

Spectrum[™] Playout

RELEASE 7.7

User Guide

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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.



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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:

Convention	Explanation
Typed Command	Indicates the text that you type in at the keyboard prompt.
<Ctrl>, <Ctrl>+<Shift>	A key or key sequence to press.
<i>Links</i>	The <i>italics in blue</i> text to indicate Cross-references, and hyperlinked cross-references in online documents.
Bold	Indicates a button to click, or a menu item to select.
ScreenOutput	The text that is displayed on a computer screen.
<i>Emphasis</i>	The <i>italics</i> text used for emphasis and document references.



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Introduction

This document provides the following in-depth information for using the Spectrum Onboard Payout Control (OPC) feature.

- Introduction (this section) provides the following topics:
 - [Spectrum System Documentation Suite](#)
 - [Technical Support](#)
- [Chapter 1, Onboard Payout Control Configuration Overview](#) provides an overview of configuring a ChannelPort or MediaPort 7000 channel for Onboard Payout Control.
- [Chapter 2, Spectrum Onboard Payout Control](#) provides an overview of the Spectrum Onboard Payout Control feature.
- [Chapter 3, Installing PayoutTool](#) provides instructions for installing PayoutTool.
- [Chapter 4, Using PayoutTool](#) provides instructions for using the OPC monitoring tool, PayoutTool.

Spectrum System Documentation Suite

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

Spectrum (MediaDirector 2201, 2202, 2251, 2252, MediaCenter, MediaPort 5000, MediaPort 7000, ChannelPort)	
This document...	Provides this information...
Spectrum System Installation and Hardware Reference Guide	<ul style="list-style-type: none">■ System installation■ Software installation and upgrade details■ Orientation to system components including MediaDirectors, MediaCenters, MediaPorts, ChannelPorts, and MediaStores■ Troubleshooting system components■ Specifications for system components
Spectrum System Protocol Reference Guide	<ul style="list-style-type: none">■ Command sets and preroll parameters for controlling MediaDirectors■ The Harmonic implementation of FTP server
Spectrum Quick Reference Guides	<ul style="list-style-type: none">■ Front and back panel views of Spectrum devices■ LED assignments and legends
Spectrum ChannelPort Template Authoring Guide	ChannelPort template authoring
Spectrum ChannelPort Tools User Guide	Using ChannelPort tools
Spectrum Payout User Guide	<ul style="list-style-type: none">■ Onboard Payout Control Overview■ Using ScheduleTool■ Using PayoutTool
Spectrum Component Replacement Guide	Component replacement instructions for all Spectrum devices

Spectrum and MediaDeck Release Notes	Last minute information regarding a product release
Spectrum MediaDeck 7000	
This document...	Provides this information...
Spectrum MediaDeck 7000 Installation Guide	System installation
Spectrum and MediaDeck Release Notes	Last minute information regarding a product release
Spectrum MediaDeck 7000 Read Me First	<ul style="list-style-type: none"> ■ Passwords for downloading MediaDeck and SystemManager files ■ Instructions for obtaining and installing the license file for SystemManager ■ Installation overview
Spectrum (MediaDirector 2100, 2101, 2102, 2102B, MediaPort 1000, 3000, 4000, 6000 Series)	
This document...	Provides this information...
Omneon Spectrum System Getting Started Guide	<ul style="list-style-type: none"> ■ System installation ■ Software installation and upgrade details
Omneon Spectrum System Hardware Orientation Guide	<ul style="list-style-type: none"> ■ Orientation to system components including MediaPorts, and MediaStores ■ Troubleshooting system components ■ Specifications for system components
Omneon Spectrum System Protocol Reference Guide	<ul style="list-style-type: none"> ■ Command sets and preroll parameters for controlling MediaDirectors ■ The Harmonic implementation of FTP server
Omneon Spectrum Quick Reference Guides	<ul style="list-style-type: none"> ■ Front and back panel views of Spectrum devices ■ LED assignments and legends
Omneon MediaDeck	
This document...	Provides this information...
Omneon MediaDeck User Guide	<ul style="list-style-type: none"> ■ System installation ■ Upgrade instructions ■ Orientation to system components
Omneon MediaDeck Installation Guide	System installation
Spectrum and MediaDeck Release Notes	Last minute information regarding a product release
Omneon MediaDeck Read Me First	<ul style="list-style-type: none"> ■ Passwords for downloading MediaDeck and SystemManager files ■ Instructions for obtaining and installing the license file for SystemManager ■ Installation overview

All items are packaged in self-extracting files and available for download from the Harmonic FTP site at the following location: <ftp://ftp.omneon.com/updates/omneon/Current/Spectrum/>

- **Release Notes:** Spectrum_v.x.x.x_ReleaseNotes.pdf
- **All other components of the Spectrum System Documentation Suite:** MediaDeckAndSpectrum-v.x.x.x-Documentation.exe

- **For ChannelPort templates, tools, and documentation, as well as Onboard Payout Control tools and documentation:** ChannelPortTemplatesAndTools-v.x.x.x-SWandDoc.exe.

For Spectrum media and wrapper formats, refer to:
Spectrum_Media_and_WrapperFormats.pdf in the Spectrum System Documentation Suite.

For the SystemManager documentation, navigate to:

<ftp://ftp.omneon.com/updates/omneon/current/SystemManager>

SystemManager documents are packaged **SystemManager-v.x.x.x-Docmentation.exe**.

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

All files on the Support Server are password protected. Contact [Technical Support](#) if you need assistance with unlocking the files.

Locating the Latest Documentation on the Harmonic Website

The latest documentation can be found at <http://www.harmonicinc.com/documents-detail>.

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 Technical Support, review the following information:

- **What version of firmware is installed on your system?**

From the **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.

- **Which 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? (for example, 256 MB, 512 MB, or 1 GB)**

- 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. Look for the line that reads, "Physical memory available to Windows."

- **Please provide the manager.oda file from the SystemManager platform or client PC**

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?**

- 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

Onboard Playout Control Configuration Overview

Onboard Playout Control Configuration Overview

Spectrum Onboard Playout Control (OPC), including PlayoutTool, works in coordination with a Playout Channel running on a Spectrum video server that you configure using SystemManager. For information on installing a ChannelPort module, refer to the *Spectrum Installation and Hardware Reference Guide*. For information on installing a ChannelPort or MediaPort 7000 module in a Spectrum System, refer to the *Spectrum Installation and Hardware Reference Guide*.

The following sections provide an overview for configuring a ChannelPort or a MediaPort 7000 for Onboard Playout Control:

- [ChannelPort System Configuration Overview](#)
- [MediaPort 7000 Configuration Overview](#)

ChannelPort System Configuration Overview

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

1. **System:** If you wish to enable Enhanced Channel mode on your ChannelPort, do so before configuring your channels. Otherwise, the ChannelPort 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 ChannelPort channel, including master control switcher settings, audio profiles, independent branding, or serial port settings required for automation. See “Configuring a 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 Onboard Playout Control (OPC) 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 ChannelPort. Configure FXTool if you plan to use it. See the *Spectrum ChannelPort Template Authoring Guide*.
5. **Onboard Playout Control (OPC):** Configure any OPC features and tools that you wish to use. For help with configuring the Playout Channel, Traffic and Billing, or Media Fetch, see “Video Server Services Configuration” in the *Harmonic SystemManager User Guide*. For information on creating and monitoring playlists with ScheduleTool and PlayoutTool, see the *Spectrum Playout User Guide* (this guide). For information on configuring PreviewTool, refer to the *Spectrum ChannelPort Tools User Guide*.
6. **GPIO:** If using GPIO, configure the ChannelPort GPIO triggers and then map them to ChannelPort channel events or Playout Channel events. See “Configuring ChannelPort GPIO Triggers” in the *Harmonic SystemManager User Guide*.
7. **EAS:** If using an EAS, make sure the ChannelPort is connected to the EAS as described in the installation instructions, and then configure the EAS settings. See “Configuring a ChannelPort Channel” in the *Harmonic SystemManager User Guide*.

MediaPort 7000 Configuration Overview

Harmonic recommends that you configure your MediaPort 7000 in the following order:

1. **Player:** Configure your players according to the instructions in “Player Configuration” in the *Harmonic SystemManager User Guide*. Note that if you wish to use Onboard Payout Control (OPC) for player control, configure your player to use “Harmonic Payout” for control.
2. **Onboard Payout Control (OPC):** Configure any OPC features and tools that you wish to use. For information on configuring the Payout Channel, Traffic and Billing, and Media Fetch, see “Video Server Services Configuration” in the *Harmonic SystemManager User Guide*. For information on creating and monitoring playlists with ScheduleTool and PayoutTool, see the *Spectrum Payout User Guide* (this guide).
3. **GPIO:** Configure GPIO settings on the MediaPort 7000 and map those GPIO triggers to any player settings or OPC settings you wish to configure. See “Configuring GPIO” in the *Harmonic SystemManager User Guide*.

Chapter 2

Spectrum Onboard Payout Control

Onboard Payout Control (OPC) is an optional, licensed Spectrum system feature that provides unattended playout of clips and graphics driven by a channel's traffic schedule. OPC controls the Playout Channel and graphics plane of a Spectrum system, but it is not an automation system: each instance of OPC controls only the channel for which it has been configured.

OPC consists of software present on a Spectrum system (MediaCenter, MediaDirector, or MediaDeck 7000) plus a tool for monitoring channels, PlayoutTool (see [Chapter 4, Using PlayoutTool](#) for more information), and a tool for creating and modifying traffic schedules, ScheduleTool (see [Chapter 5, Using ScheduleTool](#)).

Media Fetch, also an optional, licensed feature is available for use with OPC. Refer to [About Media Fetch](#) for more information.

This chapter includes the following sections:

- [OPC Workflow Overview](#)
- [About Traffic and Billing Services](#)
- [About Spectrum OPC Playlists](#)
- [Retrieving a Spectrum As-run List](#)
- [Configuring Error Thresholds](#)
- [About Media Fetch](#)
- [Additional OPC Terms and Concepts](#)

OPC Workflow Overview

The following steps provide an overview for getting started with Onboard Payout Control:

1. Configure the ChannelPort channel for Onboard Payout Control.
 - If you are using a ChannelPort, refer to [ChannelPort System Configuration Overview](#) in [Chapter 1, Onboard Payout Control Configuration Overview](#) for instructions.
 - If you are using a MediaPort 7000, refer to [MediaPort 7000 Configuration Overview](#) in [Chapter 1, Onboard Payout Control Configuration Overview](#) for instructions.



NOTE: The playout channel of a MediaPort 7000 can be configured for OPC, but a MediaPort 7000 cannot play graphic secondaries.

2. Your traffic and billing department creates a playlist that must adhere to the Spectrum OPC playlist schema. Refer to [About Spectrum OPC Playlists](#) for more information.
3. Copy the playlist to the Playlist folder on the Spectrum video server. Refer to [About Spectrum OPC Playlists](#) for more information.
4. Once all the events in the playlist have been executed, you can retrieve your as-run list from the as-run folder on the Spectrum video server. Refer to [Retrieving a Spectrum As-run List](#) for more information.

About Traffic and Billing Services

When you enable traffic and billing services in SystemManager, you enable the use of the playlist and as-run folders, which is an integral part of the OPC feature. After enabling traffic and billing, you can override the default locations of playlist and as-run folders.

Refer to [About Spectrum OPC Playlists](#) for more information about playlists and the playlist folder. Refer to [Retrieving a Spectrum As-run List](#) for more information about as-run lists and the as-run folder.

Refer to “Enabling Traffic and Billing Services” in the *SystemManager User Guide* for instructions on enabling/disabling traffic and billing services.

About Spectrum OPC Playlists

The Spectrum OPC playlist is an XML file that contains information about primary and secondary events that are scheduled to be played at a certain time. This information is set by your traffic services department.

The ChannelPortTemplatesAndTools-v7.7.0.0-SWandDoc package contains a sample OPC playlist as well as an XML schema document (.xsd) for creating an OPC playlist. The OPC .xsd file contains the rules for ensuring your playlist will be a “valid” .xml file.



