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**CAUTION:** The Caution symbol calls your attention to information that, if ignored, can adversely affect the performance of your Harmonic product, or that can make a procedure needlessly difficult.

**LASER DANGER:** The Laser symbol and the Danger alert call your attention to information about the lasers in this product that, if ignored, can cause physical harm to you.

**NOTE:** The Note symbol calls your attention to additional information that you will benefit from heeding. It may be used to call attention to an especially important piece of information you need, or it may provide additional information that applies in only some carefully delineated circumstances.

**IMPORTANT:** The Important symbol calls your attention to information that should stand out when you are reading product details and procedural information.

**TIP:** The Tip symbol calls your attention to parenthetical information that is not necessary for performing a given procedure, but which, if followed, might make the procedure or its subsequent steps easier, smoother, or more efficient.

In addition to these symbols, this guide may use the following text conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typed Command</td>
<td>Indicates the text that you type in at the keyboard prompt.</td>
</tr>
<tr>
<td>\texttt{&lt;Ctrl&gt;, &lt;Ctrl&gt;+&lt;Shift&gt;}</td>
<td>A key or key sequence to press.</td>
</tr>
<tr>
<td>\texttt{Links}</td>
<td>The \textit{italics in blue} text to indicate Cross-references, and hyperlink cross-references in online documents.</td>
</tr>
<tr>
<td>\textbf{Bold}</td>
<td>Indicates a button to click, or a menu item to select.</td>
</tr>
<tr>
<td>\texttt{ScreenOutput}</td>
<td>The text that is displayed on a computer screen.</td>
</tr>
<tr>
<td>\textit{Emphasis}</td>
<td>The \textit{italics} text used for emphasis and document references.</td>
</tr>
</tbody>
</table>

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Chapter 1

Introduction to the Distribution Management System

The Harmonic Distribution Management System (DMS) is used by broadcasters and content providers to control large device populations and monitor their RF statuses. DMS allows users to manage devices, entitlements and authorizations and to control over-the-air (OTA), in-band content distribution network elements for ProView receivers.

**IMPORTANT:** DMS 3.7.1 is supported by ProView 7000, ProView 7100 and ProView 8100. ProView 7X00 represents both ProView 7000 and ProView 7100 when referring to a feature that applies to both ProView models.

The DMS solution is ideal for content distribution to operators, affiliates and service providers, as well as distribution for digital terrestrial TV services.

DMS enables secure broadcast of video content over satellite or IP delivery networks, ensuring the delivery of content to authorized recipients only. DMS 3.2 provides individual or group entitlement control using Verimatrix embedded descrambling, CAS.

DMS is based on open standards, such as DVB SimulCrypt. The ProView 7100 and ProView 8100 include a module-based DVB-CI descrambler.

DMS maintains a database of all receivers in the network and stores customized information about each receiver. This enables you to manage individual and groups of receivers (in-band) with a return channel to monitor alarms and RF inputs. You can also filter lists to view receivers and affiliates with common attributes.

DMS can perform the following functions on ProView receivers:

- Upgrade firmware
- Activate firmware
- Reboot devices
- Update the configuration (RF tuning, port selection, decoding channel selection and more)
- Set CA entitlement and subscriber management (Verimatrix CAS)
- Schedule events for automated operation

DMS performs validation checks on immediate and scheduled commands, giving you time to take corrective action in case of any inconsistencies.

You can monitor events and commands in the system. Alarms and alerts draw your attention to events that might require a response. The Dashboard enables you to view multiple elements at the same time for monitoring and information purposes.

The DMS is a client-server based system that allows you to set up additional DMS Client PCs locally or remotely for operating or monitoring. The system supports hot and cold DMS server redundancy.

If you are setting up DMS for the first time, it is recommended that you first read the user guide in the following order:

- Chapter 2, Getting Started
- Chapter 6, Managing affiliates
- Chapter 9, Distribution Network Setup
- Chapter 10, Processing Profiles
Chapter 12, Setup
Chapter 2
Getting Started

The following topics describe how to get started with DMS and how to navigate around its GUI.

- Logging in to the DMS client
- DMS GUI orientation

Logging in to the DMS client

The DMS client is installed on a PC or a DMS server and is used to manage the DMS database and send commands to the receivers.

The following describes how to log in to the DMS client software for the first time.

To log in to the DMS client:

1. Double-click the DMS Client icon on the desktop.
2. If your Windows version prompts you to select firewall permissions, select all permissions.
3. In the Server field, type the server name or IP address of the DMS server to which you want to connect.
4. Log in with the default Username, admin.
   You do not need to enter a password.
5. Click Login.

   The DMS GUI is displayed. DMS Dashboard shows a sample layout.

NOTE: You can add, edit and remove user profiles. See User management.
DMS GUI orientation

The DMS GUI offers four tabs: Home, Configuration, Setup and Help.
Each tab includes groups representing different aspects of the system. Each group contains related menu items. See DMS GUI.

The Home tab contains the following groups:
- Device
- Affiliates
- Blackout
- Monitoring
- Audit Log
- Alarms

The Configuration tab contains the following groups:
- Distribution Network Setup
- Processing Profiles
- Device Attributes
- Actions

The Setup tab contains the following groups:
- Settings
- CAS
- Users and Roles
- Redundancy

NOTE: The Help tab contains Help topics and information about Harmonic.

Selecting a menu item opens a panel or dialog box. You use the panels and dialog boxes to view, and configure DMS features. All DMS panels can be re-positioned and re-sized.
Quick Launch toolbar

Above the tabs, there is a **Quick Launch** toolbar. The toolbar contains buttons that allow you to launch the most frequently used views.

![Quick Launch toolbar diagram](image)

Quick Launch Toolbar

Information buttons

The following items are displayed at the bottom of the page:

- **Alarms** - Launches the Alarms panel. The **Alarm** button color indicates the most severe alarm. See [DMS Dashboard](#).
- Name of the current user - Hovering over the user name displays the user role.
- Server IP address
- Server time

See [About Alarms](#) for information on how to monitor all the alarms in the system and receiver devices.

Using DMS panels

Many DMS tasks are performed in panels. You can display a number of panels from different menu groups simultaneously in the DMS window.

You can also float panels and set them to auto-hide. See [Panel GUI Operations](#).

Panel GUI Operations

**Zooming in on a single panel**

You can view all open panels at once and then zoom in to a specific one.

To zoom in to a single panel:

1. In the **Quick Launch** toolbar, click the **Overview the open views** icon.

See [Open Panels](#).
A page with a list of all open panels is displayed.

Open Panels

2. Do one of the following:
   - Double-click a panel name to go to the selected panel.
   - Select a panel name and double-click the panel preview.

   The selected panel is displayed.

About the Dashboard

When you open DMS, the Dashboard is displayed by default. The Dashboard shows an aggregative view that allows you to manage and monitor the system, such as system events, active commands, alarms and others.

Dashboard layout and configurations are stored on your client machine. You can display a combination of any of the following Dashboard panels:

- Audit Log
- Calendar
- Clock
- Image
- Devices
- Commands
- Alarms
- Scheduled Commands

Customizing the Dashboard

You can customize the elements that populate the Dashboard and select the panels you want to display. See DMS Dashboard.

The Dashboard can occupy all the screen or share the screen with other panels. For more information about Dashboard panels, see About the Dashboard panel.
To customize the Dashboard:

1. In the **Home** tab, click **Dashboard** in the **Monitoring** group.

   **TIP:** You can also display the Dashboard using the **Quick Launch** toolbar. See [Quick Launch Toolbar](#).

2. Click the **Show Palette** link.

   The Dashboard Palette is displayed.

3. Drag or double-click an icon to display its panel in the Dashboard.

   Clicking **Hide Palette** hides the Dashboard palette.

### About Groups

The Groups panel allows you to manage device groups, folders and subfolders in the system. See [Group and folder operations](#) for administrative functions that can be performed on groups.

### Opening the Groups panel

To open the Groups panel:

- Hover over the **Groups** tab on the left side of the screen.

  The Groups panel is displayed.
Groups Panel

Finding a folder or group

Use the Search box in the Groups panel to quickly find a folder or group in the system.

**To find a folder or group:**
1. Type a folder or group name in the **Search** field.
2. Click the magnifying glass and select a filter from the drop-down list (optional).
   
   The text is matched to your criteria as you type. Only matching folders or groups are displayed.

Monitoring RF inputs

The RF panel allows you to monitor receivers’ RF inputs.

To monitor a receiver’s RF inputs, the following must first be configured in the Device Browser’s Add Device dialog box (see *Adding devices* and *Updating a device*).
- Receiver must have a MAC address
- Receiver must be deployed
- Return channel must be enabled
- Management IP address (Return channel IP) must be set
- Management port number (Return Channel Port) must be set

**To display the RF panel:**
1. In the Groups panel, right-click a group to display the context menu.
2. Select **RF Monitor**. See *RF Monitor Panel*.

RF Monitor Panel
Configuring thresholds

Use Manage Thresholds to configure threshold values.

To configure a threshold:
1. In the RF Monitor panel, click Manage Thresholds.
   
   The Edit RF Monitor Thresholds dialog box is displayed.

2. Select the check boxes in the Active column for the RF values you want to define.
3. In the Value fields, type the threshold values.
4. Click OK.

   RF values are displayed in red in the panel if they exceed the value set according to the direction triangle in the Direction column.

About Device Browser

The Device Browser displays a list of all the devices in the system. See Device Browser Panel.

You can use the Device Browser to do the following:

- Administer the device database
- Group devices
- Update devices
- Initiate commands
- Apply authorizations to devices
Device Browser Panel

For information on managing devices, see Device Database Administration.

Displaying the Device Browser panel

To display the Device Browser panel:

- In the Home tab, click Device Browser in the Monitoring group.

  See DMS Dashboard.

TIP: You can also display the Device Browser with the Quick Launch toolbar, see Quick Launch Toolbar.

The Device Browser columns represent all the device attributes. See About columns for column-related functions.

The following table describes device icon colors and their definition.

### Device icon colors

<table>
<thead>
<tr>
<th>Device Icon</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deployed, not managed</td>
</tr>
<tr>
<td></td>
<td>Receiving commands</td>
</tr>
<tr>
<td></td>
<td>Not Authorized or Defined states</td>
</tr>
<tr>
<td></td>
<td>Return channel, no alarms</td>
</tr>
<tr>
<td></td>
<td>Return channel, alarms</td>
</tr>
</tbody>
</table>
Device icon colors

<table>
<thead>
<tr>
<th>Device Icon</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Warning alarm</td>
</tr>
<tr>
<td></td>
<td>Major alarm</td>
</tr>
<tr>
<td></td>
<td>Critical alarm</td>
</tr>
</tbody>
</table>

**About the Query Editor**

Use the Query Editor to define queries and save them for reuse. You can use multiple attributes and conditions in a single query using **And** or **Or** logical operators. The list of available conditions depends on the selected attribute type.

The Query Editor can be used with the following Dashboard panels: Device Browser, Affiliates Management, Audit Log and Alarms.

The Query Editor includes the following:

- **Attribute** drop-down list - Lists devices based on different attributes, for example, Name, MAC address or DPI Profile.
- **Conditions** drop-down list - Includes conditions according to the attributes of the device you selected.
- **Append** button - Adds your query to the Queries field.
- **Remove** and **Remove All** buttons - Removes selected or all queries from the Queries field.
- **Logical Operators** - Defines queries using an **And** or an **Or** operator. **And** and **Or** cannot be used in the same query.
- **Search** - Locate devices based on your search criteria.

**Query Editor**

**Manage Queries** - Reuse saved queries by selecting the query and clicking the green checkmark. See **Manage Queries List**. The query then appears in the appended queries field.
Manage Queries List

**NOTE:** You can remove the query by clicking the red X.

**Save Query** - Save queries and click **Manage Queries** to retrieve them.

**Update Query** - Edit an existing query’s name, description. Selecting the **Public** check box allows all users to view the query.

**Building queries**

**To display devices:**
1. Select an attribute from the **Attribute** drop-down list.
   
   **Device Type** is the default option.
2. Select a condition from the drop-down list.
   
   **is anything** is the default option.
3. Click **Append**.
   
   The query you defined is displayed in the **Queries** field.
4. Click **Search**.
   
   The bottom part of the Device Browser panel is populated with the devices you defined.

**TIP:** Selecting the **Device Type** attribute and the **is anything** condition displays all devices in the system.

**To add logical operators:**
1. Select an attribute from the **Attribute** drop-down list.
2. Select a condition from the drop-down list.
3. Type a value in the **Value(s)** field, if necessary.
4. Click **Append**.
5. Do one of the following:
   
   - Click **And** and repeat step 1 to step 4.
   - Click **Or** and repeat step 1 to step 4.
6. Click **Search**.
To remove search queries:

- Do one of the following:
  - Select the check box next to the queries you want to remove, then click Remove. The selected queries are removed from the appended queries field.
  - Click Remove All. All queries are removed from the appended queries field.

About columns

The default view is predefined with a selection of standard columns. You can customize the columns by right-clicking a column heading to display a drop-down menu from which you select the columns you want to display, hide or resize.

If your monitor is not wide enough to accommodate all the columns, right-click any column heading and clear Fit to Screen in the drop-down menu.

You can change the order in which the columns appear by dragging the column headings to a different location.

Sorting columns

Column items are sorted by default in ascending order. Clicking a column header displays an arrow in the column header that indicates if the column is sorted in ascending or descending order. DMS also allows you to sort a list.

To sort a list according to several columns:

- Do the following:
  - Click the column header for the primary sort.
  - Hold down the Ctrl key and click additional column headers for secondary sorting.

  Sequential numbers are displayed in each column header to indicate the sort weight.

Searching in the Device Browser

You can search for any device currently displayed in the Device Browser panel.

To search in the Device Browser panel:

1. In the Home tab, click Device Browser in the Device group.
2. Press <Ctrl> + <F>.

   A search bar appears at the bottom of the panel.

   Find Search Bar

3. Type your search term in the Find field and click one of the search options.
Selecting devices

You need to select the devices to apply commands, and define groups. Selection options are located under the Device and Commands drop-down menus.

Device Selection Options

To select devices:

- Do one of the following:
  - Click All to select all the devices in the list.
  - Click None to clear all devices in the list.
  - Click Selected to select highlighted devices in the list.
  - Press Ctrl + click to highlight non-sequential devices in the list.

About the Device Properties panel

The Device Properties tab is located on the right of the Device Browser. Use the Device Properties panel to display the following device properties:

- General
- Return Channels
- Advanced
- Authorization
- Affiliate Information
Device Properties panel

The Device Properties panel includes the following:

- **Filter box** – Displays entries that match the name you type
- **Category sort** – Sorts fields according to category.
- **Alphabetical sort** – Sorts fields alphabetically according to field name
- **Description** – Displays or hides a description of the selected field

**Viewing a device's properties**

You must have at least one device in the device database.

**To view a device's properties in the Device Properties panel:**

1. In the Home tab, click **Device Browser** in the Device group.
   
   The Device Browser panel is displayed.

2. Use the **Query Editor** to display devices.
   
   See *About the Query Editor*.

3. Select a device in the **Device Browser** panel.
   
   See *Selecting devices*.

4. Hover over the **Device Properties** tab on the right side of the window.
   
   The Device Properties panel is displayed. See *Device Properties panel*.

**Filtering Properties by property name or content**

The device properties filter uses pattern matching.
To filter the properties by property name or content:
- Type a few letters of the property name or content in the filter box. Properties with the same sequence of letters are displayed.

About Service Plan

The Service Plan panel displays the Transport Stream and Programs configuration. This configuration is used in the Input Profiles and Device Authorization features.

To display the Service Plan panel:
- In the Configuration tab, click Service Plan in the Distribution Network Setup group. The Service Plan panel is displayed.

![Service Plan Panel](image-url)
You can manage and monitor server hot-standby redundancy using two physical DMS servers. This utility is part of the server installation.

You can access the Redundancy Management option in one of two ways:

- DMS GUI
- Desktop icon (server installation only)

You can apply DMS Redundancy only after connecting both servers to an NTP server. Unsynchronized servers might cause some irregularity in performance. During the synchronization process, the servers are unavailable.

The following topics describe how to manage DMS redundancy.

- Configuring servers for redundancy
- Managing DMS redundancy
- Redundancy alarms

### Configuring servers for redundancy

Before managing or monitoring the redundancy servers, you must first configure the host addresses.

**To configure redundancy:**

1. Do one of the following:
   - In the Setup tab, click Redundancy Management in the Redundancy group.
   - Double-click the DMS Redundancy Control utility on your desktop.

   The DMS Redundancy Management dialog box is displayed.

   ![DMS Redundancy Management Dialog Box](image)

2. Click Hosts Config from the Redundancy group.

   The DMS Hot Redundancy Configuration dialog box is displayed.
Managing DMS redundancy

The DMS Redundancy Management dialog box includes the following components:

- **System tab**
  - **Redundancy Group**
    - **Hosts Config** – Use to configure the redundancy mode and the server IP addresses.
    - **Perform Synchronization** – Use to initiate a full synchronization. This is useful in circumstances when the backup server has been off-line.
  - **View Group**
    - **Clear Console** – Use to clear the Operations Console.

- **Server Status field**
  - **Server IP** column – Displays the server IP addresses.
  - **Redundancy Role** column – Displays the server role: standalone, primary or backup.
  - **Status** column – Indicates which servers are configured for redundancy and are active.

- **Redundancy Alarms** field – See Redundancy Alarms for alarm descriptions.
  - **Time**
  - **Severity**
  - **Description**
  - **Corrective Action**

- **Operations Console** field – Displays current and past operations.

3. In the **Redundancy Mode** list, select **No Redundancy** or **Hot-Standby**.
4. Type the **Primary** and **Backup** IP addresses in to their respective fields.
   You can swap the addresses with the **Swap** button.
5. Click **OK**.
## Redundancy alarms

### Redundancy Alarms

<table>
<thead>
<tr>
<th>Alarm Text</th>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disconnected from Primary Server</td>
<td>Critical</td>
<td>Asserted when the DMS Redundancy Management application does not have an IP connection to the Primary Server (or the Server services are down).</td>
</tr>
<tr>
<td>Disconnected from Backup Server</td>
<td>Critical</td>
<td>Asserted when the DMS Redundancy Management application does not have an IP connection to the Backup Server (or the Server services are down).</td>
</tr>
<tr>
<td>DMS alarms:</td>
<td></td>
<td>See <em>Alarms and Descriptions</em> for details.</td>
</tr>
<tr>
<td>No Available Backup</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Primary Available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backup Server Not Synced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW Version Mismatch with Backup Server</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 4
Device Database Administration

Use the DMS to maintain a device database for remotely controlling and monitoring devices. Use the Device Browser to display a list of all the devices in the system.

