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This guide may use some special symbols and fonts to call your attention to important information. The following symbols appear throughout this guide:

- **DANGER:** The Danger symbol calls your attention to information that, if ignored, can cause physical harm to you.

- **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><code>&lt;Ctrl&gt;, &lt;Ctrl&gt; + &lt;Shift&gt;</code></td>
<td>A key or key sequence to press.</td>
</tr>
<tr>
<td><strong>Links</strong></td>
<td>The <em>italics in blue</em> text to indicate Cross-references, and hyperlinked cross-references in online documents.</td>
</tr>
<tr>
<td><strong>Bold</strong></td>
<td>Indicates a button to click, or a menu item to select.</td>
</tr>
<tr>
<td><strong>ScreenOutput</strong></td>
<td>The text that is displayed on a computer screen.</td>
</tr>
<tr>
<td><strong>Emphasis</strong></td>
<td>The <em>italics</em> text used for emphasis and document references.</td>
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</table>

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Introduction

Congratulations on choosing a Spectrum Integrated Channel Playout Platform. Spectrum X and ChannelPort ensure the cost-effective deployment of new SD, HD, and UHD television channels by integrating branding and master control switching with clip playback in a device that is fully compatible with all Spectrum components. Spectrum X and ChannelPort fit seamlessly into existing production and playout infrastructures, reducing complexity and cutting the time it takes to launch new services. Rich multilayer graphics and dynamic text can be layered over programming, and support for a broad range of automation systems, as well as Emergency Alert System (EAS) support, offers you the freedom to employ the workflow of your choice.

This document provides the following information:

- Introduction (this section) provides the following topics:
  - Spectrum System Documentation Suite
  - Technical Support
- Chapter 1, Installation and Configuration Overview provides instructions for installing and configuring a Spectrum X or ChannelPort.
- Chapter 2, Installing PreviewTool, FXTool, and Help provides instructions for installing PreviewTool and FXTool applications.
- Chapter 3, Using FXTool provides instructions for using the template preview tool, FXTool.
- Chapter 4, Using PreviewTool provides instructions for using the template sequencer tool, PreviewTool.

For information on installing and using the Template Authoring package, and for instructions and guidelines on template authoring, please refer to the Spectrum X and ChannelPort Template Authoring Guide.

Spectrum System Documentation Suite

The table below describes the documents which comprise the Spectrum System Documentation Suite.

<table>
<thead>
<tr>
<th>This document...</th>
<th>Provides this information...</th>
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<tbody>
<tr>
<td>Spectrum System Installation Guide</td>
<td>System installation</td>
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<tr>
<td></td>
<td>Software installation and upgrade details</td>
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<td></td>
<td>Quick start steps</td>
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<tr>
<td>Spectrum Tools User Guide</td>
<td>Using FXTool and PreviewTool</td>
</tr>
</tbody>
</table>
Software updates are available from the Harmonic website. Contact Harmonic Technical Support for login information.

The full download consists of the following:

- **Spectrum-v8.3.0.0-Software.zip**: This includes system software.
- **Spectrum-v8.3.0.0-Documentation.exe**: This includes product documentation.
- **HarmonicTemplatesAndTools-v8.3.0.0-SWandDoc.exe**: This includes the template authoring package, tools, and documentation, as well Polaris Play: Playlist Control tools and documentation.

Acrobat® Reader® is needed to view the product documentation. Download this for free from: http://www.adobe.com.

**Locating the Latest Documentation on the Harmonic Website**


**Technical Support**

For information on contacting Harmonic Technical Support, refer to *Appendix A, Contacting the Technical Assistance Center*.

**Useful Information when Contacting Technical Support**

In order to assist Harmonic Technical Support, review the following information:

- What version of firmware is installed on your system?
  
  From the SystemManager **Home** tab, click the **Upgrade Firmware** icon in the left-hand column to display the **Upgrade Firmware** page. The firmware version for each device is shown in the **Current Firmware Version** column.

- What version of SystemManager software is installed?
From SystemManager, click the Help tab. The version is shown in the Server Software section of the page.

- **What Windows operating system is running on the SystemManager client PC?**
  a. From Windows, click the Start button, and then click Run.
  b. In the Open field, type: winver, and then press Enter to open the About Windows dialog box, which shows the version number.

- **How much memory is installed on the SystemManager platform?**
  In general, you can find the amount memory in the System Properties. For example, in Windows 7:
  a. Click the Start button.
  b. Right-click Computer.
  c. Select Properties.
  
  Look in the System section, next to Installed memory (RAM), to find the amount of RAM your computer has.

- **Please provide the manager.oda file from the SystemManager platform or client PC**
  Harmonic Technical Support may request that you email the manager.oda file, which contains configuration information for your system. This file is located on the SystemManager platform at D:\Omneon\Manager\omdb, or if you are using a client PC with a single C: partition, it will be in the same directory on the C: drive.

- **What is the model and serial number of the hardware involved?**
  Log in to SystemManager to find the following information.
  - For Spectrum and MediaDeck devices: from the Home tab, click the Upgrade Firmware icon in the left-hand column to display the Upgrade Firmware page. Both MediaDirectors and MediaDecks are listed in the MediaDirectors section. Find the Model Numbers and Serial Numbers listed in their respective columns.
  
  Scroll down to the MediaPorts section to view the Model Numbers and Serial Numbers for MediaPorts and MediaDeck Modules.
  - For Harmonic MediaGrid Devices: Click the Servers & Switches icon in the left-hand column. From the Servers and Switches page, in the Name column, click the link for the Harmonic MediaGrid device to open the Properties page for that device.
  - For ProXchange devices: Click the ProXchange Servers icon in the left-hand column. From the Servers page, in the Name column, click the link for the ProXchange device to open the Properties page for that device.
  - For ProBrowse devices: Click the ProBrowse Servers icon in the left-hand column. From the Servers page, in the Name column, click the link for the ProBrowse device to open the Properties page for that device.
  - For MAS devices: Click the MAS Servers icon in the left-hand column. From the Servers page, in the Name column, click the link for the MAS device to open the Properties page for that device.

**For Spectrum Systems**

- **What is the name of the Player that is being used?**
  From SystemManager, click the Player Configuration link in the left-hand column, and then click the name of the MediaDirector or MediaDeck. The Player List page for that device appears. The names and status of all players are listed.
- What file format and bit rate is the Player configured for? (for example, MPEG, DV, or IMX?)
  a. From SystemManager, click the **Player Configuration** link in the left-hand column, and then click the name of the MediaDirector or MediaDeck. The **Player List** page for that device appears.
  b. From the player list, click the **Properties** link to view all the details for a player.

- **If the problem is related to Ingest or Playout of a clip, what is the Clip ID involved?**

  The clip name or clip ID should be indicated by whatever software application you are using to play or record video. For Omneon ClipTool, clip names are displayed in the clip management area of the ClipTool main window.

- What brand of Automation, if any, is being used for control?
- Is the Automation using VDCP or API for communication control?
Chapter 1
Installation and Configuration Overview

Spectrum X and ChannelPort Installation

For information on installing a Spectrum X as part of a Spectrum System, refer to the Spectrum System Installation Guide.

The ChannelPort module can be installed in a MediaDeck 7000 or a MediaPort 7000. When the ChannelPort module is installed in a MediaDeck 7000 or a MediaPort 7000, it can be connected to an automation system and an Emergency Alert system (EAS). For information on installing a ChannelPort module in a MediaDeck 7000, refer to the MediaDeck 7000 User Guide. For information on installing a ChannelPort module in a MediaPort 7000 as part of a Spectrum System, refer to the Spectrum System Installation Guide.

Spectrum X and ChannelPort System Configuration Overview

Harmonic recommends that you configure your system in the following order:

1. **System**: If you wish to enable Enhanced Channel mode on your Spectrum X or ChannelPort, do so before configuring your channels. Otherwise, the device will operate in Standard Channel mode. See “Enabling Enhanced Channel Mode” in the Harmonic SystemManager User Guide.

2. **Channel**: Configure the basic parameters for your Spectrum X or ChannelPort channel, including master control switcher settings, audio profiles, independent branding, or serial port settings required for automation. See “Configuring a Spectrum X or ChannelPort Channel” and “Configuring an Audio Profile” in the Harmonic SystemManager User Guide for more information.