IMPORTANT: Playlist must conform to the Spectrum OPC Playlist schema.

For an example of an OPC playlist, refer to **OPC_playlist_example.xml**.

For the OPC playlist schema, refer to **OPC_playlist.xsd**.

Loading a Spectrum OPC Playlist

Harmonic has provided a default location on your Spectrum video server for loading your playlists. The default location is shown in the following path:

```
\\<IP address>\<file system>\traffic\<serial number>\playlists
```

- IP address: The IP address of your Spectrum video server (MediaDirector, MediaCenter, or MediaDeck 7000).



TIP: You can find the IP address of 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*.

- The <file system> default name is **fs0**.
- Serial number: The serial number of your Spectrum video server (MediaDirector, MediaCenter, or MediaDeck 7000).



TIP: You can find the serial number of the Spectrum video server by navigating to the Properties page for that device in SystemManager and scrolling to the Serial Number field. For details, refer to “Viewing Spectrum Video Server Properties” in the *SystemManager User Guide*.

To load a playlist via the filesystem:

1. Click **Start**, and in the search field type in the IP address of your MediaDirector, MediaCenter, or MediaDeck 7000.
2. Open the **file system** folder.
3. Open the **traffic** folder.

4. Open the folder with the serial number of your MediaDirector, MediaCenter, or MediaDeck 7000.
5. Open the **playlists** folder.
6. Copy your playlist to this location.
7. To monitor the playlist when it runs, use PayoutTool. Refer to [Chapter 4, Using PayoutTool](#) for instructions.

If you want to configure and use a playlist folder that is not the default folder, see “Configuring a Payout Channel” and “Enabling Traffic and Billing” in the *SystemManager User Guide*.

About Time Delays when Loading Playlists

Delay when Playlists Loaded from Folder to OPC

The Spectrum traffic system regularly polls the **playlists** folder and loads newly discovered Spectrum OPC playlists onto the OPC. After you copy a playlist to the **playlists** folder, it may take at least ten seconds for the playlist to be loaded from the playlists folder onto the OPC, at which point it can be monitored in PayoutTool.

Delay when New Playlist Replaces Playlist On Air

If you load a playlist that is meant to replace a playlist that is currently live, it may take up to 30 seconds after the end of the current primary event before events from the new playlist replace events from the running playlist.



NOTE: The thirty-second delay is in addition to the ten-second delay that may occur when the playlist is loaded from the **playlist** folder to the OPC.

The OPC identifies a point in the future where events from the new playlist can replace events from the running playlist without any on-air disruption. The first event to be replaced will be after that next event (the event after the current on-air event), and at least 30 seconds from, the current on-air event.

For example, if the current primary event is set to play for an hour, events from the new playlist will not start until that primary event and the event following it are complete. However, if the current primary event is about to end, and is followed by several short primary events, the first event to be replaced will be the one that after the next event and has a start time that is at least 30 seconds in the future from the end of the current primary event.

Retrieving a Spectrum As-run List

An as-run list is a log, created by OPC, of executed primary and secondary events. They contain the same data as your playlists, but they also include the actual times and durations of played events. In addition, any failures or errors that occurred during payout are noted in as-run lists.

Harmonic has provided a default location on your Spectrum video server where as-run lists are stored after OPC creates them. The default location is shown in the following path:

```
\\<IP address>\<file system>\traffic\<serial number>\asruns
```

- IP address: The IP address of your Spectrum video server (MediaDirector, MediaCenter, or MediaDeck 7000).



TIP: You can find the IP address of 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*.

- The <file system> default name is **fs0**.
- Serial number: The serial number of your Spectrum video server (MediaDirector, MediaCenter, or MediaDeck 7000).



TIP: You can find the serial number of 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*.

To retrieve an as-run list via the filesystem:

1. Click **Start**, and in the search field type in the IP address of your MediaDirector, MediaCenter, or MediaDeck 7000.
2. Open the **file system** folder.
3. Open the **traffic** folder.
4. Open the folder with the serial number of your MediaDirector, MediaCenter, or MediaDeck 7000.
5. Open the **asruns** folder.



NOTE: Once they are created, as-run lists are kept in this location for 45 days. After 45 days, they will be deleted from the Spectrum system.

If you want to configure and use an as-run folder that is not the default folder, see "Configuring a Playout Channel" and "Enabling Traffic and Billing" in the *SystemManager User Guide*.

Configuring Error Thresholds

To prevent the Spectrum system from creating playlist alarms before a playlist is finalized, you can configure the error thresholds.

For example, you may load a playlist to the playlist folder on the Spectrum video server before all the media clips are prepared. If this playlist is sent to OPC before the media clips are ready, you will see errors in the Spectrum Syslog or in the PlayoutTool Channel Status area or Event List area.

The following error thresholds can be configured in SystemManager:

- **Playlist Warning Threshold (hh:mm:ss):** If there is a problem in the playlist (for example, missing material or a schedule gap), this is the amount of time before the Event Start when the Spectrum system will generate a warning.
- **Playlist Error Threshold (hh:mm:ss):** If there is a problem in the playlist (for example, missing material or a schedule gap), this is the amount of time before the Event Start when the Spectrum system will generate an error.
- **Schedule Gap Error Threshold (seconds):** If there is a schedule gap in the playlist that is greater than the threshold, the Spectrum system will generate an error.
- **Schedule Overlap Error Threshold (seconds):** If there is a schedule overlap in the playlist that is greater than the threshold, the Spectrum system will generate an error.

- **Generate Error on Empty Playlist:** If there are not enough events in the playlist to extend past the time indicated in the Playlist Error Threshold field, the Spectrum system will generate an error.

For more instructions on configuring error thresholds, refer to “Configuring a Payout Channel” in the *SystemManager User Guide*.

For more information on viewing alarms in PayoutTool, refer to [Chapter 4, Using PayoutTool](#).

About Media Fetch

Media Fetch is an optional, licensed feature that extends the functionality of OPC. After it is configured, Media Fetch uses File Transfer Protocol (FTP) to automatically retrieve material that is scheduled to be played. Up to four remote data stores can be configured for Media Fetch.

Each Payout Channel instance needs to be configured for Media Fetch.

As an extension of OPC, Media Fetch sequences transfers so that material needed earliest is transferred ahead of material needed later.

Spectrum systems support Media Fetch only when it is used in conjunction with OPC. It is not possible to use Media Fetch with any other payout control or automation system.

For instructions on configuring Media Fetch, refer to “Configuring the Media Fetch Service” in the *SystemManager User Guide*.

About BXF Support

With Spectrum 7.7 and later, OPC supports playlists in standard BXF format. This means you may load a BXF playlist to your playlist folder (shown in the Traffic and Billing section of the “Payout Channel Properties” page in SystemManager) and the OPC payout channel will interpret it. You may also configure the Traffic and Billing settings to generate as-run files in BXF format. In this case, Spectrum will generate two as-run files, one in BXF format and a second in an OPC-compatible format.

For instructions on modifying the playlist path or as-run format, see “Configuring Traffic and Billing” in the *SystemManager 6.1 User Guide*.

Additional OPC Terms and Concepts

The following terms and concepts summarize the rules that govern the execution of an OPC playlist.

Primary Events

There are several types of primary events:

- **Primary (video) event:** The primary video material is a clip from a Spectrum player, an external input feed, or the internal color generator.
- **Comment event:** These events provide additional information but do not contribute to the video output.
 - **Break Header event:** This is a specialized type of comment event that does not contribute to the video output.
 - **Program Header event:** A specialized type of comment event that does not contribute to the video output.

- **Schedule Header event:** These events are automatically inserted at the start of each schedule, and are used to mark the boundaries between schedules. Like comment events, they do not contribute to the video output.
- **Status event:** This type of event is added to the as-run file by OPC to record important information about the executed playlist.

Primary Event Start Mode

Primary events are executed, or “taken to-air”, based on their Start Mode and the state of the current on-air primary event. There are several types of Primary Event Start Modes:

- *Fixed Start Mode*
- *Follow Start Mode*
- *Manual Start Mode*
- *External Start Mode*

Fixed Start Mode

A Fixed start mode event is taken to air at its scheduled start date/time. If the current on-air event has not completed when the Fixed start event is due, the current on-air event will be preempted (and truncated). If there are events before the Fixed start event that have not yet gone to air, they will be skipped. Note that event date/times are in UTC in an OPC playlist file, but are displayed/edited in the local channel timezone in PlayoutTool.

If a Fixed start mode event is not yet due when the current event ends, the Black Gap Filler event will be taken.

OPC looks ahead at the next five events in the playlist. The Fixed start event must be within this five-event look ahead in order to be taken. Comments, headers, status events, and dropped events are not included in the five-event limit.

OPC acts on the next Fixed start event in the playlist, ignoring subsequent Fixed start events until the first has gone on-air. This could result in a situation where a subsequent Fixed start event becomes overdue (its scheduled time has passed) before it becomes the next Fixed start event.

An overdue Fixed start event is treated as a Follow start event for switching purposes.

A Fixed start event can be taken to air early by a Take Next command from the operator.

Follow Start Mode

A Follow Start Mode event is taken to air when the current on-air event ends.

If there is no on-air event, or the on-air event has a Manual or External End mode, the next Follow event will not be automatically taken to air. A Take Next command will be required to advance the playlist.

A Follow Start Mode event can be taken to air early by a Take Next command from the operator.

Manual Start Mode

A Manual Start Mode event will not be automatically taken to air when the current on-air event ends. When the current on-air event ends, the output will be switched to the default MCS source (if configured) and playlist execution will stop until a Take Next command is issued by the operator.

An upcoming Fixed start event can cause a Manual start event to be skipped before it is taken.

External Start Mode

Like a Manual Start Mode event, an External Start Mode event will not automatically be taken to air when the current on-air event ends. The output will be switched to the default MCS source (if configured) and playlist execution will stop until an External Cue is received.



NOTE: External cues are driven by your Event Manager (GPI) Input configuration. Refer to "Configuring a Playout Channel" in the *Harmonic SystemManager User Guide* for instructions on configuring Event Manager Input.

An External Cue will not start an event unless the event has External Start Mode.

An upcoming Fixed start event can cause an External start event to be skipped before it is taken.

An External Start Mode event can also be started by a Take Next command from the operator.

Primary Event End Mode

The end of a primary event is determined by the End Mode field. There are three Primary Event End Modes:

- *Duration End Mode*
- *Manual End Mode*
- *External End Mode*

Duration End Mode

A primary event with Duration End Mode will end when the scheduled duration for the event expires. If the next event is a Follow start event, it will be taken immediately. If the next event is a Manual or External start event, the output will be switched to the default MCS source (if configured) until a manual trigger is received from the operator. If the next event is a Fixed start event that has not yet come due, the Black Gap Filler event will be taken.

Manual End Mode

A primary event with Manual End Mode will remain on-air until a Take Next command is received from the operator, or it is preempted by an upcoming Fixed start event.

External End Mode

A primary event with External End Mode will remain on-air until an External Cue is received, a Take Next command is issued by the operator, or it is preempted by an upcoming Fixed start event.

An External Cue will not end an event unless the event has External End Mode.



NOTE: External cues are driven by your Event Manager (GPI) Input configuration. Refer to "Configuring a Playout Channel" in the *Harmonic SystemManager User Guide* for instructions on configuring Event Manager Input.

Other Primary Event Fields

The following primary event fields are also used to control the channel output:

- **Expected Start Time (scheduled start time):** determines when Fixed start events are taken.
- **Source:** determines the MCS input to be switched to air (Player, External Input, Color Generator).
- **Material:** determines the video clip to be played when the source is Player, or the color to be displayed when the source is Color Generator.
- **SOM:** determines the starting point for playback of video clips (mark in, offset from the start of the clip, or absolute timecode).
- **Transition:** determines the fade or mix transition to be used between primary events.
- **Duration:** determines the length of time that a primary event stays on-air when the event has Duration End Mode; also used as an approximation of how the event stays on-air for other End Modes.

Secondary Events

Secondary events are always associated with a primary event, and they are always executed with timing that is relative to their primary event. There are two types of secondary events:

- **Graphics event:** These events cause graphics templates to be loaded, faded up, faded down, and unloaded.
- **Comment event:** These events provide additional information but do not contribute to the video output.