The following topics describe device-related operations:

- Adding devices
- Exporting devices
- Importing devices
- Device reports
- Updating a device
- Cloning a device
- Swapping two devices
- Removing devices
- Group and folder operations

Adding devices

You can add devices to the device database by manually creating them or importing them from one or more Excel 2007/2010 files. If the device is added in a Deployed or Not Authorized state, you first need to create Service Plans, Uplinks, Input Profiles and Processing Profiles - Decoder, DTA, TX, DPI.

- Adding a single device
- Importing devices

Adding a single device

The Expected Firmware Version drop-down menu contains the firmware versions loaded on the server.

Prerequisites:

- Service Plan, see Service plan
- Uplinks, see Uplinks
- Input profiles, see Input profiles
- Processing Profiles, see Processing Profiles
- Relevant firmware versions uploaded, see Uploading a firmware version

To add a device - General tab:

1. In the Home tab, click Add Device in the Device group.
   The Add Device dialog box is displayed.
2. Select a type from the **Device Type** drop-down list.

3. Select a model from the **Device Model** drop-down list.

4. Type a unique MAC address in the **MAC Address** field (mandatory).
   
   You must provide a unique MAC address of the device management port.

5. Type a unique name in the **Device Name** field.
   
   By default, DMS populates this field with the device model number and the first 3 bytes of the MAC Address. You can change the default name, if required.

6. Select a state from the **Device State** drop-down list:
   
   - **Not Authorized** – De-authorizes the VMX (if applicable) and the device from all its services.
   
   - **Defined** – De-authorizes the VMX (if applicable) and the device from all its services. All previous authorization configurations are deleted from the DMS DB/GUI.
   
   - **Deployed** – Default state.

7. Type the alphanumeric number of the device in the **Serial Number** field.

8. Type the card’s ID in the **Virtual Smart Card ID** field.
   
   You can find the Verimatrix VSC ID in the Verimatrix properties in the EMS/SAG and front panel of the device. If you don’t enter a unique Virtual Smart Card ID, you cannot authorize a program that uses it.

9. Type their respective IDs in the **CAM-1/2/3/4 Smart Card ID** fields, where required.
   
   If you don’t enter a CAM Smart Card ID, you cannot authorize a program that uses it.

   **NOTE:** ProView 7000 and ProView 8100 support only up to two CAMs. ProView 7100 can support up to four CAMs.

10. In the Firmware area, select a version from the **Expected Firmware Version** drop-down list.
    
    This is the firmware version in the device. DMS does not validate the version.
Continue adding the device with Affiliate information.

To add a device - Affiliate tab:
1. In the Add Device dialog box, click the **Affiliate Information** tab.
2. Select an Affiliate SystemID from the **System ID** drop-down list.
   
   If you select an affiliate by name from the Affiliate drop-down list, the **System ID**, **City Served** and **State** fields are automatically populated.
3. Do one of the following:
   - Select an affiliate from the **Affiliate** drop-down list.
   - Edit a selected Affiliate.
   - Create a new Affiliate. See *Managing affiliates*.
4. Select **City Served** from the drop-down list.
   
   Location information and Blackout Codes are retrieved from the selected City Served.

Continue adding the device with Authorization information.

To add a device - Authorization tab:
1. In the Add Device dialog box, click the **Authorization** tab.
   
   Different fields are displayed based on the device model and other parameters you defined. Possible fields include:
   - **Transcoding** field – Displayed only if the device includes a transcoder.
   - **Decoding** field – Displayed only if the device includes a decoder. The **Program** column in the **Decoding** box includes the **Local Override** option. Use **Local Override** to configure a program for decoding from the device instead of the DMS.
   - **Transport Stream Passthrough** check box (for model ProView 7110 when using Input Profile with one input only) – For models that support TS XC, you can configure the device to pass through the entire TS. This feature is available only if the Input Profile contains a single TS.
   - **Passthrough (DTA)** field – Select a program for output.
     
     This step is mandatory for **Not Authorized** and **Deployed** device states.
2. In the **Transcoding** area, in the **Program** column, select a program from the drop-down list for each transcoder.
Adding devices

Add Devices Dialog Box: Transcoding and Passthrough (DTA)

These programs must first be configured in the Service Plan panel. See Adding a program. If the device does not contain transcoders, proceed to the next procedure.

3. Select a profile from the TX profile column.

TX profiles must first be configured in the Transcoding Profiles Management panel. See Transcoding.

4. In the DPI Tiers column, select a DPI profile (optional).

DPI profiles must first be configured in the DPI Profiles Management panel. See DPI.

Add Devices Dialog Box: DPI Tiers
Adding devices

5. In the **Decoding** field in the **Program** column, select a program from the drop-down list for each decoder. These programs must first be configured in the Service Plan panel. See *Adding a program*. If the device does not contain a decoder, proceed to the next procedure.

6. Select a **Decoding Profile** from the column. A Decoding Profile must first be configured in the Decoding Profile Management panel. See *Decoding*.

7. Select a **DPI Profile** from the column. DPI Profiles must first be configured in the DPI Profiles Management panel. See *DPI*.

8. In the **Passthrough (DTA)** field, select programs from the **Program** column to pass through. These programs must first be configured in the Service Plan panel. See *Adding a program*.

9. Select a corresponding **DTA Profile** for each program. DTA Profiles must first be configured in the DTA Profiles Management panel. See *DTA*.

10. Select a corresponding **DPI Tier** for each program.

**NOTE:** You can authorize the entire TS. For more information, see *Authorizing the entire TS*.

Continue adding the device with Return Channel information.

**To add a device - Return Channel tab:**

1. Click the **Return Channel** tab.
   
   This tab is displayed only for devices that support a return channel.

2. Select the **Return Channel** check box to enable it.

3. Type the management address (**Return Channel IP**) (mandatory).

4. Type a port number in the **Return Channel Port** field.
   
   Continue adding the device with Advanced information.

**To add a device - Advanced tab:**

1. Click the **Advanced** tab and do the following:
   
   - **Lock to Broadcaster Network** – A device that is locked executes commands from this DMS only. The default is **Disabled**.
   
   - **Disable Disaster Recovery** – Prevents the device from triggering disaster recovery, even if disaster recovery is configured in the input profile.

   - **Resume from Disaster Recovery** – Sends the command to the device to stop disaster recovery and resume to primary.

2. Click **OK**.

**NOTE:** The **Custom Attributes** tab is displayed only if Custom Attributes were defined in the DMS. See *Custom Device Attributes*. 
Authorizing the entire TS

To authorize the entire TS:
1. In the Authorization tab of the Add Device dialog box, click Authorize Entire TS.
2. Select from among the following options:
   - Schedule Authorization:
     - Authorize Indefinitely
     - Authorize with Start/End Dates
     - Recurrence Authorization
     - Suspended Authorization
   - Select DTA Profile – Select from pre-configured DTA profiles.
   - Select DPI Tiers – Select from pre-configured DPI Tiers.
3. Click OK to apply your selections to the entire TS.

Exporting devices

DMS enables you to export ProView 7X00 and ProView 8100 devices in Excel 2007/2010 format. If you don’t select specific devices to export, all the devices are exported.

To export devices:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. Use the Query Editor to search for devices.
   See About the Query Editor.
3. Select the check boxes of the devices you want to export.
4. In the Home tab, click Export Devices in the Device group.
   The Export Device dialog box appears.
   DMS generates a file name in the following format: devices.inventory.<date><time>.xlsx.
5. If you want to change the file name, type a new name in the File Name text box (optional).
6. Click Download.

Importing devices

DMS enables you to import ProView 7X00 and ProView 8100 devices from an Excel 2007/2010 format. You can download a template Excel file from the server to your local machine to ensure compatibility.

Prerequisites:
- Firmware files of the same version as devices in the Excel file must be loaded on the DMS server. See Firmware versions for instructions on loading firmware versions.

To import devices:
1. In the Home tab, click Import Devices in the Device group.
   The Import Device dialog box is displayed.
2. Browse to the file you want to import and select it.
You can import more than one file simultaneously.

3. Click **Import Devices**.

Devices from the imported file are added in the Defined state.

**To download a template Excel file:**

- Do one of the following:
  - Type `http://<DMS Server management IP Address>:9090/dms` in your browser address box.
  - In the **Home** tab, click **Import Devices** in the **Device** group. Then click **Download template Excel file** in the Import Device dialog box.

**Device reports**

DMS can generate a device report in Excel 2007/2010 format. The report contains all the device properties, including custom attributes, such as pending activation and actual firmware version. If you don’t select any devices for the report, all the devices are included in the report.

**To generate device reports:**

1. In the **Home** tab, click **Device Browser** in the **Device** group.
   
   The Device Browser panel is displayed.

2. Use the Query Editor to search for devices.

   See **About the Query Editor**.

3. Select the check boxes of the devices for which you want to create a report.

4. In the **Home** tab, click **Device Report** in the **Device** group.

   The Report Devices dialog box is displayed.

5. Display the fields you want the report to contain in the **Selected columns** pane.

6. Click **Create Report**.

   DMS generates a file name in the format of: `devices.report.<date><time>.xlsx`. You can modify the file name.

7. Click **Download**.

   The Report Devices Destination dialog box is displayed.

8. Select the location in which to download the file.

**Updating a device**

You can edit a device’s attributes.

**NOTE:** The Serial number and Smart card ID fields are disabled for devices in Deployed or Not Authorized states. The Device Type and Expected Firmware Version fields are not disabled if the device is receiving a command and the device state is Deployed.

**To update a device:**

1. In the **Home** tab, click **Device Browser** in the **Device** group.

   The Device Browser panel is displayed.

2. Use the **Query Editor** to search for devices.
Cloning a device

You can create a single clone of a device with similar attributes. The new device has the same properties and authorization as the source device.

**NOTE:** Unique attributes, such as serial numbers, are not copied from the original device.

To clone a device:
1. In the **Home** tab, click **Device Browser** in the **Device** group.
   
   The Device Browser panel is displayed.
2. Use the Query Editor to search for devices.
   See About the Query Editor.
3. Select the check box of a single device.
4. From the Device drop-down list, select Clone.
   The Device Configuration dialog box is displayed.
5. Reconfigure the following:
   - MAC Address
   - Device Name
   - Virtual Smart Card ID
   - Return Channel IP Address if Return Channel is enabled.
6. Edit other parameters, as required.
7. Click OK.

Swapping two devices

Swapping a device is similar to cloning a device. The difference is that at the end of the process, the source device is in the Defined state. The new device has the same properties and authorization as the source device. The device type and model is not copied.

Swapping between devices of a different type or model is allowed if the target device includes:

- Fewer decoders than the source: The matching entries are copied, or example, the configuration of decoder #1 is copied to decoder #1 of the target device.
- More decoders than the source: The extra entries are set to None.
- TX and DTA behave in the same way.

If the new authorization configuration for the target device does not pass the regular validation, for example, if the input profile cannot be applied, the DMS issues a warning message and the target device remains in the Defined state.

NOTE: You can optionally delete the source device.

To swap two devices:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. Use the Query Editor to search for devices.
   See About the Query Editor.
3. Select a single device.
4. From the Device drop-down list, select Swap.
5. In the Delete Swapped Device message box, click Yes.
   The Device Configuration dialog box is displayed.
6. Reconfigure the following:
   - MAC Address
   - Device Name
   - Smart Card ID
7. Edit other parameters, as required.
8. Click OK.

Removing devices

You can remove only devices that are in the Defined state.

To remove a device:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. Use the Query Editor to search for devices.
   See About the Query Editor.
3. Select devices to remove.
   See Selecting devices.
4. From the Device drop-down list, select Remove.
   A confirmation dialog box is displayed.
5. Click OK.

Group and folder operations

Separating devices into groups simplifies the task of managing many devices. You can create folders and subfolders to contain groups and manage them hierarchically. See Opening the Groups panel.

See About Groups for GUI related group functions.

- Creating a group and adding devices
- Performing Commands on groups
- Editing a group
- Removing a group
- Creating a folder
- Removing a Folder
- Editing a folder

Creating a group and adding devices

You can create groups and add devices to them in one procedure. You can also create empty groups and add devices to them later on.

Creating a group and adding Devices with the create group function

To create a group and add devices with the Create Group function:
1. In the Home tab, click Create Group in the Device group.
   The Group Management panel is displayed. The default Container Folder is Groups.
2. To change the container folder, in the lower part of the panel, click Browse and navigate to another folder.
3. Type a name for the group in the Group Name field (mandatory).
4. Type a description in the **Group Description** field (optional).

5. Do one of the following:
   - To add selected devices:
     - Click **Shift** + click or **Ctrl** + click.
     - Click **Add to Group**.
   - To add all devices: Click **Add All to Group**.

6. Click **Create Group**.

   If you did not add devices, a warning is displayed. You can create a group with no devices by clicking **Create Group** a second time.

### Creating a group and adding devices from the Device Browser

**To create a group and add devices from the Device Browser:**

1. In the **Home** tab, click **Device Browser** in the **Device** group.

   The devices in the database are displayed in the Device Browser panel.

2. Do one of the following:
   - Select devices, then select **Create Group** from the **Device** drop-down list.
   - Right-click a folder in the Groups panel and select **Create Group** from the menu. In the Group Management panel, select devices.

3. Click **Browse** and select the folder in which to create the group (optional).

4. Type a name for the group in the **Group Name** field (mandatory).

5. Type a description in the **Group Description** field (optional).

6. Click **Create Group**.

### Performing Commands on groups

You can perform the following commands on groups of devices:

- Upgrade Firmware
- Activate Firmware
- Reboot Devices
- Download Configuration File
- Roll Back Configuration
- Set Model
- Set TS Bitrate

**NOTE:** If the group contains at least one ProView 8100 device, the available commands are Upgrading Firmware, Activating Firmware, Rebooting Devices, and Bulk Updates.
To perform a command on a group of devices:

- Right-click a group in the Groups panel and select **Commands > <command name>** from the submenu.

![Groups Commands Menu](image)

**Editing a group**

You can add or remove devices, move a group to another folder and change the group name and description.

**To add/remove selected devices from a group:**

1. Click the Groups tab on the left side of the main window.
2. Right-click a group and select **Properties**.
   - The Group Management panel is displayed.
3. Using the **Shift** or **Ctrl** keys, select devices, then do one of the following:
   - Click **Add to Group**.
   - Click **Remove from Group**.
4. Click **Update Group**.

**To add/remove all devices from a group:**

1. Click the **Groups** tab on the left side of the main window.
2. Right-click a group and select **Properties**.
   - The Group Management panel is displayed.
3. Do one of the following:
   - Click **Add All to Group**.
   - Click **Remove All from Group**.
4. Click **Update Group**.

**To move a group:**

1. Click the Groups tab on the left side of the main window.
2. Drag the group to the required folder.
Removing a group
You can remove groups one at a time.

To remove a group:
1. Click the Groups tab on the left side of the main window.
2. Right-click a group.
3. Select Remove Group.
4. Click OK.

Creating a folder
You can create folders and add groups to them.

To create and add groups to a folder:
1. Right-click a folder in the Groups panel where you want to create the folder.

[Image: Groups Panel: Create Folder]

2. Select Create Folder.

   The Create Folder dialog box is displayed.

3. Enter a folder name.

   Folder Description is optional.

4. Click OK.

   The folder is created.

5. Drag a folder or group into the new folder.

   To drag a folder, you must click the folder name.
Removing a Folder
You can remove any folder in the system except those directly under System. Any groups in the folder are also removed.

To remove a folder:
1. Right-click a folder in the groups panel.
2. Select Remove Folder.
3. Click OK.

   The folder is removed.

Editing a folder
You can change the name and description for a folder and you can move it under different folders.

To change the name or description of a folder:
1. Right-click a folder in the Groups panel.
2. Select Properties.

   The Update Folder dialog box is displayed.
3. Edit the relevant fields.
4. Click OK.

To move a folder:
- Drag the folder in the Groups panel to the required location.
DMS commands enable you to remotely control ProView 7X00 and ProView 8100 receiver devices.

The following topics describe device configuration and control commands:

- **Upgrading firmware**
- **Activating firmware**
- **Rebooting devices**
- **Downloading configuration files**
- **Rolling back device configurations**
- **Upgrading licenses**
- **Bulk update**
- **Set model**
- **Resume from disaster recovery**
- **Setting TS bitrates**

All commands can be sent to devices in the Deployed and Not Authorized states. Only the following commands can be sent to devices in the Defined state.

- **Upgrade Firmware**
- **Activate Firmware**
- **Reboot Devices**
- **Download Configuration File**
- **Rollback configuration**
- **Configuration Activation**
- **Upgrade Licenses**
- **Set Model (7X00 only)**
Upgrading firmware

DMS enables you to upgrade the firmware of remote devices and activate the new firmware version.

You can configure the start or finish date and time to send the command.

If you use the No activation parameter in the Upgrade Firmware dialog box, the firmware is loaded into the secondary bank. The Standby firmware version attribute is set with the firmware upgrade version and you can activate the firmware later with the Activate Firmware command.

You can increase the number of repetitions or set the repetitions to Indefinite (repeat till you succeed) for the firmware download to increase the reliability of the process as the download is performed over a one-way satellite link. Under normal circumstances, three repetitions are enough. Repetitions are labeled as cycles in the timeline simulation in Upgrade Firmware Dialog Box.

The following Firmware Activation Mode options are available:

- **Simultaneous** – Once all repetitions are complete, DMS sends a command to all devices to activate. After activation, the device will reboot.
- **Independent** – Each device reboots and activates the firmware as soon as it is fully received
- **No Activation** – Do not activate the firmware after the firmware download

You can give each Upgrade Firmware command a name and description, which is displayed when monitoring commands.

![Upgrade Firmware Dialog Box](image)

**Upgrade FirmwareDialog Box**

**NOTE:** You can launch two concurrent firmware upgrade commands: one for ProView 7X00 and one for ProView 8100.
Prerequisites

- Upgrade firmware versions must be loaded on to the server before starting the upgrade procedure. See *Uploading a firmware version*.  
- The DMS Stream must be configured. See *Network connection*.