3. **Player**: See “Player Configuration” in the Harmonic SystemManager User Guide for help with configuring a player. Note that if you wish to use Playlist Control for player control, configure your player to use “Harmonic Playout” for control.

4. **Graphics**: Make sure your graphic templates follow Harmonic guidelines so they can be played on the Spectrum X or ChannelPort. See the Spectrum X and ChannelPort Template Authoring Guide. Configure FXTool if you plan to use it. See the Spectrum X and ChannelPort Tools User Guide (this guide).

5. **Playlist Control**: Configure any features and tools that you wish to use. For help with configuring the Playout Channel, Traffic and Billing, or Polaris Play: MediaFetch, see “Video Server Services Configuration” in the Harmonic SystemManager User Guide. For information on creating and monitoring playlists with Polaris Play: Scheduler and Polaris Play: Playlist, see the Polaris Play: Playlist User Guide. For information on configuring PreviewTool, refer to the Spectrum X and ChannelPort Tools User Guide (this guide).

6. **GPIO**: If using GPIO, configure the Spectrum X or ChannelPort GPIO triggers and then map them to channel events or Playout Channel events. See “Configuring GPIO Triggers” in the Harmonic SystemManager User Guide.

7. **EAS**: If using an EAS, make sure the Spectrum X or ChannelPort is connected to the EAS as described in the installation instructions, and then configure the EAS settings. See “Configuring a Spectrum X or ChannelPort Channel” in the Harmonic SystemManager User Guide.
Determining a Port Number

If you are using a Spectrum X or ChannelPort to preview graphics with FXTool or using it with an automation system, you will need to identify the port number for the channel you wish to use. Note that FXTool and automation systems use different protocols—FXTool uses “Network Automation” and most automation systems use “Serial Automation.” Refer to Table 1–1 to identify the necessary port for use with FXTool or automation.

If you are using a Spectrum X, or a ChannelPort in a system with a MediaCenter or MediaDirector, you can find the port number in SystemManager: Navigate to the Properties page for your video server, and then scroll down to the Private Ethernet Interfaces section to view the “com” label for the associated Ethernet port. For details, refer to “Private Ethernet Interfaces” in the SystemManager User Guide. If you are using a Spectrum MediaDeck 7000, the module on the left (when looking from the back) is com 0, and the module on the right is com 1. For a Spectrum X in internal storage mode, the left-hand SDI I/O card is com 0 and the right-hand SDI I/O card is com 1. If only one SDI I/O card is installed, that card is always com 0.

Each ChannelPort module supports two channels (A and B). Once you know the Ethernet port that your ChannelPort module is connected to, and the channel that you will be using, refer to Table 1–1.

Table 1–1: ChannelPort and Spectrum X Port Numbers

<table>
<thead>
<tr>
<th>Module IP</th>
<th>Channel</th>
<th>Port Number for FXTool</th>
<th>Port Number for Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>com 0</td>
<td>A</td>
<td>9100</td>
<td>9000</td>
</tr>
<tr>
<td>com 0</td>
<td>B</td>
<td>9101</td>
<td>9001</td>
</tr>
<tr>
<td>com 1</td>
<td>A</td>
<td>9102</td>
<td>9002</td>
</tr>
<tr>
<td>com 1</td>
<td>B</td>
<td>9103</td>
<td>9003</td>
</tr>
<tr>
<td>com 2</td>
<td>A</td>
<td>9104</td>
<td>9004</td>
</tr>
<tr>
<td>com 2</td>
<td>B</td>
<td>9105</td>
<td>9005</td>
</tr>
<tr>
<td>com 3</td>
<td>A</td>
<td>9106</td>
<td>9006</td>
</tr>
<tr>
<td>com 3</td>
<td>B</td>
<td>9107</td>
<td>9007</td>
</tr>
<tr>
<td>com 4</td>
<td>A</td>
<td>9108</td>
<td>9008</td>
</tr>
<tr>
<td>com 4</td>
<td>B</td>
<td>9109</td>
<td>9009</td>
</tr>
<tr>
<td>com 5</td>
<td>A</td>
<td>9110</td>
<td>9010</td>
</tr>
<tr>
<td>com 5</td>
<td>B</td>
<td>9111</td>
<td>9011</td>
</tr>
<tr>
<td>com 6</td>
<td>A</td>
<td>9112</td>
<td>9012</td>
</tr>
<tr>
<td>com 6</td>
<td>B</td>
<td>9113</td>
<td>9013</td>
</tr>
<tr>
<td>com 7</td>
<td>A</td>
<td>9114</td>
<td>9014</td>
</tr>
<tr>
<td>com 7</td>
<td>B</td>
<td>9115</td>
<td>9015</td>
</tr>
<tr>
<td>com 8</td>
<td>A</td>
<td>9116</td>
<td>9016</td>
</tr>
<tr>
<td>com 8</td>
<td>B</td>
<td>9117</td>
<td>9017</td>
</tr>
</tbody>
</table>
Verifying and Creating the Graphics Directory on the Video Server

The graphics directory (gfx.dir) is where you store the graphic templates you have authored. The Spectrum X and ChannelPort are configured to look for a folder called “gfx.dir” in your video server file system when it retrieves graphic templates for preview or play.

Verifying the Graphics Directory on the Video Server

With software release 7.1.0.0 and later, gfx.dir is created automatically in the video server file system when a Spectrum X or ChannelPort is installed in a Spectrum system.

If you want your graphics directory to have a name other than “gfx.dir,” refer to Renaming the Graphics Directory Folder (Optional) for instructions.

Creating the Graphics Directory on the Video Server

For software release 7.0.0.0, gfx.dir is not created automatically in the video server file system. If it doesn’t exist, you must manually create gfx.dir in your file system.

1. From SystemManager, click the Disk Utilities icon in the left-hand column to open the Disk Utilities page.
2. From the Disk Utilities page, click the hyperlink for your video server to open the corresponding Disk Utilities page.
3. In the Logical View area, click Explore Filesystemfile://... as shown in Figure 1–1.

<table>
<thead>
<tr>
<th>Module IP</th>
<th>Channel</th>
<th>Port Number for FXTool</th>
<th>Port Number for Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>com 9</td>
<td>A</td>
<td>9118</td>
<td>9018</td>
</tr>
<tr>
<td>com 9</td>
<td>B</td>
<td>9119</td>
<td>9019</td>
</tr>
<tr>
<td>com 10</td>
<td>A</td>
<td>9120</td>
<td>9020</td>
</tr>
<tr>
<td>com 10</td>
<td>B</td>
<td>9121</td>
<td>9021</td>
</tr>
<tr>
<td>com 11</td>
<td>A</td>
<td>9122</td>
<td>9022</td>
</tr>
<tr>
<td>com 11</td>
<td>B</td>
<td>9123</td>
<td>9023</td>
</tr>
<tr>
<td>com 12</td>
<td>A</td>
<td>9124</td>
<td>9024</td>
</tr>
<tr>
<td>com 12</td>
<td>B</td>
<td>9125</td>
<td>9025</td>
</tr>
<tr>
<td>com 13</td>
<td>A</td>
<td>9126</td>
<td>9026</td>
</tr>
<tr>
<td>com 13</td>
<td>B</td>
<td>9127</td>
<td>9027</td>
</tr>
<tr>
<td>com 14</td>
<td>A</td>
<td>9128</td>
<td>9028</td>
</tr>
<tr>
<td>com 14</td>
<td>B</td>
<td>9129</td>
<td>9029</td>
</tr>
<tr>
<td>com 15</td>
<td>A</td>
<td>9130</td>
<td>9030</td>
</tr>
<tr>
<td>com 15</td>
<td>B</td>
<td>9131</td>
<td>9031</td>
</tr>
</tbody>
</table>
4. When prompted, enter the user name and password for your video server file system. The root directory of the video server file system will appear in a new Explorer window.

**NOTE:** If the root directory does not appear or a message appears indicating the browser is unable to connect, you may need to add the IP address of your SystemManager to the list of trusted sites in Internet Explorer.

- From Internet Explorer, click **Tools > Internet Options > Security > Trusted Sites > Sites** to open the **Trusted sites** dialog box.
- In the **Add this website to the zone** field, enter your SystemManager IP address (preceded by "http://"), and then click **Add**.
- Click **Close** and then click **OK**. Retry the Explore Filesystem link.