Secondary Event Start Mode

The timing of the start of a secondary event is determined by an offset from the start or end of the primary event to which it is attached. There are two Secondary Event Start Modes:

- *Offset From Start Mode*
- *Offset From End Mode*

Offset From Start Mode

The secondary event will go to air at a time offset relative to the start of its primary event. The amount of the offset is specified in the Start Offset field. Negative values are used to specify that the secondary event is scheduled to start before the start of the primary event, and positive values are used to specify that the secondary event is scheduled to start after the start of the primary event.

Secondary events can only extend into (overlap) a single preceding and/or following primary event.

Negative start offsets can only be honored if the start time of the primary event is predictable (for example, if it is a Fixed start event, or it is a Follow event and there is an event with a Duration end type on-air).

Offset From End Mode

The secondary event will go to air at a time offset relative to the end of its primary event. The amount of the offset is specified in the Start Offset field. Negative values are used to specify that the secondary event is scheduled to start before the end of the primary event, and positive values used to specify that the secondary event is scheduled to start after the end of the primary event.

Secondary events can only extend into (overlap) a single preceding and/or following primary event.

Secondary Event End Mode

There are three Secondary Event End Modes:

- *Duration End Mode*
- *Offset From Start End Mode*
- *Offset From End Mode*

Duration End Mode

The secondary event will end after the time specified in the Duration field has passed.

Secondary events can only extend into (overlap) a single preceding and/or following primary event.

Offset From Start End Mode

The secondary event will end at a time offset relative to the start of its primary event. The amount of the offset is specified in the End Offset field. Negative values are used to specify that the secondary event is scheduled to end before the start of the primary event, and positive values are used to specify that the secondary event is scheduled to end after the start of the primary event.

A secondary event cannot “end before it starts”. Invalid combinations of Start Mode/Start Offset, Duration, and End Mode/End Offset will be flagged as an error.

Offset From End Mode

The secondary event will end at a time offset relative to the end of its primary event. The amount of the offset is specified in the End Offset field. Negative values are used to specify that the secondary event is scheduled to end before the end of the primary event, and positive values used to specify that the secondary event is scheduled to end after the end of the primary event.

A secondary event cannot “end before it starts.” Invalid combinations of Start Mode/Start Offset, Duration, and End Mode/End Offset will be flagged as errors.

Other Secondary Event Fields

The following secondary event fields are also used to control the channel output:

- **Material:** determines the graphics template to be loaded, faded up, faded down, or unloaded.
- **Fade In Rate:** determines the graphics fade in rate—cut, slow, medium, or fast.
- **Fade Out Rate:** determines the graphics fade out rate—cut, slow, medium, or fast.
- **Text Updates:** used to populate text boxes in graphics templates, with optional time offset from the start of the secondary event.
- **Stop Animation Lead Time:** used to trigger a stop animation at a specified time before the end of the secondary event.

OPC Interactive Controls

For complete overview of the OPC PayoutTool and its interactive controls, refer to [Chapter 4, Using PayoutTool](#)

Chapter 3

Installing PlayoutTool

This chapter includes installation instructions for PlayoutTool, a monitoring tool for the Spectrum Onboard Playout Control (OPC) feature.

This chapter includes the following sections:

- [System Requirements](#)
- [Installing PlayoutTool](#)

System Requirements

Before installing PlayoutTool, 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, v10.7, or v10.8
- 512MB of RAM (1GB recommended)

System Compatibility

PlayoutTool 7.7 is compatible Spectrum version 7.7 and greater.

Installing PlayoutTool

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 PlayoutTool. If you do not already have Adobe Air installed, you can download the latest version for free at <http://get.adobe.com/air/>.

Installing PlayoutTool

To install PlayoutTool:

1. Open the **Flexapps** folder located in the **ChannelPortTemplatesAndTools-v7.7.0.0-SWandDoc.exe**.

2. Locate the PlayoutTool installer icon, as shown in [Figure 3-1](#).



Figure 3-1: PlayoutTool Installer Icon

3. Double-click the PlayoutTool installer icon to open the PlayoutTool installation dialog, as shown in [Figure 3-2](#).

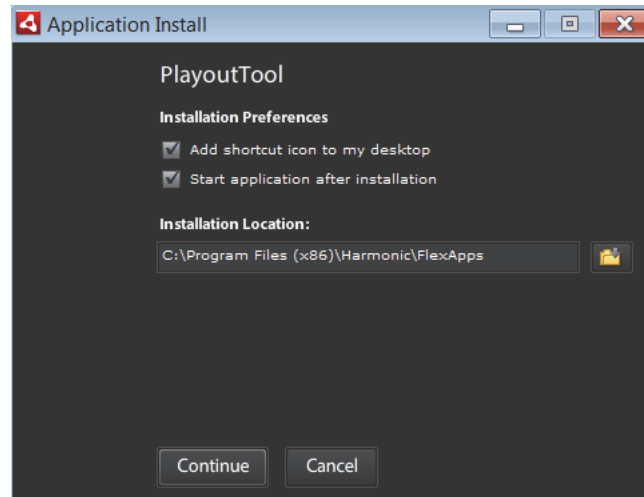


Figure 3-2: PlayoutTool Installation Dialog

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

Refer to [Chapter 4, Using PlayoutTool](#) to begin using PlayoutTool.

Chapter 4

Using PlayoutTool

PlayoutTool is a tool for controlling Playout Channels licensed for Spectrum Onboard Playout Control (OPC), which allows for automatic execution of a playlist derived from a traffic schedule.

For instructions on configuring the Spectrum Playout Channel, refer to “Configuring a Playout Channel” in the *SystemManager User Guide*.

Choose from the following topics:

- [Configuring the PlayoutTool Connection and Channel Group\(s\)](#)
- [Using PlayoutTool](#)
- [Using Channel Override](#)
- [Using Mixer Override](#)
- [Using ARC Override](#)
- [Editing Events in PlayoutTool](#)
- [PlayoutTool Keyboard Shortcuts](#)

Configuring the PlayoutTool Connection and Channel Group(s)

The first time you run PlayoutTool, you will encounter a series of configuration windows in which you will need to configure your connection and set up your Channel Group(s).

A Channel Group consists of any channels on your Spectrum video server(s) that you have a logical reason for grouping together.



NOTE: Only three PlayoutTool clients may view the same channel at the same time. If a fourth client attempts to view the same channel, the channel timeline will not appear in PlayoutTool and a system error will be generated.

To configure the connection and Channel Group(s):

1. Start PlayoutTool.
2. In the **Home Window**, click **New Group**.

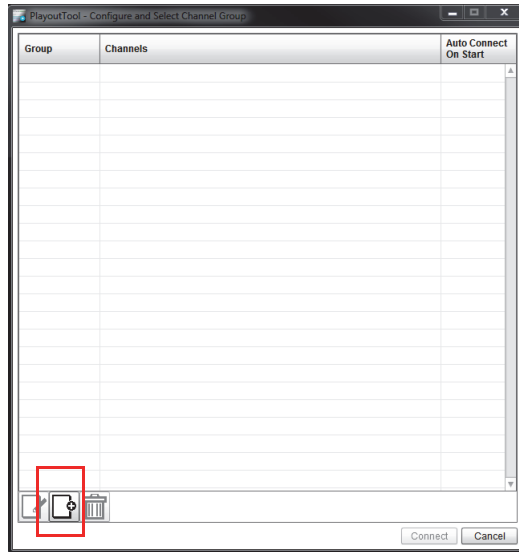


Figure 4-1: PlayoutTool Home Window



NOTE: If you are installing PlayoutTool for the first time, you will be prompted to configure Channel Groups. Click **Yes** to continue.

After clicking **New Group**, the **Configure Channel Group** dialog box opens.

3. In the **Group Name** field, type in a unique name for your Channel Group.
4. Click **New Channels**.

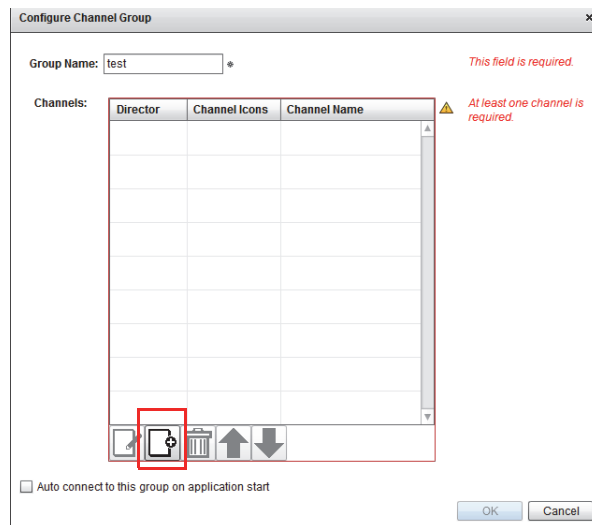


Figure 4-2: Configure Channel Group Dialog Box

After clicking **New Channels**, the **Include Channels in Group** dialog box opens.

5. In the Video Server field, type in the host IP address of the connected Spectrum video server. This may be the MediaDeck 7000 in which the ChannelPort or MediaPort is installed, or, if the ChannelPort or MediaPort is installed in a MediaPort 7000, the host IP address of the connected MediaDirector or MediaCenter.



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*.

When PlayoutTool has confirmed the host, the button next to the **Host** box will turn green and a list of available channels will be displayed.

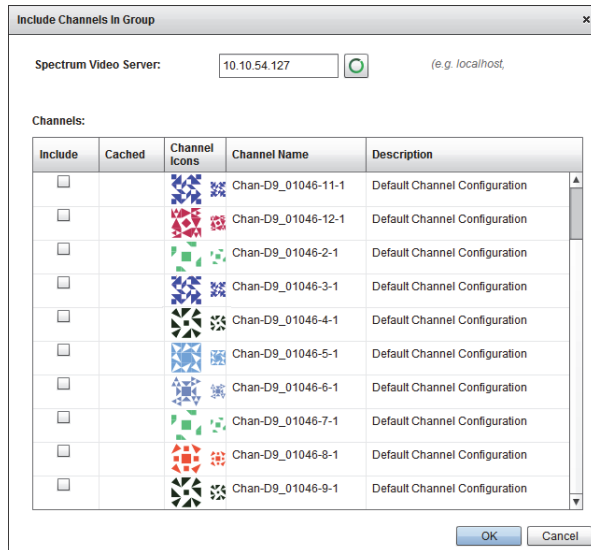


Figure 4–3: Include Channels in Group Dialog Box

- From the **Include** column, select the check box for each channel you want to add to your new Channel Group.



NOTE: When adding a channel to a channel group, make sure the channel is in the same frame rate family (for example, 29.97/59.94, or 25/50) as the other channels in the group. This is so that the channels can share a timescale on the multi-channel horizontal timeline display.

- Click **OK**.



TIP: The Channel Icons that appear in PlayoutTool are default images. You can add channel-specific icons when you configure your Spectrum Playout Channel settings in SystemManager.

After you include channels in your new Channel Group, you will return to the **Configure Channel Group** dialog box. From this dialog box, you can choose to edit channels, add new channels from the same or a different MediaDirector, or delete channels.

To connect to this new Channel Group when you launch PlayoutTool, select **Auto connect to this group on application start**.

- When you are finished configuring the channel group, click **OK**.

You will return to the **Home Window**. Your new Channel Group(s) and assigned channels will be listed. From this window, you can choose to edit a Channel Group, create a Channel Group, or delete a Channel Group.

- To connect to a Channel Group, select a group and click **Connect**.

Using PlayoutTool

The following topics provide an overview of the PlayoutTool user interface. Choose from the following:

- [Channel Group View](#)
- [Channel List View](#)
- [Viewing Channel Selectors](#)
- [Viewing the Channel Status Area](#)
- [Viewing On-Air Primaries and Secondaries](#)
- [Viewing the Event List](#)
- [Viewing Event Details](#)
- [Viewing Channel Alarms](#)
- [Viewing Diagnostic Logs](#)



TIP: You can show/hide views by clicking **Views** from the menu bar.