**To upgrade the firmware of selected devices:**
1. In the **Home** tab, click **Device Browser** in the **Device** group. The Device Browser panel is displayed.  
2. Select a device or multiple devices. See *Selecting devices*.  
3. From the **Commands** drop-down list, select **Upgrade Firmware**. The Upgrade Firmware dialog box is displayed.  
4. Select the firmware version for the upgrade in the **Expected Firmware Version** drop-down menu.  
5. Select one of the following parameters for the firmware download:  
   - **Indefinite Repetitions**: Select the check box.  
   - **Number of Repetitions** - Using the arrows, select any number between 2 and 10. The default is 3.  
6. Set a specific bitrate or a bitrate that is calculated according to a specific completion time. The timeline simulation updates accordingly.  
7. Select a firmware activation mode from the drop-down list.  
8. Click **Start Time** or **Finish Time** to schedule the date and time to send the command. The default start time is **Immediate**.  

**NOTE:** You can change the start time before the command is executed.  
9. Click **Next** and enter a name and description (optional).  
10. Click **Next** and change the list of target devices (optional).  
11. Click **Finish** to send the upgrade command. The firmware upgrade progress is displayed in the command panel. See *About Commands*.  

**To upgrade the firmware for a group of devices:**
1. Click the **Groups** tab on the left side of the main window.  
2. Right-click a group.  
3. From the **Commands** submenu, select **Upgrade Firmware**. The Upgrade Firmware dialog box is displayed.  
4. Select the firmware version for the upgrade from the **Expected Firmware Version** drop-down menu.  
5. Select one of the following parameters for the firmware download:  
   - **Indefinite Repetitions**: Select the check box.  
   - **Number of Repetitions** - Using the arrows, select any number between 2 and 10. The default is 3.  
6. Set a specific bitrate or a bitrate that is calculated according to a specific completion time. See *Upgrade Firmware Dialog Box*. 

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7. Select a firmware activation mode.
8. Click **Start Time** or **Finish Time** to schedule the date and time to send the command.
   The default start time is **Immediate**.

**NOTE:** You can change the start time before the command is executed.

9. Click **Next** and enter a name and description (optional).
10. Click **Next** and change the list of target devices (optional).
11. Click **Finish**.
   The Firmware Upgrade progress is displayed in the command panel. See *About Commands*.

### Activating firmware

You can load upgrade firmware into the second bank and activate it later with the **Activate Firmware** command. You can configure the date and time to send the command. After a successful activation, the secondary bank becomes the active bank and the previous active bank becomes the secondary bank.

You can give each **Activate Firmware** command a name and description which is displayed when monitoring commands.

**Prerequisites**
- The device's secondary bank must contain the upgrade firmware.

**To activate firmware for devices:**
1. In the **Home** tab, click **Device Browser** in the **Device** group.
   The Device Browser panel is displayed.
2. Select devices to upgrade.
   See *Selecting devices*.
3. From the **Commands** drop-down list, select **Activate Firmware**.
   The Activate Firmware Version dialog box is displayed.
4. Click **Start** and schedule the date and time to send the command.
   The default start time is **Immediate**.
5. Select the firmware version from the list.
6. Click **Send**.

### Rebooting devices

Use the **Reboot Devices** command to reboot selected devices or a group of devices. A device reboot causes the device to be unavailable for a few minutes. You can configure the date and time to send the command.

You can give each Reboot Devices command a name and description which is displayed when monitoring commands.

**Prerequisites**
- The DMS Stream must be configured. See *Network connection*.
To reboot selected devices:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. Select devices.
   See Selecting devices.
3. From the Commands drop-down list, select Reboot Devices.
   The Reboot command for device <name> dialog box is displayed.
4. Click Start and schedule the date and time to send the command.
   The default start time is Immediate.
5. Click Send.

To reboot a group of devices:
1. Click the Groups tab on the left side of the main window.
2. Expand the group tree.
3. Right-click a group.
4. Select Commands > Reboot Devices.
5. Click Start and schedule the date and time to send the command.
   The default start time is Immediate.
6. Click Send.

Downloading configuration files

You can change the configuration for a set of ProView 7X00s or ProView 8100s by downloading a configuration file to these devices. You can configure the date and time to send the command. Up to 10 configuration commands can run concurrently.

DMS activates the new configuration as soon as the download is complete. If DMS loses control of the device after it activates the new configuration, the device rolls back to the previous configuration.

You can give each downloaded configuration file command a name and description which is displayed when monitoring commands.

The configuration file must first be created with a ProView 7X00 or ProView 8100 that has the same hardware configuration, software version, and licenses.

NOTE: You can check the hardware configuration, software version and licenses of a ProView 7X00 and ProView 8100 from the front panel or the GUI. To check these details in the GUI, double-click a device in the Device Browser.

The file name for the ProView 7100 from release 4.1 and higher has both a .pvr or .xml extension. The file name for ProView 8100 has an .xml extension only.

For instructions on saving a preset file using the front panel, see the ProView 7X00 and the ProView 8100 User Manuals, Chapter 4, Presets.

For instructions on saving a preset file using the GUI, see the ProView 7100 release 4.0 and the ProView 8100 User Manuals, Chapter 7, Presets.
To download a ProView 7X00 or ProView 8100 configuration file:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. In the bottom part of the Device Browser, select devices.
3. From the Commands drop-down list, select Download Configuration File.
   The Download Configuration File dialog box is displayed.
4. Click Start and schedule the date and time to send the command.
   The default start time is Immediate.
5. Click Select File and browse to the file you want to download.
6. In the Configuration Download Mode area, select one of the following from the drop-down menu:
   - Replace (default) - The device replaces the earlier configuration and applies the configuration specified in the downloaded file. If you selected a file with a .pvr extension, only Replace is available.
   - Append - The device applies the configuration specified in the downloaded file on top of its running configuration.
7. Click Next.
   A validation message is displayed.
8. Click Send.
   DMS downloads the configuration file, using either the Configuration Download command when the Replace option is used or the XML Configuration command when the Append option is used.

Rolling back device configurations

Use the Roll Back command to roll back to a previous configuration after uploading and activating a new configuration file. You can configure the date and time to send the command. There is no limit to the number of Roll Back commands that can run concurrently. You cannot cancel a Roll Back command.

You cannot roll back to a previous configuration more than once.

You can give each Roll Back Configuration command a name and description which is displayed when monitoring commands.

To roll back devices to the previous configuration:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. Select devices.
   See Selecting devices.
3. From the Commands drop-down list, select Roll Back Configuration.
   The Roll Back Configuration dialog box is displayed.
4. Click Start and schedule the date and time to send the command.
   The default start time is Immediate.
5. Click Send.
To roll back a group of devices to the previous configuration:
1. Click the Groups tab on the left side of the DMS window.
2. Expand the group tree.
3. Right-click a group.
4. Select Commands > Roll Back Configuration.
   The RollBack command for group <name> dialog box is displayed.
5. Click Start and schedule the date and time to send the command.
   The default start time is Immediate.
6. Click Send.

Upgrading licenses

Use the Upgrade Licenses command to upgrade the licenses of a single device or multiple devices using a license key or a license file in Excel format. The license keys must reflect the licensed features in the License Upgrade dialog box or in the Excel file, if you import licenses. You can configure the date and time to send the command.

You can give each Upgrade Licenses command a name and description which is displayed when monitoring commands.

License Upgrade Dialog Box

Importing a license file

When you purchase licenses for many devices, Harmonic can supply you a license file in Excel.xlsx format, which you can import to upgrade multiple devices with one procedure. The target devices are defined in this Excel file. Devices selected in the Device Browser have no affect on the license import operation. DMS validates the licenses with the devices in the DMS database.

To import a license file and upgrade multiple ProView licenses:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. Select devices.
3. From the **Commands** drop-down list, select **Upgrade Licenses**. The License Upgrade dialog box is displayed.

![](image1.png)

**License Upgrade Dialog Box: Step 1**

4. Select **License file** and click **Next**. The License Upgrade dialog box, step 2, is displayed.

![](image2.png)

**License Upgrade Dialog Box: Step 2**

5. Click **Select File** and browse to the .xlsx file you want to upgrade.
6. Click **Start** and schedule the date and time to send the command. The default start time is **Immediate**.
7. Click **Next** to validate the licenses.
8. Enter a name and description for this command (optional).
9. Click **Send**.
Inserting a license key

To insert a license key and upgrade a single ProView license:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. Select a device and from the Commands drop-down list, select Upgrade Licenses.
   The License Upgrade dialog box is displayed.
3. Select License Key and click Next.
4. Type the license key into the field and click Next.
   The license key is supplied by Harmonic customer services.
5. Click Start and schedule the date and time to send the command.
   The default start time is Immediate.
6. Click Next and type a name and description for this command (optional).
7. Click Send.

Set model

You can change the device model only for ProView 7X00.

To set a device model:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. Select devices.
   See Selecting devices.
3. From the Commands drop-down list, select Set Model.
   The Set Model command for device <model number> dialog box is displayed.
4. Click Start and schedule the date and time to send the command.
   The default start time is Immediate.
5. From the **Expected PVR Model** drop-down list, select a model.
6. Click **Next** and type a name and description for this command (optional).
7. Click **Send**.

### Resume from disaster recovery

Use **Resume from Disaster Recovery** to stop disaster recovery and resume to primary.

![Stop Disaster Recovery Command for Device <name> Dialog Box](image)

**Stop Disaster Recovery Command for Device <name> Dialog Box**

**To resume from disaster recovery:**
1. In the **Home** tab, click **Device Browser** in the **Device** group.
   The Device Browser panel is displayed.
2. Select devices.
   See **Selecting devices**.
   This command is not available for devices in a Defined state.
3. From the **Commands** drop-down list, select **Resume from Disaster Recovery**.
   The Resume from Disaster Recovery command for <device name> dialog box is displayed.
4. Click **Start** and schedule the date and time to send the command.
   The default start time is **Immediate**.
5. Click **Next** and type a name and description for this command (optional).
6. Click **Send**.

### Setting TS bitrates

Use the **Set TS Bitrate** command to set the transport stream output bitrate for ProView 7X00 and ProView 8100 devices.

You can configure the bitrate of each TS output from 0.1 to 200 Mbps, steps 0.000001.

Default bitrates:
- TS #1: 80
- TS #2 -16: 0
At least one device must be displayed in the Device Browser.

To set the transport stream output bitrate:
1. In the Home tab, click Device Browser in the Device group.
   The Device Browser panel is displayed.
2. Select devices.
   See Selecting devices.
   This command is not available for devices in a Defined state.
3. From the Commands drop-down list, select Set TS Bitrate.
   The Set the TS Output Bitrate command for selected devices dialog box is displayed.
4. Click the Start dropdown list and schedule the date and time to send the command.
   The default start time is Immediately.
5. In the Set TS Output Bitrate area, select one or more TS outputs and set the output bitrate for each selected TS.
   **NOTE:** If a selected TS has an output bitrate of 0 (zero), the logical output of the selected stream is disabled.
6. Click Next and type a name and description for this command (optional).
7. Click Send.
Bulk update

Use the device properties Bulk Update command to update the following on selected devices at a specified date and time:

- Affiliate Association
- Program Replacement
- New Program Authorization
- Input Profile Replacement
- Authorize Entire TS
- Processing Profile Replacement
- Change Device State
- Change Device Property
- Program Authorization Re-Scheduling

The following configurations are available in the Device Properties Bulk Update dialog box.
## Bulk Configurations

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<tr>
<th>Update Type</th>
<th>Command Configuration</th>
</tr>
</thead>
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<tr>
<td><strong>Affiliate Association</strong></td>
<td>■ Affiliate&lt;br&gt;■ Affiliate City</td>
</tr>
<tr>
<td><strong>Program Replacement</strong></td>
<td>■ Current Program (From)&lt;br&gt;■ New Program (To)&lt;br&gt;■ Processing Type: All, DTA, TX, Decoding&lt;br&gt;■ Processing Profile&lt;br&gt;■ DPI Profile</td>
</tr>
<tr>
<td><strong>New Program Authorization</strong></td>
<td>■ New Program (To)&lt;br&gt;■ Processing Type: DTA, Decoding, TX&lt;br&gt;■ Processing Profile&lt;br&gt;■ DPI Profile</td>
</tr>
<tr>
<td><strong>Input Profile Replacement</strong></td>
<td>■ Current Input Profile (From)&lt;br&gt;■ New Input Profile (To)&lt;br&gt;■ Program aliasing: Replaced Program Substitute Program</td>
</tr>
<tr>
<td><strong>Authorize Entire TS</strong></td>
<td>■ Select DTA Profile&lt;br&gt;■ Select DPI Tiers&lt;br&gt;■ Authorize Indefinitely&lt;br&gt;■ Authorize with Start/End Dates&lt;br&gt;■ Recurrence Authorization&lt;br&gt;■ Suspended Authorization</td>
</tr>
<tr>
<td><strong>Processing Profile Replacement</strong></td>
<td>■ Profile Type: DTA, TX, Decoding, DPI Profile&lt;br&gt;■ Program&lt;br&gt;■ Current Profile (From)&lt;br&gt;■ New Profile (To)</td>
</tr>
<tr>
<td><strong>Change Device State</strong></td>
<td>■ Device State: Not Authorized, Defined, Deployed&lt;br&gt;■ Input Profile</td>
</tr>
<tr>
<td><strong>Change Device Property</strong></td>
<td>■ Name: Select one of the defined Custom Device Attributes&lt;br&gt;■ Value</td>
</tr>
<tr>
<td><strong>Program Authorization Re-Scheduling</strong></td>
<td>■ Authorize indefinitely&lt;br&gt;■ Authorize with start/end dates&lt;br&gt;■ Recurrent authorization&lt;br&gt;■ Suspended authorization</td>
</tr>
</tbody>
</table>
Chapter 5 Device Commands

General device command functions

- **Command scheduling**
- **Canceling an active command**

**Command scheduling**

You can schedule all commands and commands for groups of devices using the Command dialog box. You can make changes to a group before the command starts.

Use the **Schedule Panel** to cancel or edit scheduled commands, see *About Scheduled Commands*.
Every command dialog box has a page to configure the command to be sent immediately or to be scheduled. Click on the drop-down menu to display a monthly calendar and set a start or end time, see Schedule Configuration Dialog Box for an example.

![Schedule Configuration Dialog Box](image)

**Schedule Configuration Dialog Box**

**Canceling an active command**

You can cancel the following commands:

- Upgrade Firmware
- Download Configuration File

**NOTE:** If you cancel an Upgrade Firmware command that is configured with the Independent firmware Activation mode, you must choose which firmware version to record for the target devices in the device database because there is no return channel.

To cancel an active command:

1. In the Home tab, click Commands in the Monitoring group.
   
   The Commands panel is displayed.
2. Select the command you want to cancel.
3. Click Cancel.
The following topics describe how to manage affiliates.

- Managing affiliates
- Editing affiliates
- Exporting affiliates
- Importing affiliates
- Affiliate reports

Managing affiliates

Use the Affiliates Management panel to add, edit and remove affiliates. You can add up to five contacts for each affiliate and up to 10 blackout codes per city.

To add affiliates:

1. In the Home tab, click Affiliates Management in the Affiliates group.
   
   The Affiliates Management panel is displayed.

2. Click Add
   
   The Add New Affiliate dialog box is displayed.

3. Type a unique name in the Affiliate Name field.
4. In the **General** tab, configure the following:
   - **MSO** – Company name
   - **System ID** – (Required field)
   - **H/E Type** – Head end type
     - Primary
     - Backup
     - Secondary
     - Simulcast
     - Lab
   - **Time Zone**
   - **Street**
   - **City**
   - **County**
   - **State/Province**
   - **Zip Code**
   - **Area Code**
   - **Country**

   Blackout Codes for each city are displayed.

5. In the **Contacts** tab, do either of the following:
   - Click **Add New** to display the Add New Contact dialog box. Fill in the details.
   - Right-click a contact and select **Edit** or **Remove** from the menu.

6. In the **City Served** tab, do any of the following:
   - Click **Add New** to display the Add New City dialog box. Fill in the details.
   - Right-click a city and select **Edit** or **Remove** from the menu.

7. Click **OK**.

   Your settings are displayed in the Affiliate Management panel.

---

**Editing affiliates**

To edit an affiliate:

1. In the **Home** tab, click **Affiliates Management** in the **Affiliates** group.

   The Affiliates Management panel is displayed.

2. Highlight the affiliate you want to edit.

3. Do one of the following:
   - Click the **Edit** button.
   - Right-click an affiliate and select click **Edit** from the menu.

   The Update Affiliate dialog box is displayed.

4. Edit the affiliate details and click **OK**.
Removing affiliates

You cannot remove an affiliate that is assigned to a deployed device.

To remove affiliates:
1. Select the affiliates you want to remove.
2. Do one of the following:
   - Click the **Remove** button.
   - Right-click an affiliate and select **Remove** from the menu.
3. Click **OK** to confirm your choice.

Bulk update

Use the **Bulk Update** button to update properties of selected affiliates. There are three main steps in this procedure:
- Scheduling
- Configuration
- Summary

For each property, unless specified otherwise, you can perform the update in one of two modes:
- **Replace** – In Replace mode, enter the new value of the property and all selected affiliates are updated with the new value.
- **Search/Replace** (default) – In Search/Replace mode, enter a value to search for and the replacement value. The matching affiliates are updated with the new value.

To perform a bulk update:
1. In the **Home** tab, click **Affiliates Management** in the **Affiliates** group.
   - The Affiliates Management panel is displayed.
2. Select **Affiliates** and click **Bulk Update**.
   - The Affiliate Bulk Update dialog box is displayed.

   **Affiliate Bulk Update Dialog Box**

3. In the General Information area, type a name for the update operation.
4. Type a description (optional).
5. Select an update type from the drop-down list:
- Affiliate Properties
- Blackout Codes Update

6. In the Execution Schedule area, configure a start date and time and click Next.

7. Do one of the following:
   - If you selected Blackout Codes Update, select an update type and configure the execution schedule.
     - The remaining parameters in the Command Configuration box vary depending on the Update Type selection.
   - If you selected Affiliate Properties, select an affiliate name and type from their respective drop-down lists.
     - See Affiliate Bulk Update Command Configuration box configurations for a list of names and types.
     - The remaining parameters in the Command Configuration area vary according to the affiliate name and update type selections.

8. Click Next.

   The Summary view displays which property was updated, its new value, scheduled execution and the number of updated affiliates.

9. Click Finish.
### Exporting affiliates

You can export DMS affiliates in an Excel file. The exported file includes all Contacts, City Served properties, Blackout codes, affiliate index/ID and City Served index/IDs. If you do not select any affiliates, all the affiliates and device properties which are assigned to the affiliates are exported.

**To export affiliates:**

1. In the **Home** tab, click **Affiliates Management** in the **Affiliates** group.

   The Affiliates Management panel is displayed.