5. Using Windows Explorer, create a new folder named **gfx.dir** on the root directory of the file system.
Renaming the Graphics Directory Folder (Optional)

If you wish to name the graphics directory something other than gfx.dir, you must modify the properties page for each Playout Channel to direct it to the new location for your graphic templates.

**IMPORTANT:** SystemManager does not verify if the graphics directory indicated on the Channel Properties page exists on the video server file system. Therefore, it will not provide any error messages if the directory does not exist.

To configure the new graphics directory folder name in SystemManager:

1. Click the **Configuration** tab to display the **Configuration** page and **System Diagram**.
2. Click the link or icon for your Spectrum X or ChannelPort to open the **Properties** page.
3. Click the **Configure Channel A** button to open the properties page for that channel.
4. In the **Effect Configuration** area, locate the **Effects Folder** field, and type the new name of the graphics directory.
5. Click **Apply**, and then click **Done**.
6. Return to the **Properties** page and click **Configure Channel B**.
7. Repeat **Step 3** through **Step 5**.

---

**Figure 1–2: Creating gfx.dir**

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Chapter 2
Installing PreviewTool, FXTool, and Help

This chapter includes installation instructions for PreviewTool and FXTool, tools for previewing graphics on the Spectrum X or ChannelPort. The following topics are covered:

- System Requirements
- Installing PreviewTool, FXTool, and Help

System Requirements

Before installing PreviewTool or FXTool, your computer must conform to the following minimum requirements:

Windows

- 2.33GHz or faster x86-compatible processor or Intel® Atom™ 1.6GHz or faster processor for netbooks
- Windows XP Home, Professional, or Tablet PC Edition with Service Pack 3; Windows Server 2003; Windows Server 2008; Windows Vista Home Premium, Business, Ultimate, or Enterprise (including 64-bit editions) with Service Pack 2; or Windows 7
- 512MB of RAM (1GB recommended)

Macintosh Operating System

- Intel Core™ Duo or faster processor
- Macintosh OS X v10.6 or v10.7
- 512MB of RAM (1GB recommended)

System Compatibility

PreviewTool and FXTool are compatible with Spectrum System software version 7.0 and greater.

Installing PreviewTool, FXTool, and Help

The following installation instructions are for Windows operating systems. The installation process for Macintosh OS X may vary slightly.

Installing Adobe Air

Adobe® Air® is required to install and run PreviewTool and FXTool. If you do not already have Adobe Air installed, you can download the latest version for free at [http://get.adobe.com/air/](http://get.adobe.com/air/).

Installing PreviewTool

To install PreviewTool:

1. Open the Flexapps folder located in the HarmonicTemplatesAndTools-v8.3.0.0-SWandDoc.exe.
2. Locate the PreviewTool installer icon, as shown in Figure 2–1.

![PreviewTool Installer Icon](image)

**Figure 2–1: PreviewTool Installer Icon**

3. Double-click the PreviewTool installer icon to open the PreviewTool installation dialog, as shown in Figure 2–2.

![PreviewTool Installation Dialog](image)

**Figure 2–2: PreviewTool Installation Dialog**

4. Choose an installation location, and click **Continue** to complete the installation of PreviewTool.

**Installing PreviewTool Help**

1. Open the Flexapps folder located in the HarmonicTemplatesAndTools-v8.3.0.0-SWandDoc.exe.

2. Locate the PreviewTool Help installer icon, as shown in Figure 2–3.

![PreviewTool Help Installer Icon](image)

**Figure 2–3: PreviewTool Help Installer Icon**

3. Double-click the PreviewTool Help installer icon to open the PreviewTool Help installation dialog, as shown in Figure 2–4.
4. Choose an installation location, and click **Continue** to complete the installation of PreviewTool Help.

Refer to *Chapter 4, Using PreviewTool* to begin using PreviewTool, or open PreviewTool and click the **View Help** icon to launch the PreviewTool Help app.

**Installing FXTool**

1. Open the **Flexapps** folder located in the *HarmonicTemplatesAndTools-v8.3.0.0-SWandDoc.exe*.
2. Locate the FXTool installer icon, as shown in *Figure 2–5*.

   ![FXTool Installer Icon](image)

3. Double-click the FXTool installer icon to open the FXTool installation dialog, as shown in *Figure 2–6*. 
4. Choose an installation location, and click **Continue** to complete the installation of FXTool.

**Installing FXTool Help**

1. Open the **Flexapps** folder located in the **HarmonicTemplatesAndTools-v8.3.0.0-SWandDoc.exe**.
2. Locate the FXTool Help installer icon, as shown in **Figure 2–7**.

![FXTool Help Installer Icon](image)

**Figure 2–7: FXTool Help Installer Icon**

3. Double-click the FXTool Help installer icon to open the FXTool installation dialog, as shown in **Figure 2–8**.

![FXTool Help Installation Dialog](image)

**Figure 2–8: FXTool Help Installation Dialog**
4. Choose an installation location, and click **Continue** to complete the installation of FXTool Help.

Refer to *Chapter 3, Using FXTool* to begin using FXTool, or open FXTool and click **Help > FXTool Help** to launch the FXTool Help system.
Chapter 3
Using FXTool

FXTool can be used to preview or control graphic templates in real time that have been loaded on your Spectrum X or ChannelPort. In addition to previewing and controlling graphics, it can also be used to debug Oxtel connections between your Spectrum playout device and your automation system.

Follow the steps in Configuring FXTool to configure the necessary settings before using FXTool.

Choose from the following topics:
- FXTool User Interface
- Configuring FXTool
- Previewing Templates
- Editing Template Text Fields
- Using Session and Permanent Locks
- Using Oxtel Debug
- About the FXTool Help App

FXTool User Interface

The following topics provide an overview of the FXTool user interface and include descriptions of the following:
- Templates Pane
- Graphics Controls Pane
- Mixer Controls and Settings Pane
Figure 3–1: FXTool User Interface

The FXTool title bar displays your Spectrum host address, port number, channel mode, and the number of graphic layers that are licensed.

**NOTE:** The Graphics Controls pane allows you to access only those layers that are licensed. In Figure 3–1, for example, layers 5-8 are not accessible because this Spectrum device has only 4 graphic layers licensed.

Refer to [Configuring FXTool](#) for instructions on configuring the FXTool connection.

**Templates Pane**

The Templates pane displays the contents of your graphics directory (gfx.dir by default). Any templates stored in your graphics directory will be available in FXTool when you start it.

If you transfer any templates to your graphics directory while FXTool is running, click **Refresh** (located next to the Mixer Controls pane) to update the list of available templates.
Use Search to search for a specific template. Search options can be defined by clicking Name contains above the search box.

**Graphics Controls Pane**

The Graphics Controls pane is used to load, unload, and control graphics on your Spectrum X or ChannelPort.

The Graphics Controls pane contains the following columns:
- **Staged Template**: Shows template(s) ready to be loaded. Use this column to sort your templates before they are loaded.

- **Loaded Template**: Shows template(s) currently loaded.

- **Visibility**: Shows the fade status of the layer. A layer can be “Visible,” “Hidden,” or “Partial.”

- **Animation**: Shows the animation state of the template. A template can be “Stopped” or “Running.”

- **Locks**: Shows what layers have sessions locks or permanent locks applied. Refer to *Using Session and Permanent Locks* for more information about FXTool locks.

From the **Graphics Controls** pane, you can perform the following actions:

- **Load**: Click to load templates. Refer to *Loading and Unloading Templates* for complete instructions.

- **Unload**: Click to unload templates. Refer to *Loading and Unloading Templates* for complete instructions.

- **Fade In** and **Fade Out**: Click to fade layers in and out.

- **Fade In Rate** and **Fade Out Rate**: Click these drop-down menus to control the speed of a fade on a layer. For instructions on configuring the fade rates, refer to *Configuring FXTool*.

- **Start Animation**: Click to start the animation of a template that uses animation. You can use **Start Animation** to restart a template if you have paused it.

- **Stop Animation**: Click to pause the animation of a template.

- **Stop Animation with Outro**: Click to play the animated outro of a template.

- **Edit Text Field**: Click to edit the dynamic text fields of a template that has been loaded. Refer to *Editing Template Text Fields* for more instructions.