Channel Group View

After you connect to a Channel Group, the Channel Group view will open, as shown in the following figure.

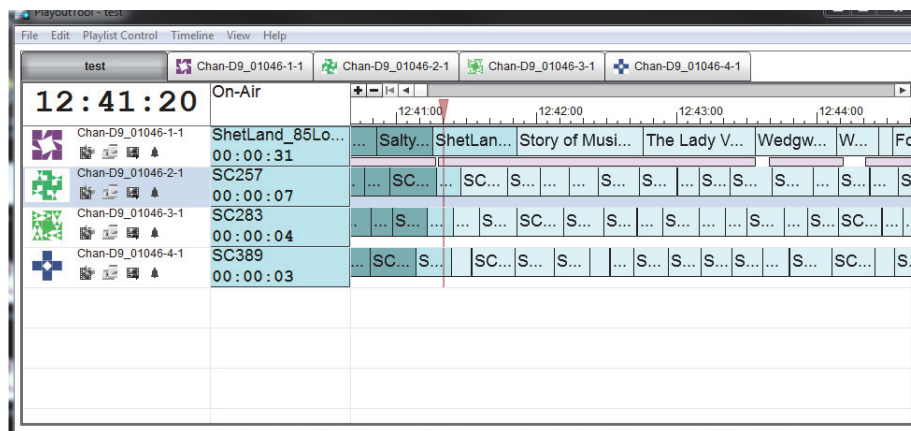


Figure 4–4: Channel Group View

The Channel Group view shows Summary Status icons for each channel. The Summary Status icons reveal information about primary/secondary material status, connection states, alarm states and severity, as well information about timing, data, and playlist errors.

To open a particular channel (the Channel List View), click on one of the channel tabs at the top of the window.

Channel List View

The following figure shows the Channel List view.

To open the Channel List view, click on any channel tab after connecting to your channel group. If you have already loaded a playlist (refer to Chapter 2, “Spectrum Onboard Playout Control”), you will see the playlist executing when you open this view. If you have not yet loaded a playlist, refer to [Loading a Playlist](#) for instructions.

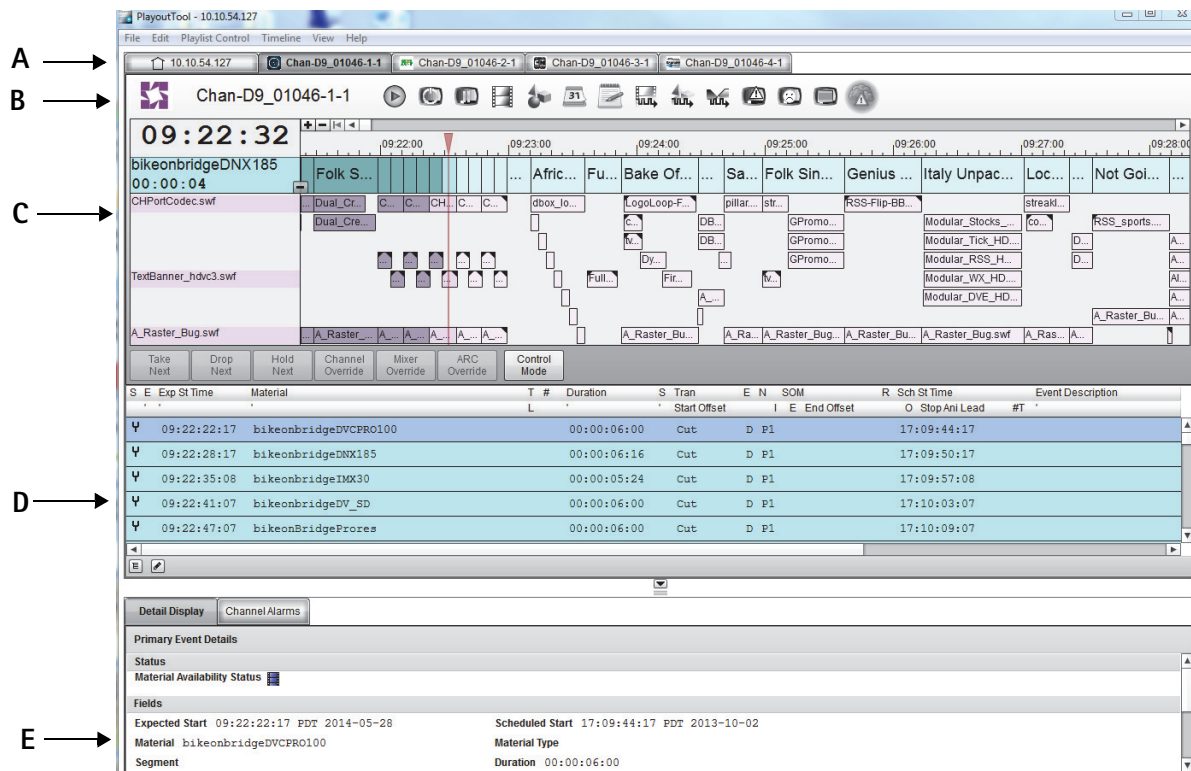


Figure 4–5: Channel List View

The following table explains the areas of the Channel List view.

Table 4–1: Channel List View Areas





Area	UI Name
A	Channel Selectors Refer to Viewing Channel Selectors for more information.
B	Channel Status Area Refer to Viewing the Channel Status Area for more information
C	On-air Primaries and Secondaries Refer to Viewing On-Air Primaries and Secondaries for more information

Table 4–1: Channel List View Areas

Area	UI Name
D	Event List Area Refer to Viewing the Event List for more information
E	This area has two functions: <ul style="list-style-type: none"> ■ Primary Event Details/Graphics Secondary Details. Refer to Viewing Event Details for more information ■ Channel Alarms view. Refer to Viewing Channel Alarms for more information

Viewing Channel Selectors

Each Channel selector shows the following:

- The name of the channel as reported by discovery calls to the Spectrum video server.
- The summary status of the channel. Channel summary status is represented by the following colors:
 - Grey : Channel status is "Normal."
 - Yellow : Channel status is "Info."
 - Amber : Channel status is "Warning."
 - Red : Channel status is "Alarm," or the TCP link to the ChannelPort or MediaPort is disconnected.

To view a channel, click the tab for that channel.

Viewing the Channel Status Area

The following figure shows the status icons of the Channel Status area.

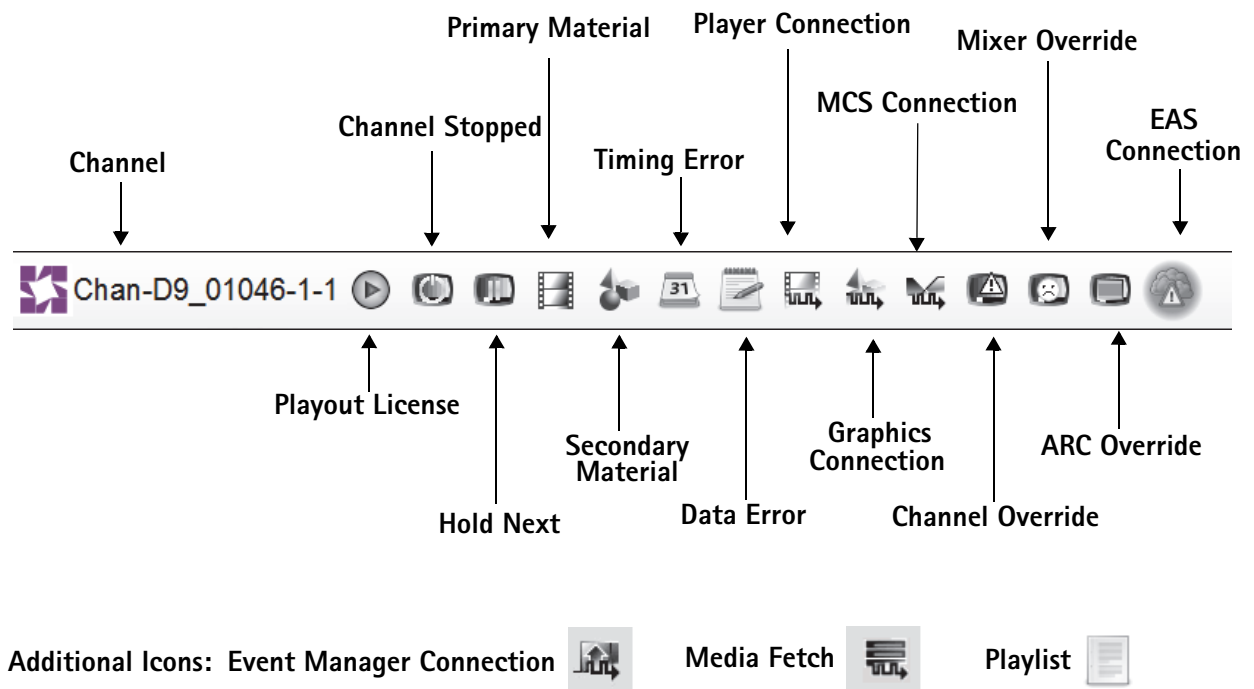


Figure 4–6: Channel Status Area Icons

When viewing channel status icons, please remember the following:

- A tooltip contains the status of each icon.
- When a channel has an error, the area behind the relevant icon will change color to match the severity of the error. The colors correspond to the error colors listed in [Viewing Channel Selectors](#).

The available icon status for each feature is as follows:

■ License, Error, and Material statuses

The following apply to Playout License, Primary Material, Secondary Material, Timing Errors, Data Errors, and Playlist Errors.

- ❑ **Good:** The channel is licensed for operation, no error exists, or no material is missing.
- ❑ **Missing:** Material is missing somewhere in the loaded schedule.
- ❑ **Warning:** Missing material is scheduled within the warning region or an error is scheduled within the warning region.
- ❑ **Alarm:** The channel is not licensed for operation, missing material is scheduled within the alarm region, or an error is scheduled in the alarm region.
- ❑ **Unknown:** The status of the license has not been determined, the status of missing material has not been determined, or the status of an error cannot be determined. (You may see this status for a short time after a channel has been restarted.)

■ Connection statuses

The following apply to connection statuses for Player, Graphics, MCS, Media Fetch, and Event Manager.

- ❑ **Idle** (icon not shown): The channel is not configured, or a feature is not configured for this channel.

- ❑ **Good:** The connection with the feature is normal.
- ❑ **Alarm:** The connection with the feature is not normal.
- ❑ **Unknown:** The connection status of the feature has not been determined. (You may see this status for a short time after a channel has been restarted.)
- **Channel Activity statuses**

The following apply to activity statuses for Channel Override, Mixer Override, and EAS

 - ❑ **Idle** (icon not shown): The channel is not configured.
 - ❑ **Off:** The feature is not active.
 - ❑ **On:** The feature is active.
 - ❑ **Unknown:** The status of the feature is unknown. (You may see this status for a short time after a channel has been restarted.)

For information on configuring the ChannelPort Master Control Switch (MCS), refer to “Configuring a ChannelPort Channel” in the *SystemManager User Guide*.

For information on configuring Media Fetch, refer to “Configuring the Media Fetch Service” in the *SystemManager User Guide*.

For information on configuring players, refer to “Player Configuration” in the *SystemManager User Guide*.

For information configuring an EAS, refer to “Configuring a ChannelPort Channel” in the *SystemManager User Guide*.

Viewing On-Air Primaries and Secondaries

The On-Air Primary and Secondaries area shows a timeline view, which runs in realtime, of the primary video layer and the eight secondary video layers.

When a video is loaded and faded up on the primary event layer, the file name and a countdown are displayed in the left-hand On-Air events column.

To collapse or expand the list of secondary events, click the plus/minus sign at the bottom-right corner of the box showing the file name and countdown.



NOTE: If your video server is configured with a MediaPort 7000, you can only monitor primary events. The Playout Channel will ignore any secondary events scheduled for playout on a MediaPort 7000.