2. Use the **Query Editor** to search for affiliates.

   See *About the Query Editor*.

3. Select the affiliates you want to export.

4. In the **Home** tab, click **Export Affiliates** in the **Affiliates** group.

---

### Affiliate Bulk Update Command Configuration box configurations

<table>
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<th>Update Type (General Information box)</th>
<th>Name (Command Configuration box)</th>
<th>Update Type (Command Configuration box)</th>
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<tr>
<td>Affiliate Properties</td>
<td>Affiliate Name</td>
<td>Search/Replace</td>
</tr>
<tr>
<td></td>
<td>MSO</td>
<td>Search/Replace</td>
</tr>
<tr>
<td></td>
<td>System ID</td>
<td>Search/Replace</td>
</tr>
<tr>
<td></td>
<td>H/E Type</td>
<td>Replace</td>
</tr>
<tr>
<td></td>
<td>Time Zone</td>
<td>Replace</td>
</tr>
<tr>
<td></td>
<td>Area Code</td>
<td>Search/Replace</td>
</tr>
<tr>
<td></td>
<td>Street Address</td>
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<td></td>
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<tr>
<td></td>
<td>Country</td>
<td>Replace</td>
</tr>
<tr>
<td>Blackout Codes Update</td>
<td>N/A</td>
<td>Add, Replace, Delete</td>
</tr>
</tbody>
</table>

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The Export Affiliates dialog box is displayed.
5. Select a folder to export to.
6. Click Download.

DMS generates a file name in the format of affiliates.<date><time>.xlsx. You can edit the file name.

Importing affiliates

You can prepare a table of affiliates on an Excel spreadsheet to import into the DMS database. An affiliate or city served that exists in the database but not in the Excel file remains in the database. If the information for an affiliate is different in the database and the Excel file, DMS prompts you to choose which affiliate or city served to use. You can set DMS to perform the same action on all future conflicts.

To import affiliates:
1. In the Home tab, click Import Affiliates in the Affiliates group.
   The Import Affiliates dialog box is displayed.
2. Select an Excel file with affiliates.
3. Click Import Affiliates.

Affiliate reports

DMS can generate an affiliate report in Excel 2007/2010 format. The report contains all the affiliate properties. If you don’t select any affiliates, all the affiliates and device properties which are assigned to the affiliates are reported.

To generate an affiliate report:
1. In the Home tab, click Affiliates Management in the Affiliates group.
   The Affiliates Management panel is displayed.
2. Use the Query Editor to search for affiliates.
   See About the Query Editor.
3. Select the affiliates for the report.
4. In the Home tab, click Affiliate Report in the Affiliates group.
   The Affiliates Report dialog box is displayed.
5. Display the fields you want the report to contain in the Selected columns pane.
6. Click Create Report.
   DMS generates a file name in the format of affiliates.<date><time>.xlsx. You can edit the file name.
7. Click Create Report.
The following topics describe how to manage blackout events.

- Creating blackout events
- Managing blackout events
- Timeline

Creating blackout events

Use the Blackout Events panel to add or edit blackout events. The alternative program can be from any primary input that is defined in the device’s input profile.

Blackout events can run for a minimum of 15 minutes and a maximum of 24 hours. Start time can be immediate or at a time and date in the future that you define.

To create a spotlight event, set the Blacked-Out Program parameter to None.

NOTE: Blacked-out programs must be authorized on the devices. You authorize them in the Device Browser. You can access the Device Browser directly from the Blackout Events editor.

To create a blackout event:

1. In the Home tab, in the Blackout group, click Create Blackout Event.

   The Blackout Events panel is displayed.

2. In the Blackout Properties area, configure the following blackout properties.
   - Event Name (Mandatory)
   - Event Description (Optional)
   - Start Time – Specify the start date and time in the calendar. Default is Immediately.
   - End Time – Specify an end time in the calendar. By default, the end time is 15 minutes after the start time.
Managing blackout events

Use the Blackout Events panel to view all blackout events in the system.

In the Blackout Events panel, you can:

- End, lengthen or shorten an event while it is running
- Add devices to the event before it has finished running
- Remove devices from an event

The following states are used in the Blackout Event panel:

**States**

<table>
<thead>
<tr>
<th>Status</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defined</td>
<td>The start time has not been defined.</td>
</tr>
<tr>
<td>Ended</td>
<td>The event ran and stopped according to schedule.</td>
</tr>
<tr>
<td>Failed</td>
<td>The event failed to start on the device.</td>
</tr>
<tr>
<td>Incomplete</td>
<td>The blackout event is not fully defined.</td>
</tr>
<tr>
<td></td>
<td>- Target devices are not selected.</td>
</tr>
<tr>
<td></td>
<td>- The blacked-out program has not been defined.</td>
</tr>
<tr>
<td></td>
<td>- The End Time has not been defined.</td>
</tr>
</tbody>
</table>
Managing blackout events

States

<table>
<thead>
<tr>
<th>Status</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparing</td>
<td>The preparation command is sent and CAS entitlement opens (if CAS scrambling is selected). The blackout event is moved to the preparation state four minutes before the Start Time.</td>
</tr>
<tr>
<td>Running</td>
<td>The event has been activated (either manually by the user or automatically). When there is an automatic event, the device is considered to be in Running state at the scheduled time.</td>
</tr>
<tr>
<td>Scheduled</td>
<td>The event definition is complete and a start time has been defined (regardless of the activation mode).</td>
</tr>
<tr>
<td>Skipped</td>
<td>The event was scheduled but never activated.</td>
</tr>
<tr>
<td>Stopped</td>
<td>The event was running and had a defined end time but was manually stopped by the user.</td>
</tr>
</tbody>
</table>

To manage blackout events:
1. In the Home tab, click Blackout Events in the Blackout group.
   The Blackout Events panel is displayed.
2. Right-click an event in the Blackout Events panel to display the context menu. Alternatively, double-click the event.

Blackout Events Context Menu

The context menu contains the following items:
- Edit
- View
- Clone Blackout Event
- Show in Timeline View
- Start Now
- End Now
- Remove

Each of the columns can be used to filter the blackout events on event state (multiple selection). The default view displays only events that are Defined, Incomplete, Scheduled, and Running. By default, the events are sorted according to the start time. Events that are running appear at the top of the list.
Editing a blackout event

To edit a blackout event:
1. Right-click an event in the Blackout Events panel.
2. Select Edit from the context menu.
   The Blackout Properties area is displayed.
3. Edit the fields as required and click Finish.

Viewing a blackout event

To view a blackout event:
1. Right-click an event in the Blackout Events panel.
2. Select View from the context menu.
   The Blackout Properties area is displayed.

Cloning a blackout event

When an event is cloned, the following properties are copied from the source event:
- Event Description
- Blacked-Out program
- Alternative Program
- Targets

To clone a blackout event:
1. Right-click an event in the Blackout Events panel.
2. Select Clone Blackout Event from the context menu.
   The Blackout Properties area is displayed.
3. Edit the fields as required and click Finish.

Showing a blackout event in the timeline

To show a blackout event in the Timeline:
1. Right-click an event in the Blackout Events panel.
2. Select Show in Timeline View from the context menu.
   The event is displayed in the timeline.

Manually starting a scheduled blackout event

To start a blackout event:
1. Right-click an event in the Blackout Events panel.
2. Select Start Now from the context menu.
3. Click OK.
Manually stopping a scheduled blackout event

To stop a blackout event:
1. Right-click an event in the Blackout Events panel.
2. Select End Now from the context menu.
3. Click OK.

Removing a Blackout Event

To remove a blackout event:
1. Right-click an event in the Blackout Events panel.
2. Select Remove from the context menu.
3. Click OK.

Timeline

The Timeline occupies the top half of the Blackout Events panel and allows you to view a graphical representation of blackout events. You can also create blackout events on the Timeline using the mouse. You can choose to view events on a specific date or at the current time. You can zoom in or out to change the viewing period. The Timeline shows events in one of four states, which are color-coded as follows:

- Scheduled - Light grey
- Running - Green
- Ended - Dark grey
- Stopped - Dark grey

In the Timeline, you can:
- Stop running events
- Clone events
- Edit event properties
Creating Events

To create an event:
1. In the Blackout Events panel, drag the mouse pointer in the Timeline.
   The created event appears in yellow on the Timeline.
2. In the Blackout Properties area, define event properties.
   See Creating blackout events.
3. Click Finish.

Zooming

Use the magnifying glass buttons to zoom in and to zoom out and click  to set the minimal zoom.
You can monitor ProView receiver devices using the Monitoring, Audit Log and Alarms panels. The firmware version of the device is displayed in the **Expected Firmware Version** column in the **Device Browser** panel.

The following topics describe monitoring-related operations:

- **About the Dashboard panel**
- **About Alarms**
- **Exporting alarms**
- **About Commands**
- **About RF history**
- **About Scheduled Commands**
- **About Audit Log**
- **Exporting the audit log**
- **About Alerts**

### About the Dashboard panel

The Dashboard allows you to manage and monitor the system, including system events, active commands, alarms and others.

Dashboard panels show the current state of different system elements. You can display a combination of any of the following Dashboard panels simultaneously:

- **Audit Log**
- **Calendar**
- **Clock**
- **Image**
- **Devices**
- **Commands**
- **Alarms**
- **Scheduled commands**

You can add multiple instances of the same panel, with different configurations, to the Dashboard. For example you can add multiple Clock panels to the Dashboard and configure each one to show different time zones.

The following Dashboard panels are available:

### Audit Log

The Dashboard Audit Log panel displays the most recent events. You can filter this list by event type and originator and configure the refresh interval and list size limit. See **About Audit Log**.
Dashboard Audit Log Panel

You can configure Audit Log by clicking the panel’s Configuration icon.

Audit Log Configuration Dialog Box

Calendar

The Dashboard Calendar panel displays the current date. To advance or go back a year, click the double arrow buttons. To advance or go back a month, click the single arrow buttons. To display the current date, click Today.
Clock

You can configure the Dashboard’s Clock caption and time zone for several Clock instances, each with their own time zone and caption.

Clock Panel

You can configure Clock by clicking the panel’s Configuration icon.

Clock Configuration Dialog Box

Image

The Dashboard Image panel displays an image file of your choice, for example, a map of the region where devices are deployed.

Image Panel

You can configure Image by clicking the panel’s Configuration icon and browsing to the image you want to display.
Devices

The Dashboard Devices panel displays a pie chart of the number of devices in the system, grouped by any of the following categories:

- Expected firmware version
- Country
- State
- Time zone

The chart refreshes every 60 seconds by default.

You can change the group category and refresh rate in the panel’s Configuration dialog box.

Pie Chart Panel

You can configure device groups according to firmware version by clicking the panel’s Configuration icon.

Device Configuration Dialog Box

To display devices in the Device Browser:

- Double-click any slice of the pie chart.

Commands

The Dashboard Commands panel displays running commands in the system in chronological order. You can set the maximum number of commands to be displayed and whether to display only commands that are being executed. Scheduled commands are displayed in the corresponding panel.

You can view the target device/group and Cancel commands with the Commands element. The Cancel command is available only for firmware upgrade commands in idle or in-progress states.
Commands Panel

To view the target device/group:
- Click Targets.

To cancel commands:
- Click Cancel.

You can configure Commands by clicking the panel’s Configuration icon.

Command Configuration Dialog Box

Alarms

The Dashboard Alarms panel displays all the alarms in chronological order. Each alarm is colored according to alarm severity. Click an alarm to display the alarm details in the Alarms panel at the bottom of the DMS window.

Alarms Panel
Scheduled commands

The Dashboard Scheduled Commands displays up to 20 scheduled commands for the next seven days, arranged according to the day of the week.

Scheduled Commands Panel

You can configure Scheduled Commands by clicking the panel's Configuration icon.

Scheduled Commands Configuration Dialog Box

About Alarms

You can monitor all the alarms in the system and receiver devices. An alarm is a state in the system or receiver device.

Displaying the Alarms panel

To display the Alarms panel:
- In the Home tab, click Alarms in the Alarms group.

Alarms Panel
Current receiver device alarms are received via the return channel, if the return channel is enabled for the receiver device, and via CAS and displayed in the Alarms panel. Alarms are colored according to their severity:

- Green - None
- Yellow - Minor
- Orange - Major
- Red - Critical

Alarms are logged in the Audit Log.

### Alarms and Descriptions

<table>
<thead>
<tr>
<th>Alarm Text</th>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent Service is Unavailable</td>
<td>Critical</td>
<td>The alarm is asserted when the server has no IP connection to the Agent service. The alarm is remitted as soon as connection is restored.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Corrective Action:</strong> Verify that the Skipper Agent service is running on the Server’s PC.</td>
</tr>
<tr>
<td>Backup Server Not Synced</td>
<td>Minor</td>
<td>The alarm is asserted by the Primary Server when it detects that it is out of sync with the Backup Server. The alarm is remitted as soon as a successful Sync is performed (and completed successfully).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Corrective Action:</strong> Sync the Primary and Backup servers.</td>
</tr>
<tr>
<td>CAS Product X not Recognized by CAS</td>
<td>Major</td>
<td>The alarm is asserted when the DMS attempts to authorize a program and the CAS returns an error that the CAS product is not recognized by the CAS system. The alarm is removed once there are no pending entitlements to this product or a successful sync has been performed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Corrective Action:</strong> Verify that the CAS Product in the Service Plan is defined correctly. If the problem persists contact Harmonic’s help desk.</td>
</tr>
<tr>
<td>Connection to CAS is compromised</td>
<td>Major</td>
<td>The alarm is asserted when the DMS is working in redundancy mode and it loses a connection to one of the CAS servers (either its own or its peer’s).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Corrective Action:</strong> Verify that the CAS parameters are configured properly and that the server has IP connection to the CAS server.</td>
</tr>
<tr>
<td>Connection to the Multiplexer is compromised</td>
<td>Minor</td>
<td>The alarm is asserted in the event that two data connections to the multiplexer are defined and one of them has failed (no IP connection).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Corrective Action:</strong> Verify that there is an IP connection between the DMS server and both multiplexers.</td>
</tr>
</tbody>
</table>
### Alarms and Descriptions

<table>
<thead>
<tr>
<th>Alarm Text</th>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
</table>
| No Available Backup                            | Major    | The alarm is asserted by the Primary Server when it is working in Redundancy mode and it has no connection (IP or other) with the Backup.  
**Corrective Action:** Check connectivity to the backup server PC and verify that the DMS Server application is running. |
| No CAS Server is Available                     | Critical | In standalone: The alarm is asserted when the DMS detects that it has no connection to the CAS.  
In Redundancy: The alarm is asserted when the DMS detects that it has no connection to all CAS (both its own and its peer).  
**Corrective Action:** Verify that the CAS parameters are configured properly and that the server has an IP connection to the CAS server. |
| No Connection to the Multiplexer               | Major    | The alarm is asserted in the event that there is no connection to any of the defined multiplexers.  
**Corrective Action:** Verify that there is an IP connection between the DMS server and the defined multiplexers. |
| No Primary Available                           | Major    | The alarm is asserted by the Backup Server when it is working in Redundancy mode and it has no connection (IP or other) to the Primary.  
**Corrective Action:** Check connectivity to the primary server PC and verify that the DMS Server application is running. |
| SC/VSC Not Recognized by CAS                   | Major    | The alarm is asserted when the DMS attempts to authorize a device and the authorization failed since the SC or VSC is not recognized by the CAS.  
The alarm is removed once there are no pending entitlements to that device (either the SC was corrected in the DMS or a successful sync is performed).  
**Corrective Action:** Verify that the SC/VSC in the device configuration is defined correctly. If the problem persists, contact Harmonic’s help desk. |
| Software Version Mismatch with Backup Server   | Major    | The alarm is asserted by the Primary Server when it is working in Redundancy mode and it detects that the Backup Server is not running the same version.  
**Corrective Action:** The software version of the backup server is not identical to the Primary. Update the backup server to the correct version. |
Exporting alarms

You can export the alarms log in Excel 2007/2010 .xlsx format. If you don’t select any alarms to export, all the alarms are exported.

To export the alarms log:
1. In the Home tab, click Browse in the Audit Log group.
   The Audit Log panel is displayed.
2. Use the Query Editor to filter the list
   See About the Query Editor.
3. Use the All, None or Selected buttons to select the respective check boxes.
4. Select entries to export.
5. In the Home tab, click Export in the Audit Log group.
   The Export Audit Log dialog box is displayed.
   Enter a file name.
6. The default file name is AuditLog <DateTime>.
7. Click Download.

About Commands

The Commands panel lists all commands which are in progress or pending, as well as commands that have been executed (canceled, failed or finished). You can:
- Display command details
- Display target devices for a command
- Cancel commands that have not finished executing

Related Topics:
- Displaying the Commands panel
- Displaying Commands details
- Displaying target devices
- Canceling a command in progress
Displaying the Commands panel

To display the Commands panel:

- In the Home tab, click Commands in the Monitoring group.

The Commands panel is displayed.

Displaying Commands details

To display commands details:

- Double-click a command in the list to display its details.

The command in the list expands to display its details.

Displaying target devices

To display the target devices for a command:

1. Double-click a command in the list to display its details.

The command in the list expands to display its details.

2. Click the blue Target devices link.

Canceling a command in progress

You can cancel the following commands:

- Download Configuration File
- Upgrade Firmware

To cancel a command in progress:

1. Select a command in the Commands panel list.
2. Click Cancel.

Select one of the following when canceling a firmware upgrade where the firmware activation mode is set to Simultaneous or Independent:

- **Current device firmware** – Do not change the device firmware version in the database. Assume it was not upgraded.
- **Command firmware** – Update the device firmware version in the database with the version in the command. Assume it was upgraded.

Command Alerts draw your attention to significant events with pop-up messages and audio alerts. See Configuring alerts for information.
About RF history

DMS snapshots the RF status of every port on every device every hour and keeps the previous week of snapshots on record so that you can save the RF history in Excel format and produce graphs with a spreadsheet. The Excel file is zipped.

To download the RF history:
1. In the **Home** tab, click **Download RF History** in the **Monitoring** group.
   
   The Download RF History dialog box is displayed.
2. Browse to a folder.
3. Click **Download**.

About Scheduled Commands

Use the **Scheduled Commands** panel to display commands scheduled to execute between specified dates.

**NOTE:** When you select a command instance, all the instances for the command are selected.

To display the Scheduled Commands panel:

- In the **Home** tab, click **Scheduled Commands** in the **Monitoring** group.

   The Schedule panel is displayed.