**Mixer Controls and Settings Pane**

The **Mixer Controls and Settings** pane contains selections for the video source and provides access to FXTool Settings and Locks.

![Figure 3–4: Switcher Controls and Settings Pane](image)

Refer to *Using the Mixer Controls* for instructions on using the **Mixer Controls**.

Refer to *Configuring the Mixer* for instructions on configuring the **Mixer Controls**.

Refer to *Configuring External I/O Sources* for instructions on mapping external inputs and outputs to Spectrum X sources.

For information on configuring the **Color Generator**, refer to *Configuring the Color Generator*.

Refer to *Using Session and Permanent Locks* for instructions on using FXTool locks.
Using the Mixer Controls

The Mixer Controls allow you to select between the available input sources on your Spectrum device. For example, you can set the video source to a player, to an external feed, or to a color generator.

The input sources available for the Mixer Controls depend on the channel mode for which your Spectrum device is configured. If using a ChannelPort, the available input sources also depend on the model number. Refer to the following tables for available settings.

Table 3–1: ChannelPort 8100 module input sources

<table>
<thead>
<tr>
<th>Standard Channel</th>
<th>Enhanced Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Player</td>
<td>● Player A, B</td>
</tr>
<tr>
<td>● External In</td>
<td>● External In 1 - 2</td>
</tr>
<tr>
<td>● Color Generator</td>
<td>● Color Generator</td>
</tr>
</tbody>
</table>

Table 3–2: ChannelPort 8200 module input sources

<table>
<thead>
<tr>
<th>Standard Channel</th>
<th>Enhanced Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Player</td>
<td>● Player A, B</td>
</tr>
<tr>
<td>● External In 1 - 2</td>
<td>● External In 1 - 6</td>
</tr>
<tr>
<td>● Color Generator</td>
<td>● Color Generator</td>
</tr>
</tbody>
</table>

Table 3–3: Spectrum X input sources

<table>
<thead>
<tr>
<th>Standard Channel</th>
<th>Enhanced Channel</th>
<th>UHD Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Player</td>
<td>● Player A, B</td>
<td>● Player</td>
</tr>
<tr>
<td>● External In 1 - 2</td>
<td>● External In 1 - 6</td>
<td></td>
</tr>
<tr>
<td>● Color Generator</td>
<td>● Color Generator</td>
<td>● External In 1, 2</td>
</tr>
</tbody>
</table>

Configuring FXTool

Before using FXTool, you need to configure the connection and fade rates. You can also configure the Color Generator. FXTool will use these configurations every time you open the program, unless you change the settings. You can change the settings at any time.

Choose from the following topics:

- Configuring the Connection
- Configuring the Fade Rates
- Configuring the Color Generator
- Configuring the Mixer
- Configuring External I/O Sources

Configuring the Connection

1. Click the Settings button.
2. Click the Connection tab.
3. In the Label field, type in a unique name for your connection.
4. In the **Spectrum Host Address** field, type in the host IP address of the connected Spectrum video server.

**TIP:** You can find the host IP address for the Spectrum video server by navigating to the Properties page for that device in SystemManager. For details, refer to “Viewing Spectrum Video Server Properties” in the *SystemManager User Guide*.

5. In the **Port** field, type in the port number for the channel you have assigned to FXTool.

The **Recent** area displays recently configured connections.

6. Click **OK**.

**NOTE:** Once the connection has been configured, the FXTool title bar will display the Spectrum Host address and the port number.

### Determining the Port Number

If you are using a ChannelPort or Spectrum X to preview/control graphics with FXTool or using it with an automation system, you will need to identify the port number for the channel you wish to use. Note that FXTool and automation systems use different protocols—FXTool uses “Network Automation” and most automation systems use “Serial Automation.” Refer to the following table to identify the necessary port for use with FXTool.

If you are using Spectrum X, or a ChannelPort in a system with a MediaCenter or MediaDirector, you can find the port number in SystemManager: Navigate to the **Properties** page for your video server, and then scroll down to the **Private Ethernet Interfaces** section to view the “com” label for the associated Ethernet port. For details, refer to “Private Ethernet Interfaces” in the *SystemManager User Guide*. If your ChannelPort module is connected to a Spectrum MediaDeck 7000, the module on the left (when looking from the back) is com 0, and the module on the right is com 1.

Each Spectrum X or ChannelPort module supports two channels (A and B). Once you know the Ethernet port that your module is connected to, and the channel that you will be using, refer to the following table.

<table>
<thead>
<tr>
<th>Module IP</th>
<th>Channel</th>
<th>Port Number for FXTool</th>
</tr>
</thead>
<tbody>
<tr>
<td>com 0</td>
<td>A</td>
<td>9100</td>
</tr>
<tr>
<td>com 0</td>
<td>B</td>
<td>9101</td>
</tr>
<tr>
<td>com 1</td>
<td>A</td>
<td>9102</td>
</tr>
<tr>
<td>com 1</td>
<td>B</td>
<td>9103</td>
</tr>
<tr>
<td>com 2</td>
<td>A</td>
<td>9104</td>
</tr>
<tr>
<td>com 2</td>
<td>B</td>
<td>9105</td>
</tr>
<tr>
<td>com 3</td>
<td>A</td>
<td>9106</td>
</tr>
<tr>
<td>com 3</td>
<td>B</td>
<td>9107</td>
</tr>
<tr>
<td>com 4</td>
<td>A</td>
<td>9108</td>
</tr>
<tr>
<td>com 4</td>
<td>B</td>
<td>9109</td>
</tr>
<tr>
<td>com 5</td>
<td>A</td>
<td>9110</td>
</tr>
</tbody>
</table>
Chapter 3 Using FXTool

Configuring FXTool

Configuring the Fade Rates

1. Click **Settings**.
2. Click the **Graphics** tab and use the arrows to set the duration of the **Slow**, **Medium**, and **Fast** fades.
3. Click **OK**.

After you have configured the duration of the Fade Rates, you can control the fade rate speed on the **Graphics Controls** pane.

4. On the **Graphics Controls** pane, click **Fade In Rate** or **Fade Out Rate**.
5. Select **Cut**, **Slow**, **Medium**, or **Fast**.

**NOTE:** **Cut** will remove the template from the display without fading it.

<table>
<thead>
<tr>
<th>Module IP</th>
<th>Channel</th>
<th>Port Number for FXTool</th>
</tr>
</thead>
<tbody>
<tr>
<td>com 5</td>
<td>B</td>
<td>9111</td>
</tr>
<tr>
<td>com 6</td>
<td>A</td>
<td>9112</td>
</tr>
<tr>
<td>com 6</td>
<td>B</td>
<td>9113</td>
</tr>
<tr>
<td>com 7</td>
<td>A</td>
<td>9114</td>
</tr>
<tr>
<td>com 7</td>
<td>B</td>
<td>9115</td>
</tr>
<tr>
<td>com 8</td>
<td>A</td>
<td>9116</td>
</tr>
<tr>
<td>com 8</td>
<td>B</td>
<td>9117</td>
</tr>
<tr>
<td>com 9</td>
<td>A</td>
<td>9118</td>
</tr>
<tr>
<td>com 9</td>
<td>B</td>
<td>9119</td>
</tr>
<tr>
<td>com 10</td>
<td>A</td>
<td>9120</td>
</tr>
<tr>
<td>com 10</td>
<td>B</td>
<td>9121</td>
</tr>
<tr>
<td>com 11</td>
<td>A</td>
<td>9122</td>
</tr>
<tr>
<td>com 11</td>
<td>B</td>
<td>9123</td>
</tr>
<tr>
<td>com 12</td>
<td>A</td>
<td>9124</td>
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<tr>
<td>com 12</td>
<td>B</td>
<td>9125</td>
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<td>com 13</td>
<td>A</td>
<td>9126</td>
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<tr>
<td>com 13</td>
<td>B</td>
<td>9127</td>
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<td>com 14</td>
<td>A</td>
<td>9128</td>
</tr>
<tr>
<td>com 14</td>
<td>B</td>
<td>9129</td>
</tr>
<tr>
<td>com 15</td>
<td>A</td>
<td>9130</td>
</tr>
<tr>
<td>com 15</td>
<td>B</td>
<td>9131</td>
</tr>
</tbody>
</table>
Configuring the Color Generator

1. Click Settings.
2. Click the Color Generator tab.
3. Click the box to select a color from the color menu.
4. Click OK.