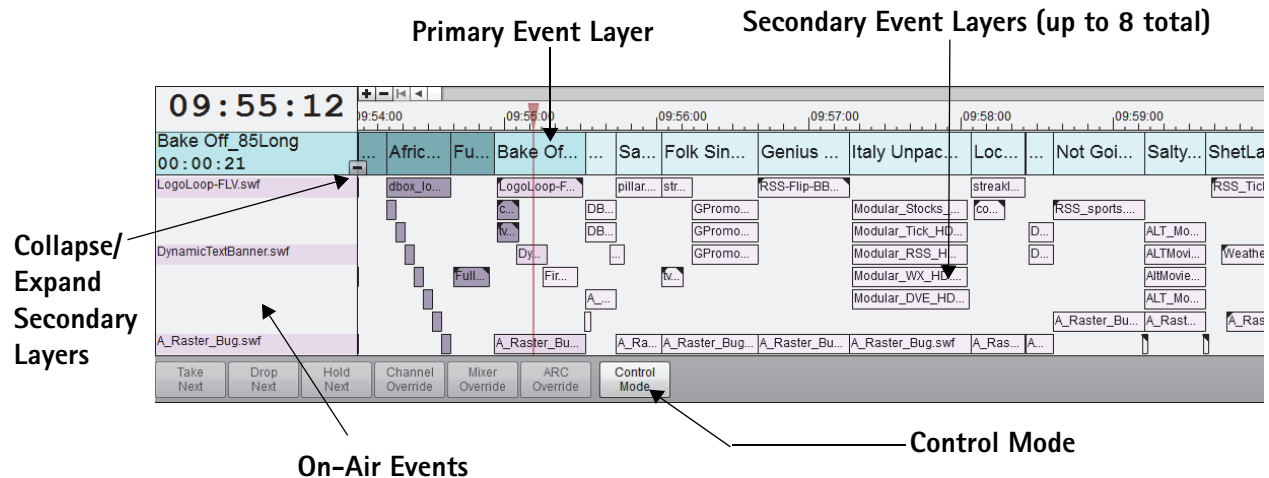


Figure 4-7: On-Air Primaries and Secondaries Area

Note that events may show a black triangle in the upper right- or left-hand corners to indicate the transition type at the beginning or end of the event. Hover over each event to view details on the material and transition type, which may include cut, or slow (s), medium (m), or fast (f) fade.

To change your view of the timeline, from the menu bar, click **Timeline**. You can zoom in and out on the timeline, as well as scroll toward the past or future.

Click the **Control Mode** button to activate the following control buttons, which can be used to control the Playout Channel:



NOTE: The availability of the control buttons is dependent on the configurations you made in SystemManager. Buttons will appear to be unavailable if that feature is not properly configured.

- **Take Next:** Plays the next primary event.
- **Drop Next:** Skips the next primary event.
- **Hold Next:** Holds the current primary event on-air. Hold Next can be canceled by toggling the **Hold Next** button or by clicking **Take Next**. If the duration of the current on-air event has not expired when the **Hold Next** button is toggled off, the primary event will remain on-air for its remaining duration. If the duration of the primary event expires while **Hold Next** is active, toggling the **Hold Next** button off will cause the next primary event to be taken.
- **Channel Override:** Refer to [Using Channel Override](#) for instructions on using the Channel Override feature.
- **Mixer Override:** Refer to [Using Mixer Override](#) for instructions on using the Mixer Override feature.
- **ARC Override:** Refer to [Using ARC Override](#) for instructions on using the ARC Override feature.



TIP: These controls are also available by clicking **Playlist Control** from the menu bar.

Viewing the Event List

The Event List area displays a list of on-air and upcoming events to be handled by the OPC. If your video server is configured with a ChannelPort, you can monitor primary and secondary events (but only primary events on MediaPort 7000).

The following figure shows the Event List area.

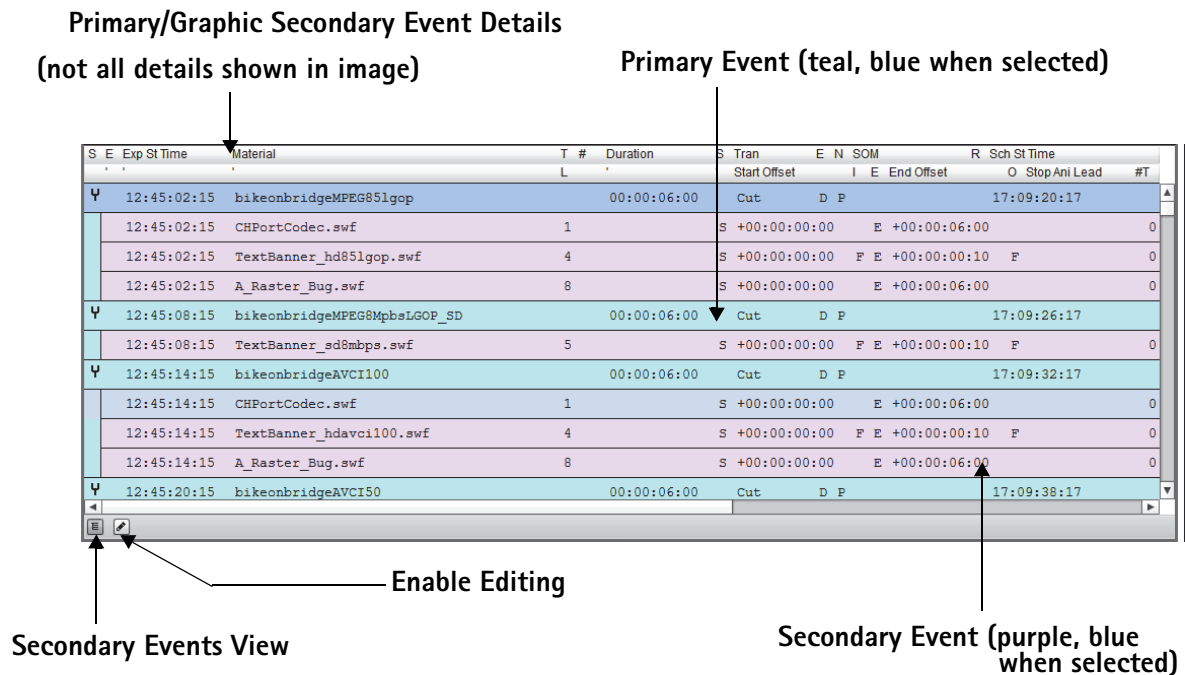


Figure 4–8: Event List Area

When viewing the Event List, please remember the following:

- The Event List area shows current and upcoming events.
- As events are played, they will be removed from the Event List area.
- To toggle secondary event view on or off, click the **Secondary Event View** button (or, from the menu bar, click **View > Show Secondaries**).
- When primary or secondary events are selected in the Event List area, their details are shown in the Primary Event Details/Graphics Secondary Details area. Refer to [Viewing Event Details](#) for more information.
- To toggle editing mode on or off, click the **Enable Editing** button (or, from the menu bar, click **Edit > Edit Mode**). For more information about Editing events in PlayoutTool, refer to [Editing Events in PlayoutTool](#).
- To **Find** any Primary or Secondary event value in the Event List or Event Details, click **Edit > Find**. The **Find** dialog box provides the following:
 - **Field:** select the Field you wish to search.
 - **Find:** type or select the Find value.
 - **Direction:** select the direction in the Event list PlayoutTool will search.
 - **Matching Rules:** for text searches, select **Match Case** and/or **Match Whole Field**.





For a list of primary event icons that appear in the Event List area, refer to [Viewing Primary Event Icons and Status](#).

For a list of secondary event icons that appear in the Event List area, refer to [Viewing Secondary Event Icons and Status](#).

Viewing Primary Event Icons and Status

The following table shows primary event icons and their statuses.


Table 4–2: Primary Event Icons

Primary Detail	Icon	Definition
Secondary Availability		No secondaries
		Secondaries present
		Secondaries present with errors
Error Summary		Primary or associated secondaries has errors

Viewing Secondary Event Icons and Status

The following table shows secondary event icons and their statuses.

Table 4–3: Secondary Event Icons

Secondary Detail	Icon	Definition
Error Summary		Secondary has an error

Viewing Event Details

The details of primary and secondary events can be viewed in the Primary Event Details/Graphics Secondary Details area.

The Primary Event Details/Graphics Secondary Details area can be shown or hidden by clicking and sliding the expander located between the Primary Event Details/Graphics Secondary Details area and the Event List area.

Viewing Primary Event Details

The Primary Details area displays a list of fields that contain information about primary events.

To view the details of a primary event:

1. Click **Details Display**.
2. Click on a primary event.

To close the Primary Event Details area, click the **Expand/Hide Detail Display** button.

The following figure shows the Primary Details area.

Detail Display
Channel Alarms

Primary Event Details

Status
Material Availability Status

Fields

Expected Start	13:15:57:19 PDT 2013-10-21	Scheduled Start	17:09:20:17 PDT 2013-10-02	Material	bikeonbridgeMPEG851gop
Material Type		Segment		Duration	00:00:06:00
Start Mode	Follow	Transition Type	Cut	End Mode	Duration
Source Name	Player1	Start of Material		Rating	
Event Description		Event Origin	Looping	Event Status	Aired OK
Event Title		Traffic UUID	df2818b1-3bb9-1d2b-606a-7aeae7b9db2		










Figure 4–9: Primary Details Area

The following table shows primary event icons and status that appear in the Primary Event Details Area.

Table 4–4: Primary Event Details Icons

Primary Detail	Icon	Definition
Event Overdue		Primary or secondary event is overdue
Gap/Overlap Error		Primary or secondary event has gap or overlap; text field shows amount of gap or overlap
Material Availability		Primary material availability unknown
		Primary material available
		Primary material not available
		Primary material not playable

Table 4–4: Primary Event Details Icons

Primary Detail	Icon	Definition
Media Transfer Status		Transfer status unknown
		Media location queried
		Media not located
		Media located
		Transfer requested
		Media transferring
		Media transferred
		Transfer error
Data Error		A field in the event has invalid data

Viewing Secondary Event Details

The Graphics Secondary Event Details area displays a list of fields that contain information about secondary events.

To view the details of a secondary event:

1. Click the **Secondary Events View** button.
2. Click **Details Display**.
3. Click on a secondary event.

To close the Graphics Secondary Event Details area, click the **Expand/Hide Detail Display** button.

The following figure shows the Graphics Secondary Details area.


Detail Display		Channel Alarms	
Graphics Secondary Event Details			
Status			
Material Availability Status 			
Fields			
Expected Start	13:04:13:16 PDT 2013-10-21	Material	creditsDVE_Text.swf
Duration		Start Mode	Offset From Primary Start
Fade In Rate	Default	End Mode	Offset From Primary End
Fade Out Rate	Default	Stop Animation Lead Time	
Event Description		Event Origin	Looping
Event Title		Traffic UUID	efc084f4-8ab4-f3ef-3609-7aeeae79b50f
Text Updates			
Add	1	00:00:00:00	
Cmd	Box #	Offset	Text
Del	0	00:00:00:00	UP NEXT: Channel Port

Figure 4–10: Graphics Secondary Detail Area

The following table shows secondary event icons and status that appear in the Secondary Event Details Area.

Table 4–5: Secondary Event Details Icons



















Primary Detail	Icon	Definition
Starts too Soon Error		Secondary starts too soon
Secondary Conflict Error		Secondary conflicts with another secondary
Ends too Late Error		Secondary ends too late (too much overhang)
Ends before Starts Error		Secondary ends before its start (negative duration error)
Starts too Soon Error		Secondary starts too soon
Material Availability		Secondary material availability unknown
		Secondary material available
		Secondary material not available
		Secondary material not playable

Table 4–5: Secondary Event Details Icons

Primary Detail	Icon	Definition
Media Transfer Status		Transfer status unknown
		Media location queried
		Media not located
		Media located
		Transfer requested
		Media transferring
		Media transferred
		Transfer error
Data Error		A field in the event has invalid data

Viewing Channel Alarms

When a channel has an alarm, the Channel Alarms button will change color. The colors correspond to the error colors listed in [Viewing Channel Selectors](#).

To open the Channel Alarm view, click **Channel Alarms**.

The following figure shows the Channel List Alarm view.