### Schedule Panel Controls

<table>
<thead>
<tr>
<th>Control</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cancel</strong></td>
<td>Cancels a scheduled command.</td>
</tr>
<tr>
<td><strong>Edit</strong></td>
<td>Edits the start time of a scheduled command.</td>
</tr>
<tr>
<td><strong>Collapse / Expand</strong></td>
<td>Expands / collapses all scheduled command entries. Expanding the entry allows you to see more details of the scheduled command, including target devices.</td>
</tr>
</tbody>
</table>
About Audit Log

The Audit Log panel displays a history of system and user actions in a sortable list, which can be used for tracking any past user or system activity and for auditing purposes. DMS records every time a user logs in or out of DMS. It also records alarm transitions. When an alarm transitions, either raised or cleared, it generates an event. You can scroll the log in the Audit Log panel. Click any column to sort the list according to that column. Right-click a column for a menu of column operations. Click the Query Pane to filter the log.

To display the Audit Log panel:
- In the Home tab, click Browse in the Audit Log group.

TIP: You can display the Audit Log panel with the Quick Launch toolbar. See Quick Launch Toolbar.

Audit Log Panel

Use the Query Editor to filter the list. See About the Query Editor.

See DMS GUI orientation for information on how to select columns to display.
Adding comments
You can append comments to entries in the Entry Comments text box when the respective entry is selected.

To append a comment:
1. Select the text of any entry.
   The text is highlighted.
2. Click in the text box next to the Append button.
3. Type your comment.
4. Click Append.

To edit an appended comment:
- Double-click the comment then edit it.

To remove an appended comment:
1. Click the comment.
2. Click Remove.

Custom entries
You can add free text to the Audit Log using Insert Custom Entry. This is not appended to entries but is recorded as a separate entry.

To insert a custom entry:
1. Click in the Insert Custom Entry text box.
2. Type your text.
3. Click Append.

Exporting the audit log
You can export the audit log to a .xlsx Excel file. If you don’t select any entries to export, all the entries are exported.

To export the audit log:
1. In the Home tab, click Browse in the Audit Log group.
   The Audit Log panel is displayed.
2. Use the Query Editor to filter the list.
   See About the Query Editor.
3. Use the All, None or Selected buttons to select the respective check boxes.
4. Select entries to export.
5. In the Home tab, click Export in the Audit Log group.
   The Export Audit Log dialog box is displayed.
6. Enter a filename.
7. Click Download.
About Alerts

Alerts draw the user’s attention to significant events with pop-up messages and audio alerts. There are alerts related to:

- Devices
- Groups
- Commands
- Alarms
- CAS
- TS and Programs
- Device Authorization
- Uplinks
- Input Profiles
- Blackouts and SpotLights
- User Roles
- Public Queries
- BISS Keys

See *Configuring alerts* for information.
Chapter 9
Distribution Network Setup

The following topics describe how to enable devices to process services in the system.

- **Service plan**
- **BISS keys**
- **Uplinks**
- **Input profiles**

**Service plan**

To configure devices to process any service in the system, the service has first to be defined. Each service must be assigned a unique name.

The following topics describe device configuration and control commands and are performed in the Service Plan panel (see About Service Plan):

- **Adding a transport stream**
- **Updating a transport stream**
- **Removing a transport stream**
- **Adding a program**
- **Updating a program**
- **Removing a program**

**Adding a transport stream**

Each new transport stream must be assigned an ID and a network ID.

**To add a transport stream:**

1. In the Configuration tab, click Service Plan in the Distribution Network Setup group.
2. Right-click Transport Streams.
   
   The Create Transport Stream dialog box is displayed.
Create Transport Stream Dialog Box

4. Configure the following:
   - **Name** - Type a unique name.
   - **Transport Stream ID** - Type the ID into the field or select an ID using the arrows.
     Range: 1-65534 (default 1)
   - **Network ID** - Type the ID into the field or select an ID using the arrows.
     Range: 0-65535 (default 1)

5. Click **OK**.

**Updating a transport stream**

**To update a transport stream:**
1. In the Service Plan panel, right-click a transport stream.

**Removing a transport stream**

You cannot remove a transport stream that is defined in an Input Profile.

**To remove a transport stream:**
1. In the Service Plan panel, right-click a transport stream.
2. From the context menu, select **Remove**.
3. Click **OK**.
Adding a program

DMS enables you to add and update programs for devices.

Program Property Parameters

You configure program properties according to the following parameters:

- **General area:**
  - **Program Name** – Must be unique within the transport stream.
  - **Number** – Must be unique within the transport stream.
  - **Video Resolution**
    - **HD** (default)
    - **SD**
  - **Video Codec**
    - **AVC** (default)
    - **MPEG-2**

- **Scrambling area:**
  - **Method**
    - **None** (default if VMX is not licensed)
    - **VMX** (default)
    - **BISS**
    - **CAM-1/2/3/4**
V MX CAM-1/2/3/4

- **Product Key** – This is required when VMX or VMX CAM is selected. Use the product key for CA products.
- **BISS Key** – This is required when BISS is selected. Define BISS keys using the BISS keys menu item in the Distribution Network Setup group in the Configuration tab.

- **DTA area:**
  - **Output Program Number** - Range 1– 65534. Default is the same as the program number.
  - **PID Offset** - Range is -4096 - 4096. Default is 0.

- **TX - SD area:**
  - **Output Program Number** - Range is 1– 65534. Default is the program number + 1000.
  - **PID Offset** - Range is -4096 – 4096. Default is 1000.

- **TX - HD area:**
  - **Output Program Number** - Range is 1– 65534. Default is the program number + 2000.
  - **PID Offset** - Range is -4096 – 4096. Default is 2000.

**To add a program:**
1. In the Service Plan panel, right-click a transport stream.
2. From the context menu, select **Create Program**.
   
   The Program Properties dialog box is displayed.
   
   See [Program Properties Dialog Box](#).
3. Configure program property parameters.
   
   See [Program Property Parameters](#).
4. Click **OK**.

**Updating a program**
DMS enables you to update programs for devices. Changes to programs are applied immediately.

**To update a program:**
1. In the Service Plan panel, right-click a program.
2. From the context menu, select **Update Program**.
   
   The Program Properties dialog box is displayed.
3. Configure program property parameters.
   
   See [Program Property Parameters](#) for details.
4. Click **OK**.

**Removing a program**

**To remove a program:**
1. In the Service Plan panel, right-click a program.
2. From the context menu, select **Remove**.
3. Click **OK**.
**BISS keys**

Use the BISS Keys menu option to synchronize BISS keys with devices. You can edit the key's description and number.

**To configure BISS keys:**
1. In the Configuration tab, click BISS Keys in the Distribution Network Setup group. The BISS Keys dialog box is displayed.
2. Click the **Edit** icon or double-click a key row to edit a key.

**BISS Keys Dialog Box**

The Key-# dialog box is displayed.

**BISS Key Dialog Box**

3. Type a description and the key into their respective fields.
4. Click **OK**.

**Uplinks**

Use the Uplink Properties dialog box to define uplink profiles for use with devices that have uplinks.

You can edit and remove uplink profiles by clicking the buttons at the top of the Uplinks panel. You define the following uplink profiles:

- **Satellite uplink properties**
- **IP uplink properties**
Satellite uplink properties

Configure satellite uplink properties according to the following parameters:

Uplink Properties Dialog Box: Satellite

- **Uplink Name** – Must be unique.

- **Modulation Standard** (Default DVB-S2)
  - Automatic
  - DVB-S
  - DVB-S2

- **L-Band Frequency** – Range 0.95 – 2.125 GHz. Default 1.

- **Symbol Rate** – Range 1,000,000 – 45,000,000 Msym/s, adjustable in 100 sym/s steps. Default 27.5.

- **Modulation and FEC**
  - **DVB-S** options:
    - Automatic (default)
    - QPSK 1/2
    - QPSK 2/3
    - QPSK 3/4
    - QPSK 5/6
    - QPSK 7/8
  - **DVB-S2** options:
    - Automatic (default)
    - QPSK 1/4
    - QPSK 1/3

---

1. Available only with certain hardware configurations.
Uplinks

- **QPSK 2/5**
- **QPSK 1/2**
- **QPSK 3/5**
- **QPSK 2/3**
- **QPSK 3/4**
- **QPSK 4/5**
- **QPSK 5/6**
- **QPSK 8/9**
- **QPSK 9/10**
- **8PSK 3/5**
- **8PSK 2/3**
- **8PSK 3/4**
- **8PSK 5/6**
- **8PSK 8/9**
- **8PSK 9/10**

- **Spectral Inversion** – Sets the mode of operation for the spectral inversion function.
  - **Automatic** (default)
  - **Normal**
  - **Inverted**

- **Roll Off**
  - **Automatic** – Default for DVB-S2
  - **0.2**
  - **0.25**
  - **0.35** – Default for DVB-S.
  - **PL Scrambling** – DVB-S2 only. Range 0 – 262144. Default 0.
  - **Pilot** – DVB-S2 only. Options:
    - **Automatic** (default)
    - **Enable**
    - **Disable**

- **ISI** – DVB-S2 only. Range 0 – FF. Default FF.

**To add a satellite uplink profile:**

1. In the **Configuration** tab, click **Uplinks** in the **Distribution Network Setup** group.
   
   The Uplinks Management panel is displayed.

2. Click **Add** and select **Add Satellite Uplink**.
   
   The Uplink Properties dialog box is displayed.

   See **Uplink Properties Dialog Box: Satellite**.

3. Configure Uplink property parameters.
   
   See **Satellite uplink properties**.

4. Click **OK**.
**IP uplink properties**

To add an IP uplink profile:
1. In the **Configuration** tab, click **Uplinks** in the **Distribution Network Setup** group.
   The Uplinks Management panel opens.
2. Click **Add** and select **Add IP Uplink**.
   The Uplink Properties dialog box is displayed.

3. Configure the following parameters:
   - **Uplink Name** – The name must be unique.
   - **Unicast** – Unicast is not selected by default.
   - **Multicast IP** – Default is 224.224.224.224.
   - **UDP Port** – Default is 1000.
   - **FEC Mode** – Default is **None**.
     - None
     - 1D
     - 2D
4. Click **OK**.

**Input profiles**

You define input profiles with uplinks to use with devices that support RF, GbE (IP) and ASI inputs.

You can configure a single input or up to a maximum of eight inputs.

The initial input—Input 1—supports three backup links for disaster recovery. Each link must be configured with a different port.

Changes that you make to an input profile are applied immediately to all devices that share the same input profile as part of the device configuration. You cannot remove an input profile that is part of a device configuration.

**Configuring input profiles**

You can configure single or multiple inputs. When configuring a single input, you can also define conditions for disaster recovery.
To configure inputs:
1. In the Configuration tab, click Input Profiles in the Distribution Network Setup group.
   The Input Profile Management panel is displayed.
2. Click Add.
   The Input Profile Properties dialog box is displayed.

3. Type a unique name in the Profile Name field.
4. In the Input 1 tab, select the primary port from the Port drop-down list.
5. If you want to add an input, click the Plus symbol.
   The Input 2 tab is displayed, replacing the Disaster Recovery tab.
6. Repeat step 5 to configure additional inputs (optional).
   You can configure up to a maximum of eight inputs.
7. Click OK.

   Allow Override for Input Port is selected by default. This option allows you to reconfigure RF and GbE input ports directly on ProView 7X00 and 8100 devices.
Setting up disaster recovery

Disaster Recovery can be set up only on the primary port.

When you enable Disaster Recovery, you have the option of selecting Program Aliasing on the backup ports. Using Program Aliasing allows you to set up the backup ports to output the same programs as those assigned to the primary link, an alternative program or no program (None).

When you select a different TS from that on the primary port, you can select an alternative program or None on any of the backup ports. Selecting the same TS as that on the primary port automatically outputs the same program.

**NOTE:** When Disaster Recovery is enabled, Allow Override for Input Port and Allow Override for Uplink are unavailable.

To set disaster recovery:

1. In the Configuration tab, click Input Profiles in the Distribution Network Setup group.
   The Input Profile Management panel is displayed.
2. From the Priority drop-down lists, select the priority status of the backup ports.
   Input 1 is primary by default.
   When you select a backup port, Program Aliasing becomes available.
3. From the Program Aliasing drop-down lists, select a program for the backup ports.
4. From the Uplink drop-down lists, select uplinks for both primary and backup ports supporting RF and GbE (IP) inputs.
   Uplink profiles must first be defined. See Uplinks.
   Selecting Allow Override for Uplink allows you to configure the uplink directly on the ProView 7X00 and ProView 8100.
5. From the Transport Stream drop-down lists, select transport streams for all ports.
   Transport streams must first be created. See Adding a transport stream.

**NOTE:** TSs containing services descrambled by CAMs cannot be included in a multiple-input profile.

6. Click the Disaster Recovery tab and then select Enable Disaster Recovery.
7. Under Start Conditions, in the Link Loss for field, specify how long after the link is lost to begin disaster recovery.
   The default time is 60 seconds. The range is 1–86400 seconds.
   This option is selected by default and cannot be cleared.
8. Under End Conditions, select any of the following to set disaster recovery end conditions:
   - Link Lock for – Specify, in seconds, how long after the link is locked to end disaster recovery.
     The default time is 5 seconds. The range is 1–86400 seconds.
   - DMS Lock – The TS must contain a DMS ID that matches the ID on the primary.
   - Network ID – The TS must contain a Network ID that matches the ID on the primary.
   - Transport Stream ID – The TS must contain a TS ID that matches the ID on the primary.
9. Click OK.
Importing from NMX

You can import program definition files generated with Harmonic NMX.

To import an NMX file:
1. In the **Configuration** tab, click **Import from NMX** in the **Actions** group.
   
   The Import NMX File dialog box is displayed.
2. Select a file or type a file name.
3. Click **Import NMX File**.
   
   The program definition file is added to the Service Plan panel.
To configure devices to process any service, you must create processing profiles. Changes that you make to a processing profile are applied immediately to all devices that have the processing profile as part of the device configuration. You cannot remove a profile that is part of a device configuration.

The following topics are described:

- Decoding
- Transcoding
- DTA
- DPI

**Decoding**

To create a decoding profile:

1. In the Configuration tab, click Decoding in the Processing Profiles group.
   
The Decoding Profile Management panel is displayed.
2. Click Add.
   
The Decoding Profile dialog box is displayed.
Decoding Profile Dialog Box

3. Type a unique name in to the **Profile Name** field.
4. Configure the following parameters:
   - **Local Override**
     - **All**
     - **Disabled** (default)
   - **Video Decoding** area
     - **Video PID Selection**
       - **Automatic** (default)
       - **None**
     - **Display Format**
       - **Automatic** (default)
       - **HD**
       - **SD**
     - **Video Format and Frame Rate** – This can only be configured when **Display Format** is set to HD.
       - **720p@50**
       - **720p@59**
       - **720p@60**
       - **1080i@25**
       - **1080i@29.97** (default)
- 1080i@30
- Analog Format for 625 lines
  - PAL B/G (default)
  - PAL I
  - PAL D
  - PAL N
  - French SECAM
  - Russian SECAM
- Analog Format for 525 lines
  - NTSC (default)
  - PAL M
- Aspect Ratio
  - Automatic (default)
  - 4:3
  - 16:9
- Aspect Ratio Conversion for 4:3
  - AFD (default)
  - Center-Cut
  - Letterbox
  - Anamorphic
- Aspect Ratio Conversion for 16:9
  - AFD (default)
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    - Automatic (default)
    - None
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    - Automatic (default)
    - None
    - By Priority
  - Audio Channel 3 area
    - Automatic
    - None (default)
    - By Priority
  - Audio Channel 4 area
    - Automatic
    - None (default)
    - By Priority

5. Click OK.
Transcoding

To create a transcoding profile:
1. In the Configuration tab, click TX in the Processing Profiles group.
2. Click Add.

The TX Profiles Management dialog box is displayed.

3. Type a unique name in the Profile Name field.
4. Configure the following parameters:
   - Local Override
     - Disabled (default)
     - Display Format
     - All
   - Transcoding area
     - Output Codec
       - MPEG-2 (default)
       - AVC
     - Preferred Video Format
       - HD (default)
       - SD
     - SD Output area
Chapter 10 Processing Profiles

- **Bitrate** –
  When **Output Codec** is **MPEG-2** the range is 2–15 Mbps, the default is 3. When **Output Codec** is **AVC** the range is 1–15 Mbps, the default is 2.

- **Video Resolution**
  352
  480
  528
  544
  640
  704
  720 (default)

- **Profile** –
  When **Output Codec** is **MPEG-2** the parameter is **High**. When **Output Codec** is **AVC** the parameters are **Main** and **High**, the default is **High**.

- **Aspect Ratio**
  4:3 (default)
  19:9

- **Aspect Ratio Conversion** –
  When **Aspect Ratio** is 16:9 the parameter is N/A. When **Aspect Ratio** is 4:3:
  - Letterbox
  - Center-Cut
  - AFD (Fallback to Letterbox)
  - AFD (Fallback to Center-Cut) (default)

- **GOP Mode**
  - Follow the Input (default)
  - Fixed (N & M)
  - Variable (N & M)
  - Capped (M follows the input)
  - Fixed M

- **Open/Close GOP**
  - Follow the Input (default)
  - Open
  - Close

- **GOP Length** – The range is 6–90, default 30. It must be a product of the **Mini GOP Length**.

- **Mini GOP Length** –
  When **Output Codec** is **MPEG-2**: 1, 2, 3 (default).
  When **Output Codec** is **AVC**: 1, 2, 4 (default).

- **HD Output area**

  - **Bitrate** –
    When **Output Codec** is **MPEG-2** the range is 6–18 Mbps, the default is 15. When **Output Codec** is **AVC** the range is 3–18 Mbps, the default is 10.

  - **Video Resolution**
    720 x 960
    720 x 1280 (default)
    1080i x 1280
    1080i x 1440
    1080i x 1920
Transcoding

- **Profile**
  - When **Output Codec** is MPEG-2 the parameter is **High**.
  - When **Output Codec** is AVC the parameters are **Main** and **High**, the default is **Main**.

- **Aspect Ratio** – Passthrough
- **Aspect Ratio Conversion** – None

- **GOP Mode**
  - Follow the Input (default)
  - Fixed (N & M)
  - Variable (N & M)
  - Capped (M follows the input)
  - Fixed M

- **Open/Close GOP**
  - Follow the Input (default)
  - Open
  - Close

- **GOP Length** – The range is 6-90, default 30. It must be a product of the **Mini GOP Length**.

