unlock these controls, it is not necessary to enter the safety lock PIN. Note **Any option that you choose from this list clears your choice, if any, in the Safety Lock and Remote Control Lock lists.** You can choose only one option among all three of these lists, which are hidden unless you chose CISCO_40N or CISCO_52S from the TV Type list. Tip Alternatively, anyone at its physical location can use the remote control unit to unlock front panel controls on your LCD Professional Series Display, by entering the safety lock PIN correctly when prompted to enter it.

Related Topics

- Use Simple Menus to Control A/V Settings, page 16-31

Elements to Configure DMP Audio/Video Settings

Navigation Path

Digital Media Players > Advanced Tasks > DMP Audio/Video Settings

Table 16-4   Elements to Manage DMP A/V Settings

Element	Description
Name	A unique and human-readable name for these settings. It is unique in the sense that you have not used it previously as the name for anything that can be scheduled. You must enter a name.
Description	A brief description. The description is optional.
Brightness	The setting to compensates for deficiencies in on-screen brightness. Brightness compensation values can range from –128 to 127.
Contrast	The setting to compensate for any deficiencies in on-screen contrast. Contrast compensation values can range from 0 to 255. The default is 128.
Saturation	The setting to compensate for any deficiencies in on-screen color saturation. Saturation compensation values can range from 0 to 255. The default is 128.
Left Audio Channel Volume	The setting to control how loudly or softly your DMP outputs sound in the left audio channel. Volume can range from 0 to 100, where 0 is silent. The default is 50.
Right Audio Channel Volume	The setting to control how loudly or softly your DMP outputs sound in the left audio channel. Volume can range from 0 to 100, where 0 is silent. The default is 50.

Related Topics

Elements to Control HDMI Display Autodetection

Navigation Path

Digital Media Players > Advanced Tasks > System Tasks > HDMI Display Autodetection...

Table 16-5   Elements to Activate or Deactivate Attribute Autodetection

Application Name	Description, Icons, and Options
HDMI Display Autodetection...	Enable or disable DMP display type autodetection. • HDMI Display Autodetection On • HDMI Display Autodetection Off

Related Topics

Elements to Control Screen Resolution Autodetection

Navigation Path

Digital Media Players > Advanced Tasks > System Tasks > Screen Resolution Autodetection...

Table 16-6   Elements to Activate or Deactivate Screen Resolution Autodetection

Application Name	Description, Icons, and Options
Screen Resolution Autodetection...	Enable or disable autodetection of the resolutions that your DMP displays support. • Screen Resolution Autodetection On • Screen Resolution Autodetection Off

Related Topics

- Activate or Deactivate Resolution Autodetection, page 16-27

Elements to Activate RS-232 for Supported LCD Display Brands (except DMTech)

Tip   **Before you pass RS-232 commands through your DMPs and to your DMP displays, first confirm that each DMP is connected to its display by a signal cable that supports RS-232 signals.** Otherwise, your displays will never receive the commands that you define for them.

Navigation Path

Digital Media Players > Advanced Tasks > System Tasks > RS-232: Control Supported, Non-DMTech Displays

Table 16-7   Elements to Activate DMP Support for RS-232 for non-DMTech Displays

Element	Description
RS-232: Control supported, non-DMTech displays	Cause DMPs to send RS-232 management instructions to an LCD display manufactured by Cisco, Samsung, LG, NEC, or other supported manufacturers.

Related Topics

- Prepare Cisco Displays to Support RS-232 Syntax, page 16-11

Elements to Activate RS-232 for LCD Displays by DMTech

Tip   Before you pass RS-232 commands through your DMPs and to your DMP displays, first confirm that each DMP is connected to its display by a signal cable that supports RS-232 signals. Otherwise, your displays will never receive the commands that you define for them.

Navigation Path

Digital Media Players > Advanced Tasks > System Tasks > RS-232: Control DMTech Displays

Table 16-8   Elements to Activate DMP Support for RS-232 for DMTech Displays

Application Name	Description, Icons, and Options
System Tasks	
RS-232: Control DMTech displays	Cause DMPs to send RS-232 management instructions to an LCD display manufactured by DMTech.

Related Topics

- Bootstrap DMTech Displays to Enable Their RS-232 Support, page 16-16

FAQs and Troubleshooting

- FAQs, page 16-41
- Troubleshoot Cisco Professional Series LCD Displays, page 16-43

FAQs

- FAQs About Cleaning and Maintenance, page 16-41
- FAQs About Daily Operation, page 16-42
- FAQs About RS-232, page 16-42
- FAQs About Touchscreens, page 16-42
- FAQs About Product Quality, page 16-42

FAQs About Cleaning and Maintenance

- *How should I clean and maintain a Professional Series display?*

Q.   How should I clean and maintain a Professional Series display?

A.   For cleaning and maintenance guidelines, see the Safety Instructions section called "Cleaning the Display, Its Plug, and Its Outlet Safely" in *User Guide for Cisco LCD Professional Series Displays* on Cisco.com.