Configuring the Mixer

When you configure the Mixer, you configure the types and speeds of transitions that occur when you use the Mixer Controls to switch between external feeds, clips, and the Color Generator.

1. Click Settings.
2. Click the Mixer tab.
3. Click the Video tab.
4. Click the Transition drop-down menu and select one of the following:
   a. Cut: Cuts the template from the display without fading it.
   b. X-fade: Enables a cross-fade of the primary video when using the Mixer Controls.
   c. V-fade: Enables the primary video to fade down completely before the new video fades up when using the Mixer Controls.
5. Use the arrows to set the Fade Down and Fade Up speeds of the X-fade or V-fade.
6. Click the Audio tab.
7. If you want the audio to follow the same transition as the video, select the Follows Video check box.
8. If you do not want the audio to follow the same transition as the video, click the Transition drop-down menu and select one of the following:
   a. Cut: Cuts the audio without fading it.
   b. X-fade: Enables a cross-fade of the primary audio when using the Mixer Controls.
   c. V-fade: Enables the primary audio to fade down completely before the new audio fades up when using the Mixer Controls.
9. Use the arrows to set the Fade Down and Fade Up speeds of the X-fade or V-fade.
10. Use the arrows to set the Lag duration between audio and video transitions.
    - A negative number means the audio will cross the midpoint of its transition before the video crosses the midpoint of its transition, as shown in the following figure.
Figure 3–5: Negative Value Lag Transition

- A zero value means the audio and video will cross the midpoints of their transitions at the same time, as shown in the following figure.

Figure 3–6: Zero Value Lag Transition.

- A positive number means the video will cross the midpoint of its transition before the audio crosses the midpoint of its transition, as shown in the following figure.
11. Click OK.

**Configuring External I/O Sources**

If you are using a Spectrum X which has been enabled for IP input and output, you can configure FXTool to use IP sources for that channel.

When mapping a Spectrum X I/O to an IP source in FXTool, you may choose from preset inputs and outputs that have been configured in SystemManager, or you can dynamically configure the local interface, IP address, and port to be used. This may be helpful in a system with many channels.

Note that mapping a Spectrum X source to an IP input/output with FXTool starts the stream. Mapping that source back to SDI stops the stream.

**NOTE:** UHD Channel mode does not support IP input and output at this time.

1. In the External IO area, click **Configure**.
2. Optionally, click **Refresh** to update the list of preset IP inputs and outputs for the channel.
3. To use a preset IP input/output, for each Spectrum X source, select the desired IP source from the **Sources** drop-down menu, and then skip to **Step 5**.
4. To dynamically map the Spectrum X input to an IP input, do the following:
   a. For the desired Spectrum X **Input**, click the D to the right of the **Source** drop-down menu.
b. In the **Dynamic** configuration dialog, enter the following information:

- **Type**: The IP transport protocol to be used. Note that only 2022-6 is supported at this time.

- **Local Interface**: The IP address of the 10 Gb Ethernet interface to be used. You can find the IP address in the NIC Configuration section of the I/O Module Properties page in SystemManager.

- **IP Address**: The multicast IP address to be used for the 2022-6 input/output.

- **Port**: The UDP port number to be used for the 2022-6 input/output. The value should be greater than or equal to 2000.

c. Optionally, select the following flags:

- **Set Source**: If the Spectrum X source is not currently set to 2022–6 (0) – Dynamic, check this flag to switch to the dynamic source when you click Apply/OK.

- **Force**: Forces a restart of the IP source when you click Apply/OK. This may be useful if you are experiencing issues with the IP stream.

d. Repeat the steps above to dynamically map the Spectrum X **Output** to an IP output.

e. Click **OK** to save your settings and close the **Dynamic** configuration dialog.

---

**Figure 3–8: Dynamically Setting the IP Input/Output**

5. Click **OK** to close the **External IO** configuration dialog.

The IP stream will start immediately if the mixer is set to the respective Spectrum X source.

---

**Previewing Templates**

You can use FXTool to preview non-animated and animated templates, as well as templates that have three-point animations.

When you load a graphic template onto your Spectrum device, it is positioned on a layer above the main video source. **Layer 1** is the bottom-most layer, and **layer 8** is the top-most layer.

The following example shows four layers of templates, but you can preview up to eight layers of templates simultaneously using FXTool.

Choose from the following topics:

- *Loading and Unloading Templates*
Chapter 3 Using FXTool

Previewing Templates

- Previewing Non-Animated Templates
- Previewing Animated Templates
- Previewing Templates with Three-Point Animation

Figure 3–9: Templates Layered on Source Video

Loading and Unloading Templates

To load a template:
1. From the Templates pane, click and drag a template to the desired layer in the Staged Template column.

**NOTE:** Layer 1 is the bottom-most layer while layer 8 is the top-most layer.

2. Add any additional templates to the desired layers in the Staged Template column.
3. From the Staged Template column, select the template(s) you want to load.
4. Click Load.

**TIP:** You can use Ctrl + Click, Shift + Click, or right-click to choose multiple templates.

To unload a template:
1. From the Loaded Template column, select the template(s) you want to unload.

**NOTE:** You can use Ctrl + Click, Shift + Click, or right-click to choose multiple templates.

2. Click Unload.
3. To remove the template(s) from the Staged Template column, select the template(s) and click **Delete** on your keyboard, or right-click the selected template(s) and click **Clear selection**.
**Previewing Non–Animated Templates**

Non-animated templates, such as the sample Harmonic Regulatory Template, can be previewed using FXTool.

**NOTE:** If the Visibility status is not “Hidden” and the Animation status is not “None” on a layer (in other words, the layer is not faded down), the template will play as soon as it is loaded. To prevent this, ensure all layers are faded down.

1. Load the desired template(s). Refer to *Loading and Unloading Templates* for instructions.
2. To preview the template(s) on the output monitor, click **Fade In**.
   
   The **Visibility** status will change to “Visible,” and the **Animation** status will change to “Running.”
3. To end the preview, click **Fade Out** or **Unload**.
4. If you fade out the template, it must be unloaded and reloaded before it can be previewed again. It is not necessary to remove the template from the **Staged Template** column.

**Previewing Animated Templates**

Animated templates, such as the sample Harmonic Logo Loop Templates, can be previewed using FXTool.

**NOTE:** If the Visibility status is not “Hidden” and the Animation status is not “None” on a layer (in other words, the layer is not faded down), the template will play as soon as it is loaded. To prevent this, ensure all layers are faded down.

1. Load the desired template(s). Refer to *Loading and Unloading Templates* for instructions.
2. To preview the template(s) on the output monitor, click **Fade In**.
   
   The **Visibility** status will change to “Visible,” and the **Animation** status will change to “Running.”
3. To pause the animation, click **Stop Animation**. This will pause the template on the display.
   
   Click **Start Animation** to resume animation of the template.
4. To end the template preview, click **Fade Out**, **Unload**, or **Stop Animation with Outro** (which will finish the animation of the template before ending the preview).

**NOTE:** To replay an animated template that is authored to play only once, you must unload and then reload the template. It is not necessary to remove the template from the **Staged Template** column.

**Previewing Templates with Three–Point Animation**

A template with three-point animation has an intro section, a loop section, and an outro section. When you load the template, the intro section will play, and then the template will remain on the loop section until you end the template preview.

Three-point animation templates, such as the sample Harmonic Three-Point Animation Template can be previewed using FXTool.

**NOTE:** If the Visibility status is not “Hidden” and the Animation status is not “None” on a layer (in other words, the layer is not faded down), the template will play as soon as it is loaded. To prevent this, ensure all layers are faded down.

1. Load the desired template(s). Refer to *Loading and Unloading Templates* for instructions.
2. To preview the template(s) on the output monitor, click **Fade In**. The **Visibility** status will change to “Visible,” and the **Animation** status will change to “Running.”

3. To pause the animation, click **Stop Animation**. This will pause the template on the display. Click **Start Animation** to resume the animation of the template.

4. To remove the three-point animation template from the output display, choose one of the following:
   - Click **Fade Out**. This will fade the template from the display.
   - Click **Unload**. This will remove the template from the display without fading it.
   - Click **Stop Animation with Outro**. The template’s loop will finish, and then the template’s outro will play.