- **Mini GOP Length** –
  - When **Output Codec** is MPEG-2: 1, 2, 3 (default).
  - When **Output Codec** is AVC and **Video Resolution** is 720p: 1, 2, 4, 8 (default).
  - When **Output Codec** is AVC and **Video Resolution** is 1080i: 1, 2, 4 (default).

- **AFD**
  - **Re-Insert** (default)
  - **Discard**

- **MCTF Level**
  - Off (default)
  - Very Weak
  - Weak
  - Normal
  - Strong
  - Very Strong

- **Pass all Data PIDs**
  - **Enable** (default)
  - **Disable**

- **Pass all Audio PIDs**
  - **Audio Priorities box** – Select audio sources from the lists to map with the audio outputs on the left.
    - **Audio #1** (primary) **Source**
      - None
      - Audio #1 (primary) (default)
      - Audio #2
      - Audio #3
      - Audio #4
    - **Audio #2 Source**
      - None
      - Audio #1 (primary)
      - Audio #2 (default)
5. Click OK.

**DTA**

To create a DTA profile:

1. In the **Configuration** tab, click **DTA** in the **Processing Profiles** group.

   The **DTA Profiles Management** panel is displayed.

2. Click **Add**.

   The DTA Profile dialog box is displayed.

**DTA Profile Dialog Box**

3. Type a unique name in the **Profile Name** field.

4. Configure the following parameters:
   - **Pass all Data PIDs**
   - **Pass all Audio PIDs**
   - **Audio Priorities** area – Select audio sources from the drop-down lists to map to the audio outputs.
     - **Audio #1 (primary) Source**
     - **None**
5. Click OK.

**DPI**

You can add up to 256 tiers in a profile.

To create a DPI profile:
1. In the Configuration tab, click DPI in the Processing Profiles group.
   The DPI Profiles Management panel is displayed.
2. Click Add.
   The Add DPI Profile dialog box is displayed.
Add DPI Profile Dialog Box

3. Type a unique name in the Profile Name field.
4. In the DPI Tiers area, type a value, one at a time, and click Add for each one.
5. Click OK.
Custom Device Attributes are attributes that are added to the standard attributes. You can use these attributes in the Query Editor or to sort the devices just like with any standard Device Attribute. The Custom Device Attributes can be of different types such as numeric, boolean, string or a list of entries and you can be categorized.

You can define Custom Device Attributes when:

- Adding devices
- Updating devices
- Cloning devices
- Swapping devices

The operations are:

- **Adding custom device attributes**
- **Editing custom device attributes**
- **Removing custom device attributes**

### Adding custom device attributes

**To add a Custom Device Attribute:**

1. In the **Configuration** tab, click **Custom Device Attributes** in the **Device Attributes** group.
   
   The **Custom Device Attributes** panel is displayed.
2. Click **Add**.
   
   The Add Custom Attribute dialog box is displayed.
3. Type a unique name for the attribute.
4. Type a description (optional).
5. From the **Type** drop-down list, select an attribute type:
   - Boolean
   - Date
   - Decimal
   - Integer
   - List: Add a list of items in the **List of Entries** pane. See [Custom device attribute list type](#).
   - String (default)
6. Select **Unique** (optional).
   
   Selecting this option sets the value as unique among devices.
7. Click **OK**.
Editing custom device attributes

To edit a Custom Device Attribute:
1. In the Configuration tab, click Custom Device Attributes in the Device Attributes group.
   The Custom Device Attributes panel is displayed.
2. Select a Custom Device Attribute and click Edit.
   The Edit Custom Device Attribute dialog box is displayed.
3. Edit the fields, as required.
   The attribute type cannot be changed.
4. Click OK.

NOTE: If the Device Browser is open when you edit Custom Device Attributes, edited attributes are not reflected in the Device Browser until you close and open it again.

Removing custom device attributes

To remove a Custom Device Attribute Entry:
1. In the Configuration tab, click Custom Device Attributes in the Device Attributes group.
   The Custom Device Attributes panel is displayed.
2. Select a Custom Device Attribute and click Remove.
3. Click OK.

Custom device attribute list type

In the Add Custom Device Attribute dialog box, selecting List from the Type drop-down list allows you to perform the following actions:

- Add
- Remove
- Move Up
- Move Down

Type an entry in the List of Entries pane. The first entry in the list is considered the default. Any device that uses the List Type is assigned the default entry.
Chapter 12
Setup

The following topics describe operations related to system setup.

- **Network connection**
- **Firmware versions**
- **Configuring alerts**
- **Sync entitlements**
- **User management**
- **Roles**

### Network connection

Use **DMS Network Connection Setup** to configure the following:

- **Connection to Multiplexers** – The DMS server supports 2 physical connections to the multiplexer. Both multicast sources are used for the spooler and agent.

**NOTE:** (The spooler is used to spool the command data, that is sent to devices, using a transport stream.

- DMS EMMs Configuration
- CAS Configuration
- DMS Redundancy Configuration

The number of connections used in the primary and backup servers for redundancy must be the same.

**To configure the DMS network:**

1. In the **Setup** tab, click **Network Connection** in the **Settings Group**.

![DMS Network Connection Setup](image)

**Connection to Multiplexers: Step 1**
2. **Connection to Multiplexers** – Configure the following parameters:
   - **Connection #1 area:**
     - **DMS NIC IP Address**
     - **Multicast Address** – The first Multicast IP to connect to a multiplexer. It must use the same NIC configuration as its peer DMS.
     - Select **Enable Connection #2**.
   - **Connection #2 area:**
     - **DMS NIC IP Address** – Required if **Connection #2** is enabled.
     - **Multicast Address** – The second Multicast IP to connect to a multiplexer. It must use the same NIC configuration as its peer DMS. Required if **Connection #2** is enabled.

3. Click **Next**.

4. **DMS EMMs Configuration** – Configure the following parameters:
   - **Bitrates area:**
     - **Reserved Bitrate for Control EMMs (50-500 Kbps)**
     - **Reserved Bitrate for File Download (50-500Kbps)**
   - **PIDs Configuration area** – The **UDP Ports** and **PIDs** are the same for both connections. You can use the same **PIDs** for all **EMMs** but they must use different **UDP Ports**. Use the arrows to set the PIDs.
     - **Commands EMM** – CMAT and CMT (Default PID is 100).
     - **SW Files Download EMM** – File downloading (Default PID is 101)
     - **Preset Files Download EMM** – Configuration files (Default PID is 102)
     - **Configuration EMM** – Input and Processing profiles (Default PID is 103)
     - **Authorization EMM** – DCT (Default PID is 104)

5. Click **Next**.
CAS Configuration: Step 3

6. **CAS Configuration** – Configure the following parameters:
   - **Enable CAS** – This check box is selected by default if CAS is enabled.
   - **CAS Configuration** area:
     - **Vendor** – Select a vendor from the drop-down list.
     - **IP Address** – Type the IP address of the CAS server.
     - **TCP Port** – Type the TCP port for connection to the CAS server.
     - **Super CAS ID** – Type the Super CAS ID of the CAS server.

7. Click **Next**.

DMS Redundancy Configuration: Step 4

8. **DMS Redundancy Configuration** – Configure the following parameters:
   - **Allow Redundancy** – Select to allow redundancy with another DMS server.
   - **Peer DMS** area:
Firmware versions

The Firmware File Management panel displays device firmware files stored in the DMS server. Use this panel to load or remove firmware files.

You must load firmware files of the required version for the following:

- To add devices of a different firmware version than is loaded on the server
- To upgrade devices

The operations are:

- **Uploading a firmware version**
- **Removing a firmware version**

### Uploading a firmware version

To upload a firmware version:
1. In the Setup tab, click **Firmware Versions** in the Settings group.
2. Click **Select file to upload** in the Firmware File Management panel.
   - The Upload dialog box is displayed.
3. Browse to a firmware version and click **Upload**.

### Removing a firmware version

You can remove firmware files one at a time.

**NOTE:** You cannot remove a firmware version that is used by devices.

To remove a firmware version:
1. In the Setup tab, click **Firmware Versions** in the Settings group.
2. Right-click a firmware version in the Firmware File Management panel.
3. Select **Remove**.
Configuring alerts

Use the Alert Notification feature to configure the visual display, audio sounds, and types of alerts.

Alert Configuration Dialog Box

To configure alerts:
1. In the Setup tab, click Alert Notification in the Settings group.
   The Alert Configuration dialog box is displayed.
2. Click each group title to expand the group and then configure the alerts for that group.
3. Click OK.
Sync entitlements

Sync Entitlements synchronizes entitlements on the server with the Verimatrix server. It also deletes entitlements that are found on the Verimatrix server and not on the DMS server.

To synchronize CAS entitlements:

- In the Setup tab, click Sync Entitlements in the CAS group.

User management

DMS uses user profiles to give multiple users different privileges. DMS has two default user profiles but you can add and edit profiles.

- Administrator – A user profile with full permissions
- Guest – A user profile with only View permissions

The default username is admin with no password.

Each user profile provides user configurable roles. A user with the User Management privilege can configure these roles with specific privileges. See Roles for details.

The operations are:

- Adding a user profile
- Editing a user profile
- Removing a user profile

Adding a user profile

You can add user profiles with different privilege levels.

To add a user profile:

1. In the Setup tab, click Users in the Users and Roles group.

   Setup tab: Users and Roles Group

   The User Management dialog box is displayed.
2. Click Add.
3. Type the user name and password in to their respective fields.
4. Select the user role from the drop-down list.
5. Click OK.

   The user profile is added.
Editing a user profile

You cannot change a username. You can change the password and the user level.

To edit a user profile:
1. Click Users in the Users and Roles group of the Setup tab.
   The User Management dialog box is displayed.
2. Click Edit.
   The Edit User Profile Properties dialog box is displayed.
3. Edit the profile.
4. Click OK.

Removing a user profile

You can remove user profiles one at a time.

To remove a user profile:
1. Click Users in the Users and Roles group of the Setup tab.
   The User Management dialog box is displayed.
2. Click Remove.
   The confirmation dialog displays.

Roles

Each user profile provides user configurable roles. A user with User Management privileges can configure roles with specific privileges. Use the Role Management panel to define privileges for each role. You can define privileges for the current built-in role and you can add new roles and define privileges for them. Selecting Create or Delete automatically selects Edit and View.

See the Privileges Categories table for a description of privileges. By default, the Administrator role has all privileges and the Guest role has View privileges only. Roles are maintained after software upgrades. You cannot delete a role that has users assigned to it.

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Roles

Managing roles

To add a role:
1. In the Setup tab, click Roles in the Users and Roles group.
2. Select a role and click Add.
   
   The Role dialog box is displayed.

   Role Dialog Box

3. Type a role name (mandatory).
4. Type a role description (optional).
5. Select the check boxes to define the user’s role.
6. Click OK.

To edit a role:
1. In the Setup tab, click Roles in the Users and Roles group.
2. Select a role in the list.
   
   In the Role Management panel, Edit becomes available.

Privileges Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Privileges to manage:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing Profiles</td>
<td>Decoding</td>
</tr>
<tr>
<td></td>
<td>TX</td>
</tr>
<tr>
<td></td>
<td>DTA</td>
</tr>
<tr>
<td></td>
<td>DPI</td>
</tr>
</tbody>
</table>

Privileges Categories

<table>
<thead>
<tr>
<th>Category</th>
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</tr>
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<tr>
<td>Processing Profiles</td>
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<td>TX</td>
</tr>
<tr>
<td></td>
<td>DTA</td>
</tr>
<tr>
<td></td>
<td>DPI</td>
</tr>
</tbody>
</table>

Managing roles

To add a role:
1. In the Setup tab, click Roles in the Users and Roles group.
2. Select a role and click Add.
   
   The Role dialog box is displayed.

   Role Dialog Box

3. Type a role name (mandatory).
4. Type a role description (optional).
5. Select the check boxes to define the user’s role.
6. Click OK.

To edit a role:
1. In the Setup tab, click Roles in the Users and Roles group.
2. Select a role in the list.
   
   In the Role Management panel, Edit becomes available.
3. Click **Edit**.
   
   The Role dialog box is displayed.
4. Select or clear the check boxes to edit the role.
5. Click **OK**.

**To remove a role:**
1. In the **Setup** tab, click **Roles** in the **Users and Roles** group.
2. Select a role in the list.
   
   In the Role Management panel, **Remove** becomes available.
3. Click **Remove**.
4. Click **OK**.
Appendix A
Contacting the Technical Assistance Center

Harmonic Global Service and Support has many Technical Assistance Centers (TAC) located globally, but virtually co-located where our customers can obtain technical assistance or request on-site visits from the Regional Field Service Management team. The TAC operates a Follow-The-Sun support model to provide Global Technical Support anytime, anywhere, through a single case management and virtual telephone system. Depending on time of day, anywhere in the world, we will receive and address your calls or emails in one of our global support centers. The Follow-the-Sun model greatly benefits our customers by providing continuous problem resolution and escalation of issues around the clock.

Report an issue online at:
http://harmonicinc.com/webform/report-issue-online

Technical Support Phone Numbers and Email Addresses

<table>
<thead>
<tr>
<th>Region</th>
<th>Telephone Technical Support</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>888.673.4896 (888.MPEG.TWO) or +1.408.490.6477</td>
<td><a href="mailto:support@harmonicinc.com">support@harmonicinc.com</a></td>
</tr>
<tr>
<td>Europe, Middle East, and Africa</td>
<td>+44.1252.555.450</td>
<td><a href="mailto:emeasupport@harmonicinc.com">emeasupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>India</td>
<td>+91.120.498.3199</td>
<td><a href="mailto:apacsupport@harmonicinc.com">apacsupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>Russia</td>
<td>+7.495.926.4608</td>
<td><a href="mailto:rusupport@harmonicinc.com">rusupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>Mainland China</td>
<td>+86.10.6569.5580</td>
<td><a href="mailto:chinasupport@harmonicinc.com">chinasupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>Japan</td>
<td>+81.3.5565.6737</td>
<td><a href="mailto:japansupport@harmonicinc.com">japansupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>Asia Pacific – Other Territories</td>
<td>+852.3184.0045 or 65.6542.0050</td>
<td><a href="mailto:apacsupport@harmonicinc.com">apacsupport@harmonicinc.com</a></td>
</tr>
</tbody>
</table>

The Harmonic Inc. support website is:
http://www.harmonicinc.com/content/technical-support

The Harmonic Inc. software download locations are:

| All Harmonic software except Cable Edge software | https://harmonic.force.com/SWAccess/SWDownloadLogin |
| Cable Edge software                              | ftp://ftp.harmonicinc.com                         |
The Harmonic Inc. corporate address is:
Harmonic Inc.
4300 North First St.
San Jose, CA 95134, U.S.A.
Attn: Customer Support

The corporate telephone numbers for Harmonic Inc. are:
Tel. 1.800.788.1330 (inside the U.S.)
Tel. +1.408.542.2500 (outside the U.S.)
Fax. +1.408.542.2511
Appendix B
Safety and Regulatory Compliance Information

Legal Disclaimer: Information in this document is provided in connection with Harmonic products. Unless otherwise agreed in writing Harmonic products are not designed nor intended for any application in which the failure of the product could cause personal injury or death.

NOTE: The information in this appendix may apply to purchased products only.

Important Safety Instructions

This section provides important safety guidelines for operators and service personnel. Specific warnings and cautions are found throughout the guide where they apply, but may not appear here. Please read and follow the important safety information, noting especially those instructions related to risk of fire, electric shock or injury to persons. You must adhere to the guidelines in this document to ensure and maintain compliance with existing product certifications and approvals. In this document, we use “product,” “equipment,” and “unit” interchangeably.

This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if it is not installed and used in accordance with the instructions in this manual. Operation of this equipment in a residential area is likely to cause harmful interference If this occurs, the user will be required to correct the interference at his or her own expense.

In event of conflict between the information in this document and information provided with the product or on our website for a particular product, this product documentation takes precedence.

Safety Symbols & Translated Safety, Warning & Caution Instructions
(English)

To avoid personal injury or property damage, before you begin installing or replacing the product, read, observe, and adhere to all the following safety instructions and information. Harmonic products and/or product packaging may be marked with the safety symbols used throughout this document, when it is necessary to alert operators, users, and service providers to pertinent safety instructions in the manuals.
### Installing or Replacing the Product Unit Warning
- Only trained and qualified service personnel should be allowed to install, replace, or service this unit (refer AS/NZS 3260 Clause 1.2.1 4.3 Service Personnel).
- Read the installation instructions before connecting the system to the power source.
- When installing or replacing the unit, always make the ground connection first and disconnect it last.
- Installation of the unit must comply with local and national electrical codes.
- This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of special tool, lock and key or other means of security.
- Use only specified replacement parts.
- Do not use this unit in or near water. Disconnect all AC power before installing any options or servicing the unit unless instructed to do so by this manual.

### Rack Mount Warning
- To prevent bodily injury when mounting or servicing this unit in a rack, special precautions must be taken to ensure your safety and stability of system:
  - Conform to local occupational health and safety requirements when moving and lifting the equipment.
  - Ensure that mounting of the unit by mechanical loading tools should not induce hazardous conditions.
  - To avoid risk of potential electric shock, a proper safety ground must be implemented for the rack and each piece of equipment installed on it.