Detail Display		Channel Alarms					
Select All		Copy To Clipboard					
ID	Date	Time	Facility	Severity	State	Description	
10	2012-12-20	08:55:02:18	Timecode	Info	Clear	Time of day timecode feed seems stable	
9	2012-12-20	08:54:56:21	Timecode	Critical	Set	Time of day timecode feed is unstable	
8	2012-12-20	08:54:56:15	Timecode	Warning	Event	Adjusting system time by 00:00:00:03	
7	2012-12-20	08:54:03:02	Timecode	Warning	Event	Adjusting system time by 00:00:00:01	

Figure 4–11: Channel List Alarm View

In the Channel Alarms view, the following control buttons are available:

- **Select All:** Click to select all log entries.
- **Copy to Clipboard:** Click to copy the log.

Channel Alarm status is represented by the following colors:

- Green : Channel Alarm status is for “Info”
- Yellow : Channel Alarm status is “Warning.”
- Amber : Channel Alarm status is “Failure.”
- Red : Channel Alarm status is “Critical.”

To close the Channel Alarms view, click the **Expand/Hide Detail Display** button.

Viewing Diagnostic Logs

The PlayoutTool diagnostic log displays logs created by PlayoutTool. Note that it does not display logs created by ChannelPort, the ChannelPort Playout Channel, OPC, or the MediaPort Playout Channel.

To open the Log View Window, from the menu bar, click **File > View Diagnostic Logs**.

The following figure shows the Log View Window.

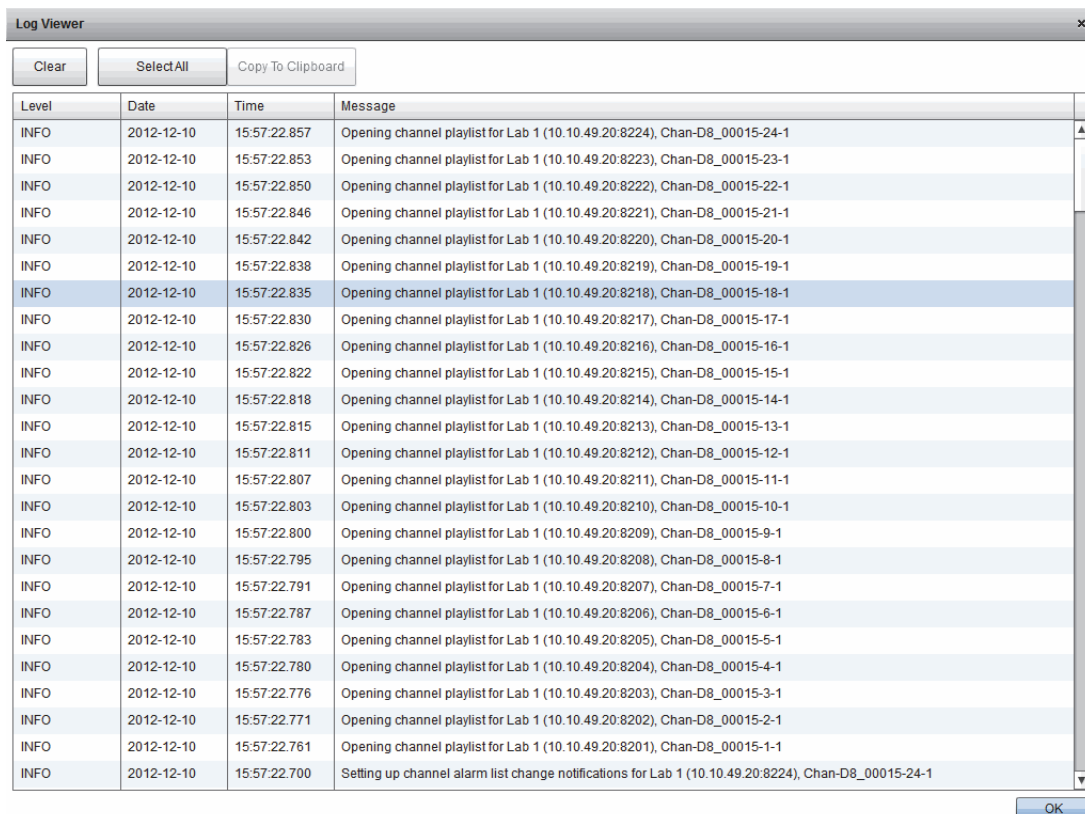


Figure 4–12: Log View Window

In the Log View Window, the following control buttons are available:

- **Clear:** Click to clear all entries from the log.
- **Select All:** Click to select all log entries.
- **Copy to Clipboard:** Click to copy the log.
- **OK:** Click to close the Log View Window.

Using Channel Override

Channel Override gives you the ability, if any undesirable material appears on-air, to quickly take a channel to black and to optionally display a pre-configured graphics template (for example, a “Technical Difficulties” graphic). After overriding the playlist on the channel, you can load a revised/corrected playlist to the Playout Channel, start the playlist running, and put the playlist back on-air by canceling the override.

Refer to Chapter 2, “Spectrum Onboard Playout Control” for information about loading a playlist to the Playout Channel.

Note that if Mixer Override is active for a playout channel, you must toggle it off before you can activate Channel Override, and vice-versa.

Activating Channel Override

When you activate Channel Override, the following events occur (not necessarily in this order):

- The Master Control Switcher (MCS) on the ChannelPort switches to a player that puts the default “black” clip on air.
- If configured, a graphic template for playlist overrides is put on-air, on the configured layer. Refer to “Configuring a Playout Channel” in the *SystemManager User Guide* for more information.



NOTE: If OPC is running on a MediaPort 7000, no graphics template can be added in the event of a playlist override. If Channel Override is activated on a MediaPort channel, a “black” clip will be put on air.

- A status event is logged in the as-run log to record when the override was activated. Refer to Chapter 2, “Spectrum Onboard Playout Control” for information about the as-run log.
- An alarm is added in PlayoutTool to report Channel Override is active. Refer to [Viewing Channel Alarms](#) for more information.
- The Channel status indicates Channel Override is active. Refer to [Viewing the Channel Status Area](#) for information on viewing the Channel status.
- A log message is added to Syslog on the Spectrum video server.
- The as-run status of all on-air events (primary and secondary) indicates a failure (for example, “Preempted”).

When you cancel Channel Override, the following events occur (not necessarily in this order):

- The primary event that would have been on-air is “joined in progress” but graphics secondary events that would have been on-air are *not* re-joined.
- If used, the graphics template for the playlist override is cut down.
- An alarm is added in PlayoutTool to report the override has ended.
- The Channel status indicates Channel Override is canceled. The Channel Status icon will return to its default state, which is gray.
- A log message will be added to Syslog on the Spectrum video server.

To activate Channel Override:

1. Click the **Control Mode** button to enable control of PlayoutTool.
2. Click the **Channel Override** button.

3. Load a revised a playlist.

Refer to Chapter 2, “Spectrum Onboard Playout Control” for instructions on loading playlists to the Playout Channel.

4. Click the **Channel Override** button again to cancel the override and rejoin events in the revised playlist.

Using Mixer Override

Mixer Override gives you the ability, if needed, to quickly switch one mixer source with another. For example, if one source is playing clips from a player, you can override that setting and force the mixer to display a live external input.

The possible inputs for the Mixer Override depend on whether you are in Standard Channel or Enhanced Channel mode. However, regardless of which mode you are in, you can only have one input configured for Mixer Override per Playout Channel.

Note that if Channel Override is active for a playout channel, you must toggle it off before you can activate Mixer Override, and vice-versa.

Refer to “Configuring a Playout Channel” in the *SystemManager User Guide* for more information on configuring Mixer Override.



NOTE: Once you activate Mixer Override, it will run until you cancel it.

Activating Mixer Override

When you activate Mixer Override, the following events occur (not necessarily in this order):

- The Master Control Switcher (MCS) on the ChannelPort switches to a different player, an external input, optional graphic, or the color generator.
- A status event is logged in the as-run log to record when the override was activated. Refer to Chapter 2, “Spectrum Onboard Playout Control” for information about the as-run log.
- An alarm is added in PlayoutTool to report Mixer Override is active. Refer to [Viewing Channel Alarms](#) for more information.
- The Channel status indicates Mixer Override is active. Refer to [Viewing the Channel Status Area](#) for information on viewing the Channel status.
- A log message is added to Syslog on the Spectrum video server.
- The as-run status of all on-air events (primary and secondary) indicates a failure (for example, “Preempted”).

When you cancel Mixer Override, the following events occur (not necessarily in this order):

- The primary event that would have been on-air is “joined in progress.”
- An alarm is added in PlayoutTool to report the override has ended.
- The Channel status indicates Mixer Override is canceled. The Channel Status icon will return to its default state, which is gray.
- A log message will be added to Syslog on the Spectrum video server.
- Secondary events that would have been in progress are not rejoined when the override is canceled.

To activate Mixer Override:

1. Click the **Control Mode** button to enable control of PlayoutTool.

2. Click the **Mixer Override** button.
3. Click the **Mixer Override** button again to cancel the override and rejoin events in the revised playlist.

Using ARC Override

ARC Override gives you the ability, if needed, to quickly override the aspect ratio of a clip playing on the Primary Event layer. For example, if a clip playing on the Primary Event layer has an aspect ratio of 4:3 it can be quickly upconverted to 16:9 if the ARC Override settings in SystemManager are configured as such.

Refer to “Configuring a Playout Channel” in the *SystemManager User Guide* for more information on configuring ARC Override.

Activating ARC Override

When you activate ARC Override, the following events occur (not necessarily in this order):

- The ARC Override settings from SystemManager are applied and the aspect ratio of the clip is converted accordingly.
- A status event is logged in the as-run log to record when the override was activated. Refer to Chapter 2, “Spectrum Onboard Playout Control” for information about the as-run log.
- An alarm is added in PlayoutTool to report ARC Override is active. Refer to [Viewing Channel Alarms](#) for more information.
- The Channel status indicates ARC Override is active. Refer to [Viewing the Channel Status Area](#) for information on viewing the Channel status.
- A log message is added to Syslog on the Spectrum video server.

When you cancel ARC Override, the following events occur (not necessarily in this order):

- The next clip plays at its normal aspect ratio.
- An alarm is added in PlayoutTool to report the override has ended.
- The Channel status indicates ARC Override is canceled. The Channel Status icon will return to its default state, which is gray.
- A log message will be added to Syslog on the Spectrum video server.

To activate ARC Override:



NOTE: When you activate ARC Override on a clip, it is only active for the duration of that clip.

1. Click the **Control Mode** button to enable control of PlayoutTool.
2. Click the **ARC Override** button.
3. Click the **ARC Override** button again to cancel the override and rejoin events in the revised playlist.

Editing Events in PlayoutTool

Enabling editing mode in PlayoutTool allows you manipulate the placement of events on a timeline, and also allows you to add or delete future events on a schedule. You can also edit “Blocks,” which are primary events that have secondary events assigned to them.

When you enable editing, the following functions are available:

- Cut, Copy, Paste, and Delete Events/Blocks
- Insert primary/secondary events, as well as primary/secondary event comments
- Insert Playlists
- Change future events in the Event List area
- Edit text fields of secondary events (where applicable)

Choose from the following topics:

- [Enabling Editing Mode](#)
- [Inserting Primary Events](#)
- [Inserting Secondary Events](#)
- [Deleting Primary/Secondary Events](#)
- [Editing Secondary Event Text Fields](#)
- [Inserting a Playlist](#)
- [Loading a Playlist](#)

Enabling Editing Mode

You enable editing by clicking **Edit > Edit Mode** from the menu bar, or by clicking the **Enable Editing** button located below the Event Lists area.

Inserting Primary Events

When you insert a primary event it is placed directly above the currently selected event.

Inserting a primary event only creates a space for an event in the schedule. You must fill in the details of the event as needed.

To insert a Primary Event:



NOTE: An error icon will appear and not clear until the event is properly edited.