**Editing Template Text Fields**

Some templates contain text fields that you can edit in FXTool, such as the Harmonic Dynamic Text Field Templates.

You must load the template onto a layer before editing a text field. The text field can be edited while the template is faded up or faded down.

1. Load the desired template(s). Refer to [Loading and Unloading Templates](#) for instructions.
2. To preview the template(s) on the output monitor, click **Fade In**. The **Visibility** status will change to “Visible,” and the **Animation** status will change to “Running.”

3. To edit the text fields, click **Edit Text Fields** for that layer. The **Edit Text Fields** dialog box will appear.

4. In the corresponding **Contents** field, type in the new text you want to see displayed in the template.

![Figure 3–10: Edit Text Fields Dialog Box](image)

If you are editing the text field of an RSS News Ticker, type in the URL of the RSS feed.

**NOTE:** The current contents of the text field will not be displayed in the Edit Text Fields dialog box.

5. Ensure the check box is selected for each text field you edit.

6. Click **Apply** to preview the template with the updated text.

**Using Session and Permanent Locks**

Choose from the following topics:
About Session and Permanent Locks

Locks can be used to prevent users/clients from making changes to graphic layers or to the mixer on your Spectrum X or ChannelPort. There are two types of locks:

- **Session Locks**: Enable or disable at any time to prevent users/clients from making changes to graphic layers or the mixer. These locks are released when a connection is lost.

  The **Locks** dialog box in FXTool shows two columns for Session Locks:
  - **Session Locks**: Shows Session Locks that have been set from within FXTool. For example, using FXTool to apply Session Locks to layers 3, 4, and 6 will lock out an automation system and enable manual control of those layers only from FXTool.
    
    Refer to [Setting Session Locks in FXTool](#) for instructions on setting Session Locks with FXTool.
  - **All Session Locks**: Shows all Sessions Locks that have been applied from FXTool or some other client.

- **Permanent Locks**: Prevent users/clients from making changes to a specific layer. Once a Permanent Lock is enabled on a layer, a user/client cannot make changes to that layer until the Permanent Lock is removed. For example, use a Permanent Lock if you want a particular logo to appear on your video output at all times.

  When a Permanent Lock is set, that layer is grayed out and unavailable in FXTool.

  Permanent Locks are set using the **Auto Load** feature in SystemManager. Refer to “Configuring a Channel” in the Harmonic SystemManager User Guide.

### Setting Session Locks in FXTool

1. Click the **Locks** button.
2. From the **Locks** dialog box, select the check boxes for the layers on which you want to set Session Locks.

![Figure 3–11: Locks Dialog Box](#)
3. Click **Apply**.
4. Click **OK**.

After locks have been enabled, lock icons will appear in FXTool. Yellow lock icons indicate a Session Lock, originating from FXTool, is enabled on that layer. Gray lock icons indicate that a Session Lock from another client or a Permanent Lock is enabled on that layer.

The **Lock** button displays the number of Session Locks originating from FXTool.

![Figure 3–12: Locks Applied](image)

**Using Oxtel Debug**

FXTool Oxtel Debug can be used to test and troubleshoot serial connections between your Spectrum device and your automation system.

To access the Oxtel Debug interface, click **Help > Oxtel Debug**.

![Figure 3–13: Oxtel Debug Interface](image)
The Oxtel Debug interface contains the following panels:

- **Oxtel Output**: Contains check boxes to enable/disable Oxtel command output in the system monitor. The output shows the Oxtel commands received by your Spectrum X or ChannelPort and the responses it sent.

  When Oxtel Output is enabled, the Spectrum X or ChannelPort will record all Oxtel communication in the system monitor.

  There are two types of output modes:

  - **ASCII**: This filter shows Oxtel commands using basic punctuation symbols, numbers, and English alphabet characters. It is intended to be read by users.
    
    **Receive**:
    
    06/28 11:38:48 D T7A00129 fx0: oxtel:5 rx 943316.031856
    R071080160-cc-.swf:
    
    **Transmit**:
    
    06/28 11:38:48 D T7A00129 fx0: oxtel:3 tx 943316.262418
    Y971080160-cc-HD.swf:
    
  - **Raw**: This filter shows hexadecimal versions of the Oxtel commands. Raw output is useful when ASCII output does not display correctly.
    
    **Receive**:
    
    06/28 11:40:39 D T7A00129 fx0: oxtel:5 raw rx 943427.669644 52
    30 37 31 30 38 30 69 36 30 2d 63 63 2d 2e 73 77 66 3a
    
    **Transmit**:
    
    06/28 11:40:40 D T7A00129 fx0: oxtel:2 raw tx 943427.968686 59
    39 37 31 30 38 30 69 36 30 2d 63 63 2d 48 44 2e 73 77 66 3a

- **Serial Configuration**: Shows what is configured in SystemManager for the serial port connection on your Spectrum X or ChannelPort. This display is fixed and will not change unless the settings are changed in SystemManager.

- **Serial Transmit**: Enter ASCII text to transmit it from the Spectrum X or ChannelPort serial port to whatever device you have configured to receive serial transmissions. This will transmit from the configured serial port only.

  For example, if you transmit the ASCII text “hello” to an automation system, and the serial connection is correct, that text will appear in the system logs of the automation system.

- **Serial Statistics**: Shows the number of bytes transmitted and the number of bytes received from all serial ports on your Spectrum X or ChannelPort. When a change is detected on any serial port, the background will turn green and remain green until no change is seen for two seconds.
Figure 3–14: Serial Statistics, Bytes Transmitted/Received

Select the Enable Refresh check box to refresh the Serial Statistics data grid every second.

About the FXTool Help App

When you install FXTool, you can also install FXToolHelp, which is a separate Help application that you launch from the FXTool user interface by selecting Help > FXTool Help. Refer to Chapter 2, Installing PreviewTool, FXTool, and Help for installation instructions.
Chapter 4
Using PreviewTool

With PreviewTool, you can build a program sequence of up to thirty minutes in length to preview on the Spectrum X or ChannelPort. PreviewTool is for preview only and provides no functionality for on-air program sequencing or live broadcast.

You can create program sequences by layering graphic templates (secondary events) over video clips (primary events) on the sequence timeline. You can edit the sequences and configure various settings for the primary and secondary layers, such as SOM mode and duration settings.

PreviewTool works in coordination with a Playout Channel running on the Spectrum video server (for example, a MediaDirector, a MediaCenter, a MediaDeck 7000, or a Spectrum X). PreviewTool uses the Playout Channel to retrieve clips from the clip directory (default = clip.dir) and templates from the graphics directory (default = gfx.dir) on the Spectrum video server.

Configure the Playout Channel using SystemManager. Refer to “Configuring the Playout Channel” in the SystemManager User Guide for more details.

To preview sequences using PreviewTool, you must dedicate one Spectrum X or ChannelPort channel with a player attached to it to use PreviewTool. (PreviewTool and FXTool can run on the same channel.) Connect a monitor to the Spectrum X or ChannelPort preview channel via an SDI-to-DVI-D connection. Follow the steps in Configuring the Connection to configure the necessary settings before using PreviewTool.

Choose from the following topics:
- Configuring the Connection
- PreviewTool User Interface
- Configuring PreviewTool Default Layer Settings
- Creating a Sequence
- Editing Template Text Fields
- Previewing a Sequence
- About Shared XML Files
- About the PreviewTool Help App

Configuring the Connection

Before you use PreviewTool, you need to configure your Spectrum X or ChannelPort connection.

1. Start PreviewTool.
2. In the Home Window, select Configure Connection. The Configure Connection dialog box appears.
3. In the **Label** box, type in a unique name for your connection.
4. In the **Host** box, type in the host IP address of the connected Spectrum video server.

**TIP:** You can find the host IP address for the Spectrum video server by navigating to the Properties page for that device in SystemManager. For details, refer to “Viewing Spectrum Video Server Properties” in the *SystemManager User Guide*.

5. Click the **Refresh port/channel list?** button to populate the **Select Port/Channel** area, and then choose the correct player for your Playout Channel.
6. If needed, in the **Description** box, type in a description for the connection.
7. Click **OK**.