### Chassis Warning
- Before connecting or disconnecting ground or power wires to the chassis, ensure that power is removed from the DC circuit.
- To prevent personal injury or damage to the chassis, lift the unit only by using handles that are an integral part of the chassis, or by holding the chassis underneath its lower edge.
- Any instructions in this guide that require opening the chassis or removing a board should be performed by qualified service personnel only.
- Slots and openings in the chassis are provided for ventilation. Do not block them. Leave the back of the frame clear for air exhaust cooling and to allow room for cabling - a minimum of 6 inches (15.24 cm) of clearance is recommended.
<table>
<thead>
<tr>
<th>Mark</th>
<th>Electric Shock Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="electric-shock-warning.png" alt="Warning" /></td>
<td>This unit might have more than one power cord. To reduce the risk of electric shock, disconnect the two power supply cords before servicing the unit.</td>
</tr>
<tr>
<td></td>
<td>Before working on a chassis or working near power supplies, unplug the power cord on AC units.</td>
</tr>
<tr>
<td></td>
<td>Do not work on the system or connect or disconnect cables during periods of lightning activity.</td>
</tr>
<tr>
<td></td>
<td>This unit is grounded through the power cord grounding conductor. To avoid electric shock, plug the power cord into a properly wired receptacle before connecting the product input or outputs.</td>
</tr>
<tr>
<td></td>
<td>Route power cords and other cables so that they are not likely to be damaged. Disconnect power input to unit before cleaning. Do not use liquid or aerosol cleaners; use only a damp cloth to clean chassis.</td>
</tr>
<tr>
<td></td>
<td>Dangerous voltages exist at several points in this product. To avoid personal injury, do not touch exposed connections and components while power is on. Do not insert anything into either of the system's two power supply cavities with power connected.</td>
</tr>
<tr>
<td></td>
<td>Never install an AC power module and a DC power module in the same chassis.</td>
</tr>
<tr>
<td></td>
<td>Do not wear hand jewelry or watch when troubleshooting high current circuits, such as the power supplies.</td>
</tr>
<tr>
<td></td>
<td>To avoid fire hazard, use only the specified correct type voltage and current ratings as referenced in the appropriate parts list for this unit. Always refer fuse replacement to qualified service personnel.</td>
</tr>
<tr>
<td></td>
<td>This unit relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors).</td>
</tr>
<tr>
<td></td>
<td>To avoid electrocution ensure that the rack has been correctly grounded before switching on the unit. When removing the unit remove the grounding connection only after the unit is switched off and unplugged.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mark</th>
<th>Electrostatic Discharge (ESD) Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="caution.png" alt="Caution" /></td>
<td>Follow static precaution at all times when handling this unit.</td>
</tr>
<tr>
<td></td>
<td>Always wear an ESD-preventive wrist or ankle strap when handling electronic components. Connect one end of the strap to an ESD jack or an unpainted metal component on the system.</td>
</tr>
<tr>
<td></td>
<td>Handle cards by the faceplates and edges only; avoid touching the printed circuit board and connector pins.</td>
</tr>
<tr>
<td></td>
<td>Place any removed component on an antistatic surface or in a static shielding bag.</td>
</tr>
<tr>
<td></td>
<td>Avoid contact between the cards and clothing.</td>
</tr>
<tr>
<td></td>
<td>Periodically check the resistance value of the antistatic strap. Recommended value is between 1 and 10 mega-ohms (Mohms).</td>
</tr>
</tbody>
</table>
Appendix B Safety and Regulatory Compliance

Symboles de sécurité et traduits de sécurité, d'avertissement et Attention Instructions (français)

Pour éviter des blessures ou des dommages matériels, avant de commencer l'installation ou le remplacement du produit, lire, observer, et de respecter toutes les instructions et informations de sécurité suivantes. Produits harmoniques et / ou l'emballage du produit peuvent être marqués avec les symboles de sécurité utilisés dans le présent document, lorsque cela est nécessaire pour alerter les opérateurs, les utilisateurs et les fournisseurs de services de consignes de sécurité pertinentes dans les manuels.

<table>
<thead>
<tr>
<th>Mark</th>
<th>Notes</th>
</tr>
</thead>
</table>
| ![Laser Radiation Warning](image) | **Laser Radiation Warning**  
Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments. Never operate a unit with a broken fibre or with a separated fiber connector. |
| ![Lithium Battery Handling Safety Instructions](image) | **Lithium Battery Handling Safety Instructions**  
- CALIFORNIA PERCHLORATE ADVISORY: Some lithium batteries may contain perchlorate material. The following advisory is provided:  
"Perchlorate Material - special handling may apply, see: [www.dtsc.ca.gov/hazardous_waste/perchlorate/](http://www.dtsc.ca.gov/hazardous_waste/perchlorate/) for information".  
- Risk of explosion if battery is replaced incorrectly or with an incorrect type  
- Dispose of used batteries according to the manufacturer's instructions  
- There are no user-serviceable batteries inside Harmonic products. Refer to Harmonic qualified personnel only to service the replaceable batteries |
| ![Caution](image) | |

---

© 2017 Harmonic Inc. All rights reserved. 120 DMS Release 3.7.1, Rev A
### Mark

<table>
<thead>
<tr>
<th>Mark</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="Mark" /></td>
<td><strong>Installation ou remplacement de l'unité de produit Avertissement</strong>&lt;br&gt;■ Il est vivement recommandé de confier l’installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés. (voir AS / NZS 3260 article 1.2.14.3 du personnel de service).&lt;br&gt;■ Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.&lt;br&gt;■ Lors de l'installation ou le remplacement de l'appareil, la mise à la terre doit toujours être connectée en premier et déconnectée en dernier.&lt;br&gt;■ L'équipement doit être installé conformément aux normes électriques nationales et locales.&lt;br&gt;■ Cet appareil est à installer dans des zones d'accès réservé. Ces dernières sont des zones auxquelles seul le personnel de service peut accéder en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.&lt;br&gt;■ Utilisez uniquement des pièces de rechange spécifiées.&lt;br&gt;■ Ne pas utiliser ce produit dans l'eau ni à proximité de l'eau. Débrancher toutes les prises d'alimentation secteur avant d'installer des options ou d'effectuer l'entretien de l'unité, à moins d'instructions contraires dans le présent manuel.</td>
</tr>
<tr>
<td><img src="image.png" alt="Mark" /></td>
<td><strong>Rack Monture Avertissement</strong>&lt;br&gt;Pour éviter les blessures corporelles lors du montage ou l'entretien de cet appareil dans un rack, des précautions particulières doivent être prises pour assurer votre sécurité et la stabilité du système:&lt;br&gt;■ Conformez-vous aux exigences de médecine du travail et de sécurité lorsque vous déplacez et soulevez le matériel.&lt;br&gt;■ Assurez-vous que le montage de l’appareil par des outils de chargement mécaniques ne doit pas induire des conditions dangereuses.&lt;br&gt;■ Pour éviter tout risque d’électrocution, le rack et chaque élément de l’équipement installé dans le rack doivent être correctement reliés à la terre.</td>
</tr>
<tr>
<td><img src="image.png" alt="Mark" /></td>
<td><strong>Châssis Avertissement</strong>&lt;br&gt;■ Avant de connecter ou de déconnecter les câbles d'alimentation (pôles et terre) du châssis, vérifiez que le circuit de courant continu est hors tension.&lt;br&gt;■ Pour éviter toute blessure ou des dommages au châssis, soulevez l'unité uniquement par les poignées du châssis lui-même ou en portant celui-ci par le bord inférieur.&lt;br&gt;■ Toutes les opérations du présent guide nécessitant l'ouverture du châssis ou le retrait d'une carte doivent être uniquement effectuées par du personnel d'entretien qualifié.&lt;br&gt;■ Le châssis est muni de fentes et d'ouvertures d'aération. Ne pas les bloquer. Dégager l’arrière du cadre pour permettre le refroidissement de l’évacuation d’air et laisser de la place au câblage; un dégagement d’au moins 15.24 cm (6 po) est recommandé.</td>
</tr>
<tr>
<td>Mark</td>
<td>Choc électrique Avertissement</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
<td>Il est possible que cette unité soit munie de plusieurs cordons d'alimentation. Pour éviter les risques d'électrocution, débrancher les deux cordons d'alimentation avant de réparer l'unité.</td>
</tr>
<tr>
<td></td>
<td>Avant de travailler sur un châssis ou à proximité d'une alimentation électrique, débrancher le cordon d'alimentation des unités en courant alternatif.</td>
</tr>
<tr>
<td></td>
<td>Ne pas travailler sur le système ni brancher ou débrancher les câbles pendant un orage.</td>
</tr>
<tr>
<td></td>
<td>Ce unité est mis à la terre par le conducteur de protection intégré au cordon d'alimentation. Pour éviter les chocs électriques, brancher le cordon d'alimentation dans une prise correctement câblée avant de raccorder les entrées ou sorties du unité.</td>
</tr>
<tr>
<td></td>
<td>Installuer les cordons d'alimentation et autres cables de sorte qu'ils ne risquent pas d'être endommagés. Couper l'alimentation avant nettoyage. Ne pas utiliser de nettoyant liquide ou en aérosol; utiliser seulement un linge humide.</td>
</tr>
<tr>
<td></td>
<td>Des courants électriques dangereux circulent dans cet appareil. Afin d'éviter les lessures, ne pas toucher les connexions et composants exposés lorsque l'appareil est sous tension. Ne rien insérer dans l'une ou l'autre des cavités des prises de courant du système lorsque l'appareil est sous tension.</td>
</tr>
<tr>
<td></td>
<td>N'installez jamais un module d'alimentation AC et un module d'alimentation DC dans le même châssis.</td>
</tr>
<tr>
<td></td>
<td>Ne pas porter de bijoux aux mains ni de montre durant le dépannage des circuits à haute tension, comme les transformateurs.</td>
</tr>
<tr>
<td></td>
<td>Pour prévenir les risques d'incendie, n'utiliser que le type, la tension et le courant nominal spécifiés dans la nomenclature des pièces de ce unité. Toujours confier le remplacement des fusibles à du personnel d'entretien qualifié.</td>
</tr>
<tr>
<td></td>
<td>Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifier qu'un fusible ou qu'un disjoncteur de 120 V alt., 15 A U.S. maximum (240 V alt., 10 A international) est utilisé sur les conducteurs de phase (conducteurs de charge).</td>
</tr>
<tr>
<td></td>
<td>Pour éviter l'électrocution, assurez-vous que le rack a bien été mis à la terre avant de mettre l'unité en marche. Lors du retrait de l'unité, retirer le raccordement de terre seulement après avoir mis l'unité à l'arrêt et l'avoir débranchée.</td>
</tr>
<tr>
<td>Mark</td>
<td>Les décharges électrostatiques (ESD) Attention</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>■ Respecter systématiquement les precautions relatives aux charges électrostatiques durant la manipulation de cet unité.</td>
</tr>
<tr>
<td></td>
<td>■ Portez toujours un poignet ou la cheville bracelet antistatique préventive lors de la manipulation des composants électroniques. Branchez une extrémité de la sangle à une prise ESD ou d'un composant métallique non peinte sur le système.</td>
</tr>
<tr>
<td></td>
<td>■ Manipulez les cartes en les faces avant et les bords seulement; éviter de toucher la carte de circuit imprimé et les broches du connecteur.</td>
</tr>
<tr>
<td></td>
<td>■ Placer un composant retiré sur une surface antistatique ou dans un sac de protection statique.</td>
</tr>
<tr>
<td></td>
<td>■ Éviter tout contact entre les cartes et les vêtements.</td>
</tr>
<tr>
<td></td>
<td>■ Vérifier périodiquement la valeur de résistance de la sangle antistatique. Valeur recommandée est comprise entre 1 et 10 méga-ohms (Mohms).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mark</th>
<th>Rayonnement laser Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>■ Rayonnement laser invisible peut être émis à partir de fibres ou les connecteurs débranchés. Ne pas regarder en faisceaux ou regarder directement avec des instruments optiques. Ne jamais faire fonctionner une unité en cas de bris d’une fibre ou de séparation d’un connecteur de fibre.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mark</th>
<th>Batterie au lithium Manipulation instructions de sécurité</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>■ Perchlorate pour la Californie Consultatif: Certaines batteries au lithium, peuvent contenir du perchlorate. le texte qui suit consultatif est prévu: &quot;Présence de perchlorate - une manipulation spéciale peut s’appliquer, voir: <a href="http://www.dtsc.ca.gov/hazardous_waste/perchlorate/">www.dtsc.ca.gov/hazardous_waste/perchlorate/</a> for information&quot;.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mark</th>
<th>Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>■ Il y a danger d'explosion si la batterie est remplacée de manière incorrecte ou par une batterie de type incorrect.</td>
</tr>
<tr>
<td></td>
<td>■ Mettre au rebut les batteries usagées conformément aux instructions du fabricant.</td>
</tr>
<tr>
<td></td>
<td>■ Les batteries des produits Harmonic ne peuvent pas être réparées ni entretenues par l’utilisateur. Ne confier l’entretien des batteries remplaçables qu’à du personnel compétent de Harmonic.</td>
</tr>
</tbody>
</table>

**Sicherheit Symbole und übersetzt Sicherheit, Achtung & Vorsicht Anleitung (Deutsch)**

Um Verletzungen oder Sachschäden zu vermeiden, bevor Sie mit der Installation oder Austausch des Produkts zu beginnen, zu lesen, zu beobachten, und sich an all den folgenden Sicherheitshinweise und Informationen. Harmonic Produkte und / oder Produktverpackungen können mit den Sicherheitssymbole in diesem Dokument verwendet werden, markiert, wenn es notwendig ist für die Betreiber, Anwender und Dienstleister, um relevante Sicherheitsanweisungen in den Handbüchern zu alarmieren.
Appendix B Safety and Regulatory Compliance

Sicherheit Symbole und übersetzt Sicherheit, Achtung & Vorsicht Anleitung (Deutsch)

Information

<table>
<thead>
<tr>
<th>Mark</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Warning Symbol]</td>
<td><strong>Installation oder den Austausch des Produkts Einheit Warnung</strong></td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden (siehe AS / NZS 3260 Clause 1.2.14.3 Servicepersonal)</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Lesen Sie die Installationsanweisungen, bevor Sie das System an die Stromquelle anschließen.</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Der Erdanschluß muß bei der Installation der Einheit immer zuerst hergestellt und zuletzt abgetrennt werden.</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Die Installation der Geräte muss den Sicherheitsstandards entsprechen.</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Verwenden Sie nur die angegebenen Ersatzteile</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td><strong>Rack-Montage-Warnung</strong></td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Zur Vermeidung von Körperverschmutzung beim Anbringen oder Warten dieser Einheit in einem Gestell müssen Sie besondere Vorkehrungen treffen, um sicherzustellen, daß das System stabil bleibt:</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Entsprechen den lokalen Arbeitsschutzanforderungen beim Bewegen und Heben der Ausrüstung.</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Stellen Sie sicher, dass die Montage des Gerätes durch mechanische Belastung Werkzeuge sollten nicht gefährlichen Bedingungen zu induzieren.</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Um das Risiko von möglichen elektrischen Schlag zu vermeiden, muss mit einer angemessenen Erdung für Rack und jedes Gerät installiert ist implementiert werden.</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td><strong>Chassis Warnung</strong></td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Gleichstrom-Unterbrechung Bevor Sie Erdungs- oder Stromkabel an das Chassis anschließen oder von ihm abtrennen, ist sicherzustellen, daß der Gleichstrom-Stromkreis unterbrochen ist.</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Um Verletzungen und Beschädigung des Chassis zu vermeiden, sollten Sie das Chassis nicht an den Henkeln auf den Elementen (wie z.B. Stromanschlüsse, Kühlschrank oder Karten) heben oder kippen; oder indem Sie es unterhalb der Unterkante packen.</td>
</tr>
<tr>
<td>![Warning Symbol]</td>
<td>- Alle Hinweise in diesem Handbuch, die das Öffnen benötigen Sie das Gehäuse oder das Entfernen eines Board sollte nur von qualifiziertem Fachpersonal durchgeführt werden.</td>
</tr>
</tbody>
</table>
Warnung

Elektroschock-Warnung

- Diese Einheit hat möglicherweise mehr als ein Netzkabel. Zur Verringerung der Stromschlaggefahr trennen Sie beide Netzgerätekabel ab, bevor Sie die Einheit warten.
- Vor der Arbeit an einem Chassis für Arbeiten in der Nähe Stromversorgung, ziehen Sie das Netzkabel mit Netzeinheiten.
- Arbeiten Sie nicht am System und schließen Sie keine Kabel an bzw. trennen Sie keine ab, wenn es gewittert.
- Dieses Gerät ist über das Netzkabel Erdungsleiter geerdet. Um einen Stromschlag zu vermeiden, stecken Sie das Netzkabel in eine Steckdose richtig verdrahtet, bevor Sie das Produkt Eingang oder Ausgänge.
- Verlegen Sie Netzkabel und andere Kabel, so dass sie wahrscheinlich nicht beschädigt werden. Trennen Eingangsleistung Einheit vor der Reinigung. Verwenden Sie keine flüssigen oder Aerosolreiniger; nur mit einem feuchten Tuch zu reinigen Chassis.
- Ein Wechselstromsmodul und ein Gleichstrommodul dürfen niemals in demselben Chassis installiert werden.
- Tragen Sie keine Hand Schmuck oder schauen Sie bei der Fehlersuche hohen Stromkreise, wie beispielsweise die Stromversorgung.
- Um die Brandgefahr zu vermeiden, verwenden Sie nur den genannten richtige Art von Spannung und Strom Ratings als in der entsprechenden Stückliste für diese Einheit verwiesen. Beziehen sich immer auf Austausch der Sicherung von qualifiziertem Fachpersonal.
- Dieses Produkt ist darauf angewiesen, daß im Gebäude ein Kurzschluß-bzw. Überstromschutz installiert ist. Stellen Sie sicher, daß eine Sicherung oder ein Unterbrecher von nicht mehr als 240 V Wechselstrom, 10 A (bzw. in den USA 120 V Wechselstrom, 15 A) an den Phasenleitern (allen Stromführenden Leitern) verwendet wird.
- Um einen Stromschlag zu vermeiden, sicherzustellen, dass die Zahnstange wurde korrekt vor dem Einschalten des Gerätes geerdet. Beim Entfernen der Einheit entfernen Sie die Masseverbindung nur, nachdem das Gerät ausgeschaltet und der Netzstecker gezogen.
Site Preparation Instructions

**NOTE:** Only trained and qualified service personnel (as defined in IEC 60950 and AS/NZS 3260) should install, replace, or service the equipment. Install the system in accordance with the U.S. National Electric Code if you are in the United States.

1. Preparing & Choosing a Site for Installation
   - To ensure normal system operation, plan your site configuration and prepare the site before installation.
   - Install the unit in a restricted access area.
Choose a site with a dry, clean, well-ventilated and air-conditioned area.

Choose a site that maintains an ambient temperature of 32 to 104°F (0 to 40°C)

2. Creating a Safe Environment

- Connect AC-powered systems to grounded power outlets or as per local regulations.
- Do not move or ship equipment unless it is correctly packed in its original wrapping and shipping containers.
- Only allow Harmonic trained personnel to undertake equipment service and maintenance. Do not permit unqualified personnel to operate the unit.
- Wear ear protection when working near an NSG Pro platform for a longer period of time.

3. Rack Mounting the Unit

- Install the system in an open rack whenever possible. If installation in an enclosed rack is unavoidable, ensure that the rack has adequate ventilation.
- Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips). This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in the partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
- The rack must be anchored to an immovable support to prevent it from tipping when the unit is mounted on it. The rack must be installed according to the rack manufacturer’s instructions.
- Disconnect all power and external cables before lifting the unit. Depending on the weight of the unit, more than one person might be required to lift it.