1. Enable editing mode. Refer to [Enabling Editing Mode](#) for instructions.
2. From the menu bar, click **Edit > Insert Event > Primary**.
3. From the Event List area, click the **Material** field (marked by red), and type in the Material ID of the primary event.
4. Click the **Duration** field (marked by red), and set the Duration of the primary event.
5. Click other fields to edit them as needed.

Inserting Secondary Events

You can insert secondary events under primary events. The newly inserted event will be placed on the layer that you assign when you edit the event.

To insert a Secondary Event:

1. Enable editing mode. Refer to [Enabling Editing Mode](#) for instructions.
2. From the menu bar, click **Edit > Insert Event > Secondary Graphics**.
3. From the Event List area, click the **Material** field (marked by red), and type in the Material ID of the secondary event.
4. To assign the layer the event will appear on, click the **Layer** field, and set the layer number.

5. Click other fields to edit them as needed.

Editing Secondary Event Text Fields

If you have a secondary event that has editable text fields, you can make changes to those text fields from PlayoutTool.

To edit the text fields of a Secondary Event:

1. Enable editing mode. Refer to [Enabling Editing Mode](#) for instructions.
2. Select the secondary event that has the text field(s) you want to edit.
3. Click **Detail Display**.
4. In the **Graphics Secondary Details** pane, scroll down to **Text Updates** settings.
5. In the **Text** box, type in new text, and select the corresponding **Box** number for the text.
6. If necessary, alter the **Offset** time.
7. Click **Add**.
8. Repeat Steps 5-6 to edit additional text fields in the template as necessary.

Inserting a Playlist

You can insert a playlist on any Playout Channel that is running. For example, if you have a block of programming that needs to be replaced, you can select and delete that block (refer to [Deleting Primary/Secondary Events](#)), and then insert a new playlist to play in the deleted slot, provided the start time of the new playlist matches the start time of the deleted events.

You can also insert a new playlist to “follow” the currently executing playlist.

To insert a playlist:

1. Enable editing mode. Refer to [Enabling Editing Mode](#) for instructions.
2. If necessary, delete any events that need to be replaced.
3. From the menu bar, click **Edit > Insert Playlist**.
4. Navigate to the playlist you want to insert, and click **Open**.



NOTE: The start mode of the playlist will determine if any more manual intervention is needed. If the playlist has a manual start mode, you will need to enable Control Mode and click Take Next at the appropriate time.



NOTE: When inserting a playlist, PlayoutTool ignores the channel name and schedule start date/time metadata from the playlist file (xml file), but does check the frame rate. If there is a frame rate mismatch, the events will not be inserted.

After the inserted playlist executes, the inserted events will be included in the as-run file for the schedule. For instructions on retrieving the as-run file, refer to “Retrieving a Spectrum As-run List” in Chapter 2, “Spectrum Onboard Playout Control.”

Loading a Playlist

Loading a playlist applies only to channels that are not running (in other words, channels that are stopped.) When you stop a channel, you “flush” the channel of any remaining playlists. When you load a new playlist on a stopped channel, you can allow the playlist to start at its assigned time, manually execute the playlist from the beginning, or “join” the playlist in real time.

When you use the “join” function, PlayoutTool will ignore any previously scheduled events in the playlist.

Consider the following examples:

If you are demonstrating PlayoutTool functionality at a trade show, and matching your playlist to real time is not important, you can simply enable Control Mode, load your playlist, click Start, and allow the playlist to execute as is.

However, if you have a stopped channel and need the playlist to match real time (for example, it's almost 6 pm, and event X is scheduled in the playlist to air at 6 pm), you can enable Control Mode, load the playlist, and click Join to start the playlist in real time.

When you use join functionality, PlayoutTool will ignore any previously scheduled events in the playlist.

To load a playlist:

1. Click **Control Mode** (or from the menu bar, click **Playlist Control > Control Mode**), to enable Control Mode.
2. From the menu bar, click **Playlist Control > Stop** to stop the channel.
3. Click **Playlist Control > Load**.
4. Navigate to the playlist you want to insert, and click **Open**.
5. Depending on your needs, choose from one of the following to start the playlist:
 - ❑ Click **Playlist Control > Start > Take Next**.
 - ❑ Click **Playlist Control > Join**.

After the inserted playlist executes, an as-run file will be created and sent to the asrun folder. For instructions on retrieving the as-run file, refer to "Retrieving a Spectrum As-run List" in Chapter 2, "Spectrum Onboard Playout Control."

Deleting Primary/Secondary Events

When you delete a primary/secondary event, the event is deleted from the playlist and is no longer available for pasting if it has been copied.

To delete a Primary/Secondary Event:

1. Enable editing mode. Refer to [Enabling Editing Mode](#) for instructions.
2. Select the event you want to delete.
3. From the menu bar, click **Edit > Delete Event/Block**.
4. In the confirmation dialog box, click **Yes**.

PlayoutTool Keyboard Shortcuts

The following table shows keyboard shortcuts available in PlayoutTool.

Key Stroke	Function
Ctrl/Cmd + B	start block
Ctrl/Cmd + C	copy
Ctrl/Cmd + E	enable Edit Mode
Ctrl/Cmd + F	find
Ctrl/Cmd + I	insert primary event
Ctrl/Cmd + K	enable Control Mode

Key Stroke	Function
Ctrl/Cmd + L	view diagnostic logs
Ctrl/Cmd + V	paste
Ctrl/Cmd + X	cut
Ctrl/Cmd + [scroll timeline towards past
Ctrl/Cmd +]	scroll timeline towards future
Ctrl/Cmd + \	return timeline to now
Ctrl/Cmd + -	timeline zoom out
Ctrl/Cmd + =	timeline zoom in
Ctrl/Cmd + DEL	delete event/block
Cmd + H (Mac OS X only)	hide application
Cmd + M (Mac OS X only)	minimize application
Cmd + O (Mac OS X only)	open file
Cmd + Q (Mac OS X only)	quit
Alt + Ctrl/Cmd + A	move to channel alarms and events
Ctrl/Cmd + Alt + B	cancel block
Ctrl/Cmd + Alt + C	copy event/block
Ctrl/Cmd + Alt + E	move to event list
Ctrl/Cmd + Alt + F	replace
Ctrl/Cmd + Alt + I	insert comment
Ctrl/Cmd + Alt + O	insert playlist
Ctrl/Cmd + Alt + S	start playlist
Ctrl/Cmd + Alt + T	start dictation
Ctrl/Cmd + Alt + V	paste event/block
Ctrl/Cmd + Alt + X	cut event/block
Ctrl/Cmd + Alt + .	move to detail display
Ctrl/Cmd + Alt + -	show previous channel
Ctrl/Cmd + Alt + =	show next channel
Ctrl + Alt + DEL	delete
Cmd + D (Mac OS X only)	toggle dock
Cmd + H ((Mac OS X only)	hide others

Key Stroke	Function
Ctrl/Cmd + Shift + A	show channel alarms and events
Ctrl/Cmd + Shift + G	show secondaries
Ctrl/Cmd + Shift + H	hide bottom pane
Ctrl/Cmd + Shift + I	insert secondary event
Ctrl/Cmd + Shift + .	show detail display
Cmd + Shift + / (Mac OS X only)	show help
Cmd + Shift + 4 (Mac OS X only)	screen capture, area to file
Ctrl/Cmd + Alt + Shift + A	enable Arc Override
Ctrl/Cmd + Alt + Shift + C	clear playlist
Ctrl/Cmd + Alt + Shift + F	find next error
Ctrl/Cmd + Alt + Shift + H	enable Hold Next
Ctrl/Cmd + Alt + Shift + I	insert secondary comment
Ctrl/Cmd + Alt + Shift + J	join playlist
Ctrl/Cmd + Alt + Shift + L	load playlist
Ctrl/Cmd + Alt + Shift + M	enable Mixer Override
Ctrl/Cmd + Alt + Shift + N	drop next
Ctrl/Cmd + Alt + Shift + P	enable Channel Override
Ctrl/Cmd + Alt + Shift + S	stop playlist
Ctrl/Cmd + Alt + Shift + T	take next

Chapter 5

Using ScheduleTool

ScheduleTool is a web-based application for creating and modifying traffic schedules to use with a Playout Channel on a Spectrum system. ScheduleTool runs on any Spectrum video server with a ScheduleTool license and version 7.6 or later, and can be accessed via the Google Chrome* web browser.

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Connecting to ScheduleTool

ScheduleTool supports the Google Chrome browser on a Windows* or Macintosh* client computer.



NOTE: No other browsers are supported at this time.

To connect to ScheduleTool:

1. Open your web browser, and then type the IP address of your Spectrum video server in the address bar.
2. Log in using the default user name (user) and password (user). Once you are logged in, you may change your password as described in the next section.
3. From the Harmonic landing page, click the button for ScheduleTool to open it.

Changing Your Password

To change the log in password:

1. Click the profile icon in the upper right-hand corner of the management window, and then select **Change Password**.
2. From the **Change Password** dialog box, in the **Old Password** field, enter the current password, and then enter the new password in the **New Password** and **Confirm Password** fields
3. Click **OK**.

Selecting a Channel

When you first open ScheduleTool, you may select one or more playout channels from your video server to add to your ScheduleTool channel list.

To select a channel:

1. Click **Select**. The Select Channel dialog box appears. From this dialog box, you can add a playout channel to your list, view details of a playout channel, or remove a playout channel from your list.
2. Click **Add Channel** to add a playout channel to your list of channels. In the Add Channel Dialog box, you can change the selected video server, add a playout channel, and view details for each playout channel. See the following figure.

Icon	Name	Description
	Chan-D9_01046-5-1 ChannelPort, FR: 29.97	Default Channel Configuration
	Chan-D9_01046-6-1 ChannelPort, FR: 29.97	Default Channel Configuration
	Chan-D9_01046-7-1 MediaPort, FR: 29.97	Default Channel Configuration
	Chan-D9_01046-8-1 MediaPort, FR: 29.97	Default Channel Configuration
	Chan-D9_01046-9-1 MediaPort, FR: 29.97	Default Channel Configuration
	Chan-D9_01046-10-1 MediaPort, FR: 29.97	Default Channel Configuration
	Chan-D9_01046-11-1 MediaPort, FR: 29.97	Default Channel Configuration

Figure 5–1: Adding a Channel



NOTE: If you attempt to add a channel from an unlicensed video server, a message will appear indicating that ScheduleTool is not supported on that video server.

3. Click **Add** to add the channel to your channel list, and then click **Select**.

Viewing Channel Properties

The playout channel provides control for players and graphics. Note that many playout channel properties are configured with SystemManager (see “Configuring a Playout Channel” in the *Harmonic SystemManager User Guide*).

To view properties of a playout channel:

1. From either the **Select Channel** or the **Add Channel** dialog box, click **Details**. The **Channel Properties** dialog box appears.

From this dialog, you may view several playout channel properties. Note that the transitions shown in this dialog can be configured from the Playout Channel Properties page in SystemManager (see “Configuring a Playout Channel” in the *Harmonic SystemManager User Guide*).

Configuring the Default Values for Schedule Events

ScheduleTool allows you to configure the default values for primary and secondary events that you add to your schedule.

To configure default values for events:

1. Click **Channel > Set Default Values** to open the Set Default Values dialog box (see the following figure).

Set Default Values For Chan-D9_01046-1-1 on 10.10.54.127 ✕

Primary:		Graphics:	
Source:	Player A ▼	Start Mode:	OffsetFromStart ▼
Start Mode:	Follow ▼	End Mode:	OffsetFromStart ▼
End Mode:	Duration ▼	Fade In:	Cut ▼
Transition:	Cut ▼	Fade Out:	Cut ▼
		Layer number:	1 ▼

Figure 5–2: Configuring default values for a playout channel

2. Under **Primary**, configure the default values for primary events, including:
 - ❑ **Source:** select a mixer source to be used by this channel.
 - ❑ **Start Mode:** select between **Follow**, **Fixed**, **External**, or **Manual**.
 - ❑ **End Mode:** select between **Duration** or **External**, or **Manual**.
 - ❑ **Transition:** select a transition type. This menu will contain the list of transitions configured for the selected playout channel in SystemManager or MediaDeck 7000 Management. If the playout channel is mapped to a MediaPort, only one transition, “Cut,” will be available.
3. Under **Graphics**, configure the default values for secondary events including:
 - ❑ **Start Mode:** select between **OffsetFromStart**, or **OffsetFromEnd**.
 - ❑ **End Mode:** select between **OffsetFromStart**, or **OffsetFromEnd**.
 - ❑ **Fade In:** select between **Cut**, **Fast**, **Medium**, or **Slow**.
 - ❑ **Fade Out:** select between **Cut**, **Fast**, **Medium**, or **Slow**.
 - ❑ **Layer Number:** select a graphics layer (between 1 and 8).