**PreviewTool User Interface**

This section provides an overview of the PreviewTool user interface. Choose from the following topics:

- **Home Window**
- **Sequence Editor Window**
- **Sequence Playback Window**

**Home Window**

From the **Home Window** you can create a new sequence, select a sequence to preview, or configure the connection.
Figure 4–2: PreviewTool Home Window

From this window, you can perform the following actions:

- Create a new sequence or open an existing sequence to preview. Refer to Creating a Sequence for more information.
- View or choose from a list of recently created sequences.
- Configure the connection. Refer to Configuring the Connection for more information.
- View or choose from a list of recent connection configurations.
- Configure PreviewTool default layer settings. Refer to Configuring PreviewTool Default Layer Settings for more information.
- View the Log. Refer to View Log for more information.
- Launch the PreviewTool Help app.

**Sequence Editor Window**

The **Sequence Editor Window** is the main window for previewing sequences.
The **Sequence Editor Window** contains the following panes:

- **Clips** pane: Displays the contents of your clips directory (clip.dir) on the Spectrum video server. Any clips stored in your clip directory will be available for preview in PreviewTool when you start it. Click the **Clips** tab to open the **Clips** pane.

- **Templates** pane: Displays the contents of your graphics directory (gfx.dir) on the Spectrum video server. Any templates stored in your graphics directory will be available for preview in PreviewTool when you start it. Click the **Templates** tab to open the **Templates** pane.

- **Sources and Colors** pane: Lists an external source and a variety of colors that are available for preview in PreviewTool. When the **Sources and Colors** pane is selected, you can drag the **External** source or any of the available colors to the timeline to use it as a primary event.
**Figure 4–4: Sources and Colors Tab**

- **Sequence** pane: Use to position clips, external sources, colors, and templates on the timeline to build a preview sequence. Drag clips and templates to layers on the Sequence pane to position them on the timeline.

- **Details** pane: This pane has two uses:
  - If you click on a clip or template in the Clips tab or Templates tab, the Details pane shows metadata associated with that clip or template (for example, the format type and start timecode of the clip).
  - After a clip or template is placed on the timeline, the Details pane provides various settings that can be configured for each clip or template. Refer to *Creating a Sequence* for more information.

The **Sequence Editor Window** contains the following control buttons:

- **Refresh**: Click in either the clips pane or templates pane to show clips or templates that are published to the clips directory or graphics directory on the Spectrum video after PreviewTool is opened.

- **Source Search**: Use to search for a specific clip or template. Search options can be defined by clicking *contains* above the search box.

- **Home**: Click to return to the **Home Window**. If you have unsaved changes in your sequence, you will be prompted to save those changes.

- **New**: Click to create a new sequence.

- **Open**: Click to open a previously created sequence.

- **Save** or **Save As**: Click to save your sequence.

- **Load All**: Click to load an entire preview sequence to the Spectrum X or ChannelPort. (The **Sequence Playback Window** will appear.)

- **Load Selected**: Click to load only the selected primary clip and secondary layers associated with that primary clip. (The **Sequence Playback Window** will appear.)
- **Loop**: Select the check box to loop a preview sequence.
- **View Help**: Click to launch the PreviewTool Help app.
- **View Log**: Click to open the Log View Window. Refer to *View Log* for more information.

### Sequence Playback Window

After a sequence is created and loaded for preview, the **Sequence Playback Window** appears.

![PreviewTool Sequence Playback Window](image)

**Figure 4–5: PreviewTool Sequence Playback Window**

During sequence playback, the following control buttons are available:

- **Home**: Click to return to the **Home Window**. If you have unsaved changes in your sequence, you will be prompted to save those changes.
- **Edit**: Click to stop the preview and return to the main **Sequence Editor window**, where the sequence can be edited.

**NOTE**: If you want to add clips or templates, or edit the primary or secondary details, after you load a sequence, click **Edit** to return to the **Sequence Editor Window**.

- **Unload**: Click to stop the sequence playback. If you stop the sequence, you will have to click **Reload** before you can play the sequence again.
Chapter 4 Using PreviewTool

Configuring PreviewTool Default Layer Settings

You can configure the default settings for each template layer in PreviewTool.

When you place a template on the timeline, you can change these defaults as necessary in the Graphics Secondary Details settings. Refer to Adding Secondary Events for details.

1. Start PreviewTool.
2. In the Home Window, click "Or do something else...."
3. Click Configure PreviewTool. The PreviewTool Configuration window appears.
4. Configure the following default settings for each template layer, as necessary:
   - **Layer Label**: Use the default numbering or double-click the layer to give it a unique name.
   - **Default Start Mode**: Double-click the drop-down list, and select one of the following:
     - **Offset from Start**: The start of the template will be offset from the start of the primary clip with which it is associated.
     - **Offset from End**: The start of the template will be offset from the end of the primary clip with which it is associated.
   - **Default Start Offset Seconds**: Double-click the box and use the up or down arrows, or type in a number, to set the number of seconds the primary clip will play before the template begins, and hit Enter.
   - **Default Fade In Rate**: Double-click the drop-down list, and select Default, Slow, Medium, Fast, or Cut to set the fade in speed of the template. You can configure the Fade In Rate speeds in the Playout Channel settings in System Manager. Refer to “Configuring a Spectrum X or ChannelPort Channel” in the SystemManager User Guide for more details.
Chapter 4 Using PreviewTool

Creating a Sequence

5. Click **Save** to save changes.
6. Click **Home** when finished.

**NOTE:** If you have unsaved changes, you will be prompted to save changes to the configuration.

To clear your changes at any time, click **Reload** or **Restore Defaults**.

---

Creating a Sequence

When you build a sequence using PreviewTool, the main video source is called a **Primary Event**, and each template layer is called a **Secondary Event**.

![Secondary Events Layered on Primary Event](image)

**Figure 4–6: Secondary Events Layered on Primary Event**

Layer 1 is the bottom-most secondary layer, while layer 8 is the top-most secondary layer.

Choose from the following topics:

- Adding Primary Events
Adding Primary Events

1. Start PreviewTool.
2. In the **Home Window**, select **New Sequence**.
3. Click the **Clips** tab or **Sources and Colors** tab.
4. Select the clip, color, or the external source you wish to use and drag it to the primary layer on the timeline.

**NOTE:** To add additional clips to the primary layer, select a clip and drag it to the desired position on the timeline. Clips can be placed before, after, or between clips already positioned on the timeline.

5. Select the clip, color, or external source on the timeline to open the **Primary Clip Playout Details** settings.

![Figure 4–7: Primary Clip Playout Details Settings](image)

6. In the **Primary Clip Playout Details** settings, configure the following, as necessary.
   - **Duration**: Use the up or down arrows, or type in a number, to alter the duration of the clip, as necessary.
   - In the **SOM Mode** drop-down list, select one of the following:
     - **Mark In**: Use the clip mark-in point as the first frame to be shown.
     - **Offset**: The clip will be offset from its mark-in point to the first frame it is shown.
     - **Timecode**: The clip will play according to the timecode of the first frame to be shown, according to the clip start timecode.

**TIP:** It is also possible to edit the duration of a primary event by dragging the gripper at the end of the primary event to the left or to the right.

7. Depending on the selection made in the previous step, alter the **Offset SOM** or **Timecode SOM** as necessary.

8. Continue to **Adding Secondary Events**.

Adding Secondary Events

1. Click the **Templates** tab.
2. Select the template you want to preview and drag it to any secondary layer on the timeline.
3. If there is room on the secondary layer, you can add a template to a secondary layer in front of or behind a template that already exists on that secondary layer. If you do, the Select Available Time Interval for Secondary dialog box appears.

![Select Available Time Interval for Secondary Dialog Box](image)

Figure 4–8: Select Available Time Interval for Secondary Dialog Box

4. Select an option and click OK.

5. Select the template on the timeline to open the Graphics Secondary Details settings.

![Graphics Secondary Details Settings](image)

Figure 4–9: Graphics Secondary Details Settings

6. In the Graphics Secondary Details settings, configure the following, as necessary:
   - **Layer**: Confirm that the template is on the correct layer, or set a new layer for the template.
   - **Start Mode**: In the drop-down list, select Offset from Start or Offset from End.
   - **Start Offset**: Use the up or down arrows, or type in a number, to alter the start offset time, as necessary.

**TIP**: It is also possible to place a secondary event on a different layer by dragging the gripper at the top of the secondary event vertically. To modify the **Start Offset**, **Duration**, and/or **End Offset**, drag the gripper at the end of the secondary event horizontally.
End Mode: In the drop-down list, select Offset from Start, Offset from End, or Duration.