4. Power Considerations

a. AC Power

- Adding to the system a UPS (Uninterrupted Power Supply) and an AVR (Automated Voltage Regulator) is highly recommended.
- Installing the main power supply by a qualified electrician, according to power authority regulations. Make sure all powering are wired with an earth leakage, according to local regulations.
- It is recommended to install the encoder within 1.5m (approximately 5 feet) from an easily accessible grounded AC outlet.
- When the encoder is rack-mounted, ensure that the rack is correctly grounded.

b. DC Power

- Ensure a suitable overcurrent device is in-line between the equipment and the power source.
- Connect DC-input power supplies only to a DC power source that complies with the safety extra-low voltage (SELV) requirements in the UL60950-1, CAN/CSA-C22.2 No. 60950-1-03, AS/NZS 60950-1, EN/IEC 60825-1, 21 CFR 1040, EN 60950-1, and IEC 60950-1 standards.
- Ensure that power is removed from the DC circuit before installing or removing power supplies.

5. Handling Fiber Channel Cables

- Always read and comply with the handling instructions on the shipping container.
- Follow all ESD precautions and approved fiber cleaning procedures.
The fiber is made of a very pure, expensive glass and should be treated with great care. Handle fibers only in areas that are very clean and do not contain sharp objects.

Wear finger cots or gloves as dirt and oils can damage the fiber and contaminate connectors.

Do not allow kinks or knots to develop in the fiber. If tangles occur, carefully work out the tangles avoiding pulling or bending the fibre beyond its bend radius.

Always use the correct tools for stripping and cleaving the fiber. It will save time and reduce breakage caused by scratches.

If you must secure a bundle of fiber cables together, avoid plastic and metal tie wraps; secure with velcro instead.

6. Disposing of the Unit
   Dispose of the unit and its components (including batteries) as specified by all national laws and regulations.

Product End-of-Life Disassembly Instructions

For disassembly instructions, please call the technical support in order to remove components requiring selective treatment, as defined by the EU WEEE Directive (2012/19/EU). See Contacting the Technical Assistance Center.

Product Disassembly Process

1. Disassemble equipment at a dedicated area only, gather the needed tools for disassembly.
2. Remove covers, housing, etc.
3. Remove and separate sub-assemblies (i.e. cables, metals, displays, fans, etc.).
4. Separate hazardous materials from the remainder of the material.
   a. Sort hazardous materials into their different types (i.e., batteries, hazardous liquids, hazardous solids, fiberglass, etc.).
   b. Proceed with hazardous waste management processes only.
5. Identify re-usable materials/sub-assemblies and separate these from the rest of the material.
6. Identify and separate recyclable materials as per below examples:
   a. Scrap material to be sent to smelter(s).
   b. E-waste such as displays, CPU’s, cables and wires, hard drives, keyboards, etc.
   c. Metals such as steel, brass, and aluminum.
   d. Plastics such as fan casings, housings, covers, etc.
   e. Fiber optics and plastic tubing not containing electrical or data wiring.

Safety Rules (English)

Recycler personnel are to wear personal protective equipment including proper eye protection, proper hand protection, and proper breathing protection if needed.

Recycler personnel shall be experienced with using the proper tools required for disassembling equipment. Untrained personnel shall not disassemble Harmonic products. Unfamiliarity with tools can cause damage and injury.

Règles de sécurité (French)

Le personnel du recylceur doit porter de l’équipement de protection individuelle, y compris des lunettes, des gants et un masque de protection appropriés au besoin.
Le personnel du recycleur doit avoir de l'expérience des outils de démontage de l'appareil. Les produits Harmonic ne doivent pas être démontés par du personnel non qualifié. Une mauvaise connaissance des outils peut causer des dommages et des blessures.

**EU Manufacturer's Declaration of Conformity**

This equipment is in compliance with the essential requirements and other provisions of Directives 73/23/EEC and 89/336/EEC as amended by Directive 93/68/EEC.

**NOTE:** For specifics, about which standards have been applied, refer to the Declaration of Conformity of the product on Harmonic website at [Product Regulatory Compliance](regulatory.compliance@harmonicinc.com) or contact Harmonic Compliance Team at regulatory.compliance@harmonicinc.com

**Electromagnetic Compatibility Notices – Class A**

a. **FCC Verification Statement (USA)**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to correct the interference at their own expense.

Connections between the Harmonic equipment and other equipment must be made in a manner that is consistent with maintaining compliance with FCC radio frequency emission limits. Modifications to this equipment not expressly approved by Harmonic may void the authority granted to the user by the FCC to operate this equipment and you may be required to correct any interference to radio or television communications at your own expense.

b. **ICES–003 Statement (Canada)**

**English:** This Class A digital apparatus complies with Canadian ICES-003.

**French:** Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

c. **CE Declaration of Conformity (European Union)**

This product has been tested in accordance too, and complies with the Low Voltage Directive (2014/30/EU) and EMC Directive (2014/35/EU). The product has been marked with the CE Mark to illustrate its compliance.
Appendix B Safety and Regulatory Compliance

Electromagnetic Compatibility Notices – Class A

d. VCCI Class A Warning (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（V C C I）の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波障害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

English translation of the notice above:
This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) from Information Technology Equipment. If this equipment is used in a domestic environment, it may cause radio interference. When such trouble occurs, the user may be required to take corrective actions.

e. BSMI EMC Notice (Taiwan)

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策

English translation of the notice above:
This is a Class A Information Product, when used in residential environment, it may cause radio frequency interference, under such circumstances, the user may be requested to take appropriate counter measures.

f. Class A Warning (Korea)

주의 A급 기기 이 기기는 엽무용으로 전자파 적합 등록을 한 기기이
또는 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약
 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

English translation of the notice above:
This is a Class A device and is registered for EMC requirements for industrial use. The seller or buyer should be aware of this. If this was sold or purchased by mistake, it should be replaced with a residential-use type.

g. Class A Statement (China)

中华人民共和国“A类”警告声明

声明
此为A级产品，在生活环境巾，该产品可能会造成无线电干扰。在这种情况下，可能需要用户采取切实可行的措施。

English translation of the notice above:
When labeled with the CCC marking, the product meets the applicable safety and EMC requirements for China. This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

h. Class A Warning – CISPR 22 (AS/NZS)

Warning (English)

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Attention (French)

Il s’agit d’un produit de classe A. Dans un environnement local, ce produit peut entraîner des perturbations radioélectriques, auquel cas l’utilisateur devra éventuellement prendre des mesures adéquates.

Product Regulatory Compliance

Harmonic products are typically tested to the latest safety and electromagnetic compatibility (EMC) specifications and test methods, and are marked with one or more of the following regulatory/certification markings. Some of the certification markings will vary depending on what certifier was used to obtain a certification.

Please visit Harmonic Product Regulatory Compliance page to view information on applied safety & EMC standards and regulatory marks on Harmonic products. You can also email us at regulatory.compliance@harmonicinc.com for assistance on regulatory compliance for Harmonic products.

Product Regulatory Compliance Markings

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Testing Standard/Specification</th>
<th>Certification Type</th>
<th>Regulatory Mark Name</th>
<th>Product Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA/ Canada</td>
<td>EN 60950-1:2006+A11:2009+A1:2010+A12:2011; CAN/CSA C22.2 No. 60950-1-07+A1:2011/UL 60950-1:2011</td>
<td>Safety</td>
<td>NRTL (National Recognized Test Laboratory)</td>
<td><img src="image" alt="UL Listed" /> or <img src="image" alt="UL Marked" /></td>
</tr>
</tbody>
</table>

USA/ Canada    | FCC CFR 47 Part 15, Class A ICES-003: Issue 5, 2012; Class A | EMC                | FCC Class A Statement | ![Statement](image) |

*This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations.*
# Regulatory Compliance Markings

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Testing Standard/Specification</th>
<th>Certification Type</th>
<th>Regulatory Mark Name</th>
<th>Product Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>EN 60950-1; EN60825-1 (for laser)</td>
<td>Safety</td>
<td>GS</td>
<td>![GS]</td>
</tr>
<tr>
<td>Mexico</td>
<td>NOM-019-SCFI-1998</td>
<td>Safety</td>
<td>NOM</td>
<td>![NOM]</td>
</tr>
<tr>
<td>Taiwan</td>
<td>CNS 14336-1:2010 CNS 13438.2006; Class A</td>
<td>Safety and EMC</td>
<td>BSMI Certification (RPC Number &amp; Class A Warning)</td>
<td>![BSMI]</td>
</tr>
<tr>
<td>Japan</td>
<td>VCCI V-3/2013.04; CISPR 22:2008, Class A</td>
<td>EMC</td>
<td>VCCI</td>
<td>![VCCI]</td>
</tr>
<tr>
<td>Australia and New Zealand</td>
<td>AS/NZS CISPR22:2009+A1:2010; Class A</td>
<td>Safety</td>
<td>C-Tick</td>
<td>![C-Tick]</td>
</tr>
<tr>
<td>Korea</td>
<td>KN22 Class A and KN 24</td>
<td>EMC</td>
<td>KC</td>
<td>![KC]</td>
</tr>
</tbody>
</table>
Appendix B Safety and Regulatory Compliance Information

Product Environmental Compliance

Harmonic manufactures high quality and innovative IT and telecommunications equipment, video delivery infrastructure solutions and services for its customers worldwide. Harmonic is committed to providing our customers with safe and environmentally friendly products that are compliant with all relevant regulations, customer specifications, and environmental legislation, including the directives described below.

EU RoHS

In July 2006, the European Union’s (EU) Directive (2002/95/EC) on the Restriction of the use of certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment (EEE) went into effect, and in July, 2011, the European Union’s RoHS Recast Directive (2011/65/EU) also known as RoHS II entered into force.

Harmonic understands the environmental risks associated with the substances covered by the RoHS Directive and has committed to eliminating or reducing the use of these, as well as other environmentally sensitive substances in our products. Harmonic also continues to comply with the requirements under RoHS II.

For more information, please visit EU RoHS directive page at official EU website.


Restricted Substance Statement

Harmonic products contain less than the permitted limits for the six restricted substances except where exemptions published in the RoHS2 Directive are applicable. This statement is based on vendor-supplied analysis or material certifications, and/or lab test results of the component raw materials used in the manufacture of Harmonic products.

Restricted Substances

<table>
<thead>
<tr>
<th>Restricted Substance</th>
<th>Permitted Limit*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium (Cd)</td>
<td>≤ 0.01%</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>≤ 0.1%</td>
</tr>
<tr>
<td>Chromium (VI) (Cr (VI))</td>
<td>≤ 0.1%</td>
</tr>
<tr>
<td>Mercury (Hg)</td>
<td>≤ 0.1%</td>
</tr>
</tbody>
</table>
Appendix B Safety and Regulatory Compliance

Information

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Product Environmental Compliance

Restricted Substances

<table>
<thead>
<tr>
<th>Restricted Substance</th>
<th>Permitted Limit*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polybrominated biphenyls (PBBs)</td>
<td>≤0.1%</td>
</tr>
<tr>
<td>Polybrominated diphenyl ether (PBDE)</td>
<td>≤0.1%</td>
</tr>
</tbody>
</table>

*Homogeneous material definition as per the EU Directive.

EU REACH


Harmonic supports the basic aim of REACH in improving the protection of human health and environment through the better and earlier identification of intrinsic properties of chemical substances. Harmonic products are considered “articles” under REACH; therefore, we are required to provide recipients of our products with information on Substance of Very High Concern (SVHC) present in concentration above 0.1% (w/w).

Substances in our products are not intended to be released under normal or reasonably foreseeable conditions of use; therefore, the registration requirement in REACH Article 7(1) does not apply to our products.

For more information, please visit REACH regulation page at official EU website.

http://ec.europa.eu/environment/chemicals/reach/reach_en.htm

China RoHS

China’s regulation on restriction of the use of certain hazardous substances commonly (China RoHS), is applicable to all Electronic and Information Products (EIPs) and parts sold in China after March 01, 2007. China RoHS regulation restricts the use of the same six substances as the European Union’s ROHS, but has requirements for product labeling and regulated substance information disclosure.

Harmonic complies with China RoHS Phase I for labeling and information disclosure requirements and continues to monitor new developments in China RoHS Phase II towards substance restriction and certification program.

For more information, please visit China RoHS regulation page at official US export website.

http://www.export.gov/china/doingbizinchina/
## China RoHS Disclosure Report

Below table shows the presence of hazardous substances, or elements in Harmonic products, if the part is present.

This table shows those components where hazardous substances may be found in Harmonic products based on, among other things, material content information provided by third party suppliers. These components may or may not be part of the product.

除非特殊注明, 哈雷公司产品的环保使用期限 均为 20 年。该环保使用期限的有效条件为：必须遵循该产品使用手册的规定, 对该产品进行使用或存储。

The Environmental Protective Use Period for Harmonic products is 20 years unless displayed otherwise on the product. The EPUP period is valid only when the products are operated or stored as per the conditions specified in the product manual.

<table>
<thead>
<tr>
<th>部件名称 (Part name)</th>
<th>有毒有害物质或元素 (Hazardous Substance)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>铅 (PB)</td>
</tr>
<tr>
<td>印刷线路板 (Printed Circuit Assemblies)</td>
<td>X</td>
</tr>
<tr>
<td>机械组件 (Mechanical Subassemblies)</td>
<td>X</td>
</tr>
<tr>
<td>光学组件 (Optical Subassemblies)</td>
<td>X</td>
</tr>
<tr>
<td>电源 (Power Supplies)</td>
<td>X</td>
</tr>
<tr>
<td>缆线 / 线束 (Cables, harnesses)</td>
<td>X</td>
</tr>
<tr>
<td>屏幕 / 显示器 (Screens, Monitors)</td>
<td>X</td>
</tr>
<tr>
<td>金属零件 (Metal Parts)</td>
<td>X</td>
</tr>
<tr>
<td>塑料 / 发泡材料 (Plastics, foams)</td>
<td>O</td>
</tr>
<tr>
<td>电池 (Batteries)</td>
<td>O</td>
</tr>
</tbody>
</table>

O: 表示在该部件的所有均质材料中，此类有害有害物质的含量均小于 SJ/T11363-2006 标准所规定的限量。
O: Indicates the content of the toxic and hazardous substances at the homogeneous material level of the parts is below the limit defined in SJ/T 11363 2006 standard.

X: 表示至少在该部件的某一均质材料中，此类有害有害物质的含量超过 SJ/T11363-2006 标准规定的限量。
X: Indicates that the content of the toxic and hazardous substances in at least one of the homogeneous materials of the parts is above the limit defined in SJ/T 11363 2006 standard.
Other RoHS and REACH type Regulations

Harmonic will comply with RoHS and REACH type regulations evolving in other countries, if they become relevant to our products or in markets where we sell our products.

Waste Electrical and Electronic Equipment (WEEE)

European Parliament and the Council of the European Union’s WEEE Directive (2002/96/EC) came into force on August, 2005 and, were more recently amended in July, 2012. This directive encourages the reuse, recycling, and recovery of WEEE and to improve the environmental performance of all operators involved in the life cycle of electrical and electronic equipment, especially those dealing with WEEE. Harmonic ensures that all requirements for registration, reporting, design and data tracking are complied with to meet the objectives of the WEEE directive.

For more information, please visit WEEE directive page at official EU website.


Battery Directive

In September 2006, the European Union’s Directive 2006/66/EC (Battery Directive) came into force with an aim to prohibit the sale of batteries and accumulators containing hazardous substances and to set rules and promote collection, treatment, recycling and disposal of waste batteries and accumulators. This directive applies to spent batteries collected together with WEEE and requires their removal and separate collection. Once removed from WEEE, spent batteries are governed by the Battery Directive. Harmonic uses lithium batteries in its products and our responsibility under the Battery Directive is taken care of under our WEEE Take-Back program.

For more information, please visit Batteries and Accumulators directive page at official EU website.

http://ec.europa.eu/environment/waste/batteries/

Harmonic is committed to manufacturing environmentally safe products for the community, and will make reasonable efforts and required adjustments to its practices, if necessary, to comply with various environmental directives and industry initiatives on the elimination of hazardous substances, labeling, marking, certification and registration as required in markets where we sell our products.

Download Harmonic’s Environmental Compliance Statement at the following location:


WEEE Take-Back Request Program

In order to assist EU member states to preserve, protect and improve the quality of the environment, protect human health and utilize natural resources prudently and rationally, Harmonic strives to recycle in compliance with the WEEE Directive any of its products that cannot be re-used.

Harmonic’s customers should:

- Not discard equipment in household or office garbage
- Arrange proper recycling of unneeded equipment. For the take-back of Harmonic equipment, customers must:
  - Collect the information required to complete Harmonic’s WEEE Take-Back Request form
- Complete and submit the online WEEE Take-Back Request form. Please note that forms must be fully completed in order to prevent process delays
- Receive instant online confirmation indicating the reference number
- Receive the End of Life (EOL) asset return authorization number and instruction for EOL asset return
- Not ship EOL product to Harmonic without a Harmonic-provided EOL asset return authorization number

The crossed-out wheeled bin symbol on a Harmonic-branded commercial product indicates that the product should not be disposed of along with municipal waste, but invites our customers to return the product to us under Harmonic’s WEEE Take-Back program for product disposal.

Harmonic will pay for the cost of shipping and will provide a Certificate of Recycling or a Certificate of Destruction upon request. For more information on collection, reuse and recycling or to initiate the WEEE take-back process, please complete the form at http://www.harmonicinc.com/webform/weee-takeback-request or contact Harmonic Technical Assistance Center (TAC) or email RMA team at rma.emea@harmonicinc.com.

**Compliance with additional country specific environmental, safety, and EMC standards**

In addition to above listed standards and compliance regulations, Harmonic products may also be compliant with other country specific environmental, safety and EMC requirements. Please contact Harmonic Compliance Team at regulatory.compliance@harmonicinc.com or your local sales representative for more information about compliance with particular country or standard.
The following topics describe the Help tab items for accessing information about DMS and Harmonic:

- Displaying Help topics
- Visiting Harmonic’s website
- DMS license
- Displaying the DMS version number

Displaying Help topics

Help Topics displays the guide which you are currently viewing in Web help format. It contains step-by-step instructions on how to use DMS.

To display the Web help:

- In the Help tab, click Help Topics in the Help group.

Visiting Harmonic's website

You can visit Harmonic’s web site with the DMS link.

To visit Harmonic’s web site:

- In the Help tab, click Harmonic website in the Harmonic group.

DMS license

You can display a summary of the license information.

To display the license information:

- In the Help tab, click DMS License in the Harmonic group.

Displaying the DMS version number

You can verify the installed version number with the following procedure.

To display the DMS version number:

- In the Help tab, click About DMS in the Harmonic group.