FAQs About Daily Operation

- *How long does display autodetection take?*
- *Why might display autodetection fail?*

Q. **How long does display autodetection take?**

A. Autodetection takes less than 8 seconds in most cases and less than 2 seconds in some cases.

Q. **Why might display autodetection fail?**

A. The display autodetection feature fails unless you use an HDMI signal cable (with or without a DVI adapter) to connect a presentation system to your DMP.

FAQs About RS-232

- *Why does my DMP 4400G run very slowly while its RS-232 features are enabled?*

Q. **Why does my DMP 4400G run very slowly while its RS-232 features are enabled?**

A. The likeliest explanation is that your signal cable is faulty. Try substituting the equivalent cable from a DMP that operates as expected when RS-232 features are enabled. If doing this has no effect, restore your DMP to its factory-default settings and then configure it once more to support RS-232.

FAQs About Touchscreens

- *What should I do when a message states that my touchscreen must download a characterization file?*
- *When is it necessary to repeat the calibration of a touchscreen?*
- *What can cause a properly calibrated touchscreen to operate as if it is not calibrated?*

Q. **What should I do when a message states that my touchscreen must download a characterization file?**

A. Do not disturb or interrupt the automated process. It occurs only once, and takes approximately 10 minutes to finish. When it is finished, your touchscreen will clear the message automatically.

Q. **When is it necessary to repeat the calibration of a touchscreen?**

A. You must repeat this calibration whenever you:

- Rotate a touchscreen or change its resolution.
- Replace a touchscreen.

Q. **What can cause a properly calibrated touchscreen to operate as if it is not calibrated?**

A. If this happens to you, unplug the serial cable (or USB cable) that connects this touchscreen to your DMP. Then, plug that cable back in again.

FAQs About Product Quality

- *Why are some pixels unexpectedly bright, or black?*

Q. **Why are some pixels unexpectedly bright, or black?**

A. Cisco LCD displays use advanced semiconductor technology with extremely high precision. Nonetheless, the red, green, blue and white pixels might seem unexpectedly bright sometimes, or you might notice some black pixels. This is not the result of low quality or a malfunction and you can continue to use your display without incident.

Troubleshoot Cisco Professional Series LCD Displays

Troubleshoot the Power Indicator

Problem   **The screen is blank AND the power indicator is off.**

Solution   Ensure that the power cord is firmly connected and the display is turned on.

Problem   **The power indicator blinks.**

Solution   Wait for less than 1 minute. The display is saving changes made to its settings.

Troubleshoot Image Quality

Problem   **A message states, "Check Signal Cable."**

Solution   Make sure that the:

- Signal cable is firmly connected to the video sources.
- Video sources are turned on.

Problem   **The image rolls vertically.**

Solution   Make sure that the signal cable is securely connected.

Problem   **The image is intermittently black** (CSCtw78742; CSCts83613)**.**

Solution   Avoid incompatible combinations.

- Have you used a DVI connector while our HDMI resolution autodetect feature was enabled on your DMP? And then, was the reported resolution called "1920 x 1080?" If so, you must disable the autodetection feature. Cisco DMP models support DVI connections only in combination with VESA-standard resolution values—and VESA standards do not include "1920 x 1080." Instead, their equivalent is called "VESA_1080p." You must choose and apply this resolution value manually.
- Do not enable HDMI autodetection with a display whose resolution is "DVI_1920p."
- Disable our HDMI resolution autodetect feature on your DMP when it reports that any 1080p presentation system characterizes its resolution as "VESA_1080p." Then, impose the resolution value manually that DMPs use: "HDMI_1080p."

Problem   The image is blurred.

Solution Try these possible workarounds.

- Run Frequency Coarse and Fine tuning.
- Turn Off the display, remove its accessories and signal cables, and then turn it On again.
- Set the resolution and frequency to the recommended ranges.

Problem   The image is too light OR too dark.

Solution Adjust the brightness and contrast.

Problem   Colors are not consistent, OR shadows are too dark, OR white areas are too white.

Solution Adjust the color.

Troubleshoot Audio Quality

Problem   Sound is too quiet OR is not audible.

Solution Check the volume level.

Problem   Sound frequency is too high OR too low.

Solution Check the levels for treble and bass.

Troubleshoot the Handheld Remote Control Unit

Problem   Buttons do not respond.

Solution Check...

- Battery polarities (+/-).
- If batteries have lost their charge.
- If the power is turned On.
- If the power cord is connected securely.
- If a fluorescent or neon lamp is turned On nearby.

Note   **When you use Digital Signs to lock your remote control and the front panel controls for your display, the remote control cannot unlock them.** Instead, you must switch the Safety Lock, Remote Control Lock, and Panel Lock toggles all to Off in Digital Signs.

Note   **When you use Digital Signs to lock your remote control, the remote control cannot unlock itself.** Instead, you must switch the Safety Lock and Remote Control Lock toggles both to Off in Digital Signs.

Run a Diagnostic Self-Test on a 40- or 52-inch Cisco LCD Display

Procedure

Step 1   Turn **Off** your display and turn **Off** every device connected to it.

Step 2   Disconnect all devices from your display.

Step 3   Turn **On** your display.

The self-test runs immediately.

- **PASS**—The LED power indicator remains green.
- **FAIL**—An on-screen message moves around on the screen, which says "Check Signal Cable."

Step 4   Stop. You have completed this procedure.

Reference