- If Offset from Start or Offset from End is chosen, in the End Offset box, alter the end offset time, as necessary.
- If Duration is chosen, in the Duration box, use the up or down arrows, or type in a number, to alter the duration of the template as necessary.

Fade In Speed: In the drop-down list, select Slow, Medium, Fast, Cut, or Default.

Fade Out Speed: In the drop-down list, select Slow, Medium, Fast, Cut, or Default.

If the template is a three-point animation, select Stop Animation to trigger the outro of the template, and alter the Stop Animation Lead Time.

If necessary, in the Text Updates box, update the template’s text. Refer to Editing Template Text Fields for instructions.

Editing Template Text Fields

Some templates contain text fields that you can edit in PreviewTool. For example, the sample Harmonic Dynamic Text Field Templates contain text fields that can be edited in PreviewTool.

1. Start PreviewTool, and open an existing sequence or create a new sequence that contains at least one template with text fields that can be edited. Refer to Creating a Sequence for instructions.

2. Select the template in the sequence that contains the text fields you want to edit.

3. In the Graphics Secondary Details pane, scroll down to Text Updates settings.

   **NOTE:** The default text of the template will not appear in Text Updates settings.

4. In the Text box, type in new text, and select the corresponding Box number for the text.

5. If necessary, alter the Offset time.

6. Click Add.

7. Repeat Steps 4-6 to edit additional text fields in the template as necessary.

After a text field has been edited, you can alter the text field by clicking on the new text. To delete the text, or any edit made to a text field, click Del.
The following example shows three text fields edited for one of the sample Harmonic Dynamic Text Field Templates.

![Edited Text Fields](image)

Figure 4–12: Edited Text Fields

### Previewing a Sequence

After you have loaded the primary and secondary events on the timeline, you can preview the sequence you have created.

**NOTE:** For compatibility with Polaris Play: Playlist Control, PreviewTool 8.0 and later uses an XML file format. You can open a playlist that uses the previous file format (PTS), but it will be converted to XML if you overwrite it with PreviewTool. Also, note that some Playlist Control playlist schema is not supported by PreviewTool. For more information, refer to [About Shared XML Files](#).

1. Start PreviewTool, and open an existing sequence or create a new sequence to preview. Refer to [Creating a Sequence](#) for instructions.
2. If you want the sequence to loop, select **Loop**.
3. In the Sequence Editor window, select **Load All** or **Load Selected** to load a sequence on the Spectrum X or ChannelPort.

   - **Load All** will load all primary and secondary layers in the sequence. **Load Selected** will only load a selected primary event and any secondary events associated with it.

   Please note the following about **Load Selected**:
   - To load a range of contiguous primary events, press **Shift**, select the first and last primary event in the range, and then click **Load Selected**.
   - To load individual contiguous primary events, press `<Ctrl>`, select the individual primary events, then click **Load Selected**.

4. The Playback Sequence Window will appear. When the **Play** button becomes available, click **Play** to preview the sequence.

   **NOTE:** You will experience a short delay from the time you load the sequence to the time the Play button is available.

5. Click **Home** to return to the **Home Window**. If you have unsaved changes in your sequence, you will be prompted to save those changes.
6. Click **Edit** to stop the preview and return to the main **Sequence Editor** window, where the sequence can be edited.

   If you want to add clips or templates, or edit the primary or secondary details, after the sequence has been loaded, click **Edit** to return to the **Sequence Editor Window**.

7. Click **Unload** to stop the sequence playback. If you stop the sequence, you will have to click **Reload** before you can play the sequence again.
8. Click **Reload** to reload the sequence.
About Shared XML Files

With Spectrum 8.0 and later, PreviewTool uses the same file format (XML) that Polaris Play: Playlist Control, Polaris Play: Playlist, and Polaris Play: Scheduler use. With a shared file format, you can create a schedule in Scheduler, preview it with PreviewTool, and load it into Playlist.

You can still open playlist files that are saved in the previous PreviewTool file format (PTS), but note that these files will be converted to XML if you overwrite them.

Also, please note that PreviewTool does not support all of the primary and secondary event information that the Playlist Control playlist schema allows. As a result, if you load a schedule that contains unsupported information into PreviewTool, then overwrite the file, the unsupported information will either be removed from the file or modified by PreviewTool. Refer to Table 4–1 for a list of specific XML elements and attributes that are not supported by PreviewTool 8.0 and later.

IMPORTANT: To avoid unintended modifications to your traffic schedules, Harmonic recommends that you load a copy of the traffic schedule into PreviewTool for previewing and editing; or, select Save As after making changes to the schedule in PreviewTool.

<table>
<thead>
<tr>
<th>Element</th>
<th>Child Element or Attribute</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule</td>
<td>scheduleId</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>scheduleEnd</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>scheduleName</td>
<td>Attribute is set to “PreviewTool”.</td>
</tr>
<tr>
<td></td>
<td>scheduleStart</td>
<td>Attribute is set to current date and time</td>
</tr>
<tr>
<td></td>
<td>loopCount</td>
<td>Unless the value is “Forever”, the attribute is removed.</td>
</tr>
<tr>
<td>Primary</td>
<td>CommentEvent</td>
<td>Child element is removed.</td>
</tr>
<tr>
<td>PrimaryEvent</td>
<td>CommentEvent</td>
<td>Child element is removed.</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Child element is removed.</td>
</tr>
<tr>
<td></td>
<td>GpoEvents</td>
<td>Child element is removed.</td>
</tr>
<tr>
<td></td>
<td>SubtitleFile</td>
<td>Child element is removed.</td>
</tr>
<tr>
<td></td>
<td>transition</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>endMode</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>scheduledStart</td>
<td>Attribute is set to “midnight” of the next day.</td>
</tr>
<tr>
<td></td>
<td>startMode</td>
<td>Attribute is set to “Manual” for first event and “Follow” for subsequent events.</td>
</tr>
</tbody>
</table>
**Table 4–1: XML Playlist Schema not Supported by PreviewTool 8.0 and later**

<table>
<thead>
<tr>
<th>Element</th>
<th>Child Element or Attribute</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>VideoMaterial</td>
<td>materialType</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>title</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>segment</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>contentRating</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>arcMode</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>audioProfile</td>
<td>Attribute is removed.</td>
</tr>
<tr>
<td></td>
<td>afd</td>
<td>Attribute is removed.</td>
</tr>
</tbody>
</table>
|              | source                     | The modification depends on the value of the attribute:  
|              |                            | - “Player A” and “Player B” are set to “Player”  
|              |                            | - “External In 1” and “External In 2” are set to “External In”  
|              |                            | - “Color Generator” is not modified.              |
| GraphicsEvent| Description                | Child element is removed.                         |
|              | title                      | Attribute is removed.                             |
|              | audioProfile               | Attribute is removed.                             |

**About the PreviewTool Help App**

When you install PreviewTool, you can also install PreviewTool Help, which is a separate Help application that you launch from the PreviewTool user interface by selecting the View Help icon. Refer to Chapter 2, Installing PreviewTool, FXTool, and Help for installation instructions.
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

Table A–1: Technical Assistance Center phone numbers and email addresses

<table>
<thead>
<tr>
<th>Region</th>
<th>Telephone Technical Support</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>888.673.4896 or (888.MPEG.TWO) 408.490.6477</td>
<td><a href="mailto:support@harmonicinc.com">support@harmonicinc.com</a></td>
</tr>
<tr>
<td>EMEA</td>
<td>+44.1252.555.450</td>
<td><a href="mailto:emeasupport@harmonicinc.com">emeasupport@harmonicinc.com</a></td>
</tr>
<tr>
<td>Asia Pacific – Other Territories</td>
<td>+852.3184.0045 +65.6542.0050</td>
<td><a href="mailto:apacsupport@harmonicinc.com">apacsupport@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>
</tbody>
</table>

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

The Harmonic Inc. software download locations are:

<table>
<thead>
<tr>
<th>All Harmonic software except Cable Edge software</th>
<th>Software updates are available from the Harmonic website. Contact Harmonic Technical Support for login information.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Edge software</td>
<td>ftp://ftp.harmonicinc.com</td>
</tr>
</tbody>
</table>
The Harmonic Inc. corporate address

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