NOTE: Graphics options are only available for ChannelPort channels.

4. Click **Close**.

Creating, Editing, and Saving a Schedule

When you first open a channel there will be no schedule selected. You may create schedule or open an existing one.

For an explanation of the start time format, and information on start time parameters, see [About Start Times in ScheduleTool](#).

To create a schedule:

1. Click **File > Create**. ScheduleTool automatically inserts a primary event in the Event List.
2. Edit the primary event by clicking in the fields in the Event List or by opening the Detail Display view and editing the details. See [Viewing and Editing the Event List](#) and [Viewing and Editing Event Details](#). Note that the top row of headings in the Event List applies to primary events, and the second row of headings in the Event List applies to secondary events.
3. Insert additional primary or secondary events as needed by clicking **Edit > Insert Event**. Note that ScheduleTool inserts a new or primary or secondary event above the existing event. To insert a primary or secondary event at the bottom of the list, click **End of List > Edit > Insert Event**.



NOTE: Secondary events are only available for ChannelPort channels.

4. Use the following tools from the **Edit** menu to modify your schedule as needed:
 - ❑ **Find Material:** allows you to select clips or templates on your Spectrum video server and them to your primary or secondary events. See [Using Find Material to Add Events to a Schedule](#).
 - ❑ **Find or Replace:** allows you to find and replace any event value in the Event List or Event Details. The Find or Replace dialog box provides the following:
 - ❑ **Field:** select the Field you wish to search.
 - ❑ **Find:** type or select the Find value.
 - ❑ **Replace:** type or select the Replace value.
 - ❑ **Direction:** select the direction ScheduleTool will find and replace.
 - ❑ **Matching Rules:** for text searches, select **Match Case** and/or **Match Whole Field**.
 - ❑ Click one of the following: **Find Next**, **Replace**, **Replace and Find Next**, or **Replace All**.
 - ❑ **Cut, Copy, Paste or Delete:** you may cut, copy, paste, or delete individual events or blocks of events. For instructions on selecting blocks of events, see [Selecting Event Blocks](#).
 - ❑ **Time Ripple:** ensures that the times for all events ripple consecutively from the top of the schedule. Select an event in your schedule, and then click **Edit > Time Ripple**.
5. Save the schedule to your Spectrum video server.
 - a. Click **File > Save** or **Save As**.
 - b. Type a file name and then click **OK**.

By default, the schedule is saved to /fs0/playout/<video server name>/schedules.



NOTE: Simply creating and saving a schedule with ScheduleTool will not cause that schedule to be loaded by OPC. For instructions on loading a schedule (which is loaded the same way as a playlist), see [Loading a Playlist](#) in the "Using PlayoutTool" chapter.

Saving a Schedule to a Subdirectory

Note that you may save the file to a subdirectory of the default path: /fs0/playout/<video server name>/schedules.

To save a schedule to a subdirectory:

1. Click **File > Save As**.

2. In the **File Name** field, type the name of the subdirectory, a forward slash, and then the file name: *<subdirectory name>/<file name>*.
3. Click **OK**.

To open the schedule later, click **File > Open**, and navigate to the subdirectory name.

Using Find Material to Add Events to a Schedule

You may add material to your primary and secondary events with the **Find Material** feature, which allows you to select clips or graphic templates on your Spectrum video server and add them to your primary or secondary events.

To use Find Material:

1. Select an event and click **Edit > Find Material**.
2. From the Find Material dialog box, you may search for Primary (clips) or Secondary (graphic template) material on your video server using the search functions. Click the **Clips** or **Templates** tab.
3. Click the clip or graphic template you wish to add, and then click **OK**. If the event details have not already been modified, the details for the selected clip or template will automatically populate the Event List and Detail Display fields once it is added.

Selecting Event Blocks

You may cut, copy, paste or delete individual events or blocks of events.

To select a block of events:

1. Select the first event in the block, and then click **Edit > Start Block**.
2. Select the last event the block, and then click the desired Edit operation (cut, copy, paste, or delete).
3. Click **Edit > Cancel Block**.

Configuring Schedule Metadata

In order for the playout channel to load a schedule, the schedule metadata must be configured with a valid start time. If the start time is not valid, the playout channel will not load the schedule. For an explanation of the start time format, and information on start time parameters, see [About Start Times in ScheduleTool](#).

To configure schedule metadata:

1. In the **Schedule Metadata** fields at the top of the ScheduleTool page, configure the following:
 - ☐ **Schedule Name:** type the name of schedule.
 - ☐ **Schedule Start:** type the date and time of the schedule.
2. Click **OK**.

Viewing and Editing the Event List

When you add primary and secondary events to your schedule, they are displayed in the Event List. The following diagram describes the Event List view (note that not all event details are shown).

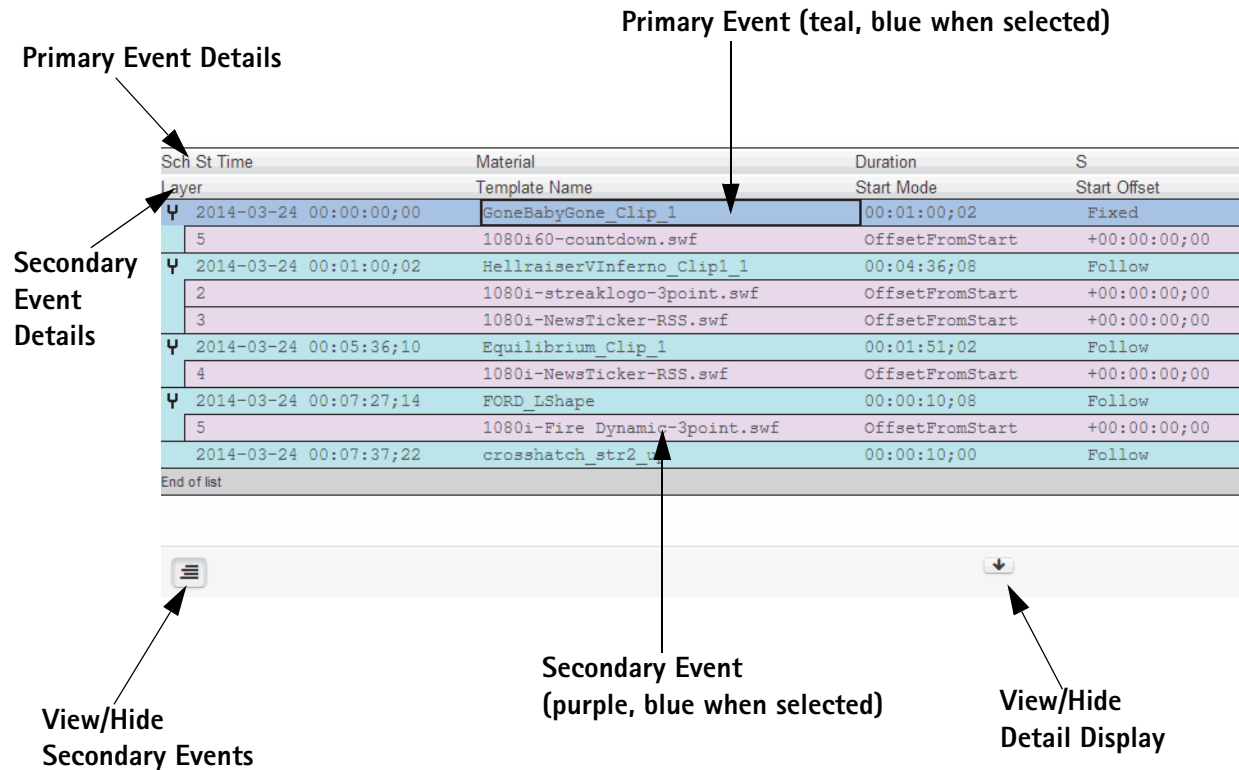


Figure 5-3: Event List

The Event List provides frequently-used event details for primary and secondary events. You may edit these details by clicking in the corresponding fields, or by opening the Detail Display and selecting an event in the schedule.

To configure the Event List view:



1. Click the **View** menu.
2. Select or de-select the following:
 - ☐ **Show Secondaries**: select to show secondary events.
 - ☐ **Show Detail Display**: select to show the Detail Display, which provides all event details. You may also click the down-arrow below the event list to open the Detail Display.

For the complete list of configurable details, see [Viewing and Editing Event Details](#).

Viewing Primary Event Icons and Status

The following table shows primary event icons.

Table 5-1: Primary Event Icons

Primary Detail	Icon	Definition
Secondary Availability		No secondaries
		Secondaries present

Viewing and Editing Event Details

You may edit event details directly in the Event List by clicking in the corresponding fields, or by opening the Detail Display and selecting an event in the schedule. From the Detail Display, you may configure details as follows.



NOTE: For an explanation of the start time format, and information on start time parameters, see [About Start Times in ScheduleTool](#).

For primary events:

- **Scheduled Start Time:** Enter a start time for the event.



NOTE: If the Scheduled Start Time is within one hour prior to, or two hours after a daylight savings time (DST) transition, ScheduleTool will display a time zone abbreviation near the Scheduled Start Time field. If this abbreviation appears in black, you may click it to toggle the time zone, and specify if the event starts before or after the time transition.

- **Event Title:** Type the title for the event.
- **Transition Type:** Select a transition type. This menu will contain the list of transitions configured for the selected playout channel in SystemManager or MediaDeck 7000 Management. If the playout channel is mapped to a MediaPort, only one transition, "Cut," will be available.
- **Start of Material:** Click to open a Start of Material dialog box, which allows you to select a Start of Material mode (**Mark In**, **Offset**, or **Timecode**) and enter an offset or timecode as needed.
- **Material:** Enter the material name or use Find Material to locate a clip or template. See [Using Find Material to Add Events to a Schedule](#).
- **Duration:** Enter a duration for the event.
- **End Mode:** Select between **Duration**, **Manual**, or **External**.
- **Event Description:** Type a description of the event.
- **Start Mode:** Select between **Follow**, **Fixed**, **Manual**, or **External**.
- **Source Name:** Select a mixer source.



NOTE: The following event details may not be edited at this time: "Rating," "Material Type," and "Segment."

For secondary events:

- **Material:** Enter the material name or use Find Material to locate a clip or template. See [Using Find Material to Add Events to a Schedule](#)
- **Start Mode:** Select between **OffsetFromStart** or **OffsetFromEnd**.
- **End Mode:** Select from **Duration**, **OffsetFromStart**, or **OffsetFromEnd**.
- **Layer:** Select a graphics layer (between 1 and 8).
- **Start Offset:** Enter a start offset for the event.
- **End Offset:** Enter an end offset for the event.
- **Duration:** Enter a duration for the event.

- **Fade In Rate:** Select between **Cut**, **Fast**, **Medium**, or **Slow**.
- **Fade Out Rate:** Select between **Cut**, **Fast**, **Medium**, or **Slow**.
- **Stop Animation Lead Time:** Double-click to open a dialog box, which allows to enable or disable this feature, and to specify the offset between the end of the selected secondary event and the start of an “outro” sequence.
- **Event Description:** Type a description of the event.
- **Event Title:** Type the title for the event.
- **Add Text Update** (button): Click to configure dynamic text boxes for use with templates that include dynamic text. Up to 255 text updates may be added for each secondary event. Configure the following:
 - ❑ **Box #:** Type the number that corresponds to the dynamic text field in the template.
 - ❑ **Offset** (optional): Enter the desired offset from the start of the selected secondary event using the following format: +/- hh:mm:ss;ss.
 - ❑ **Text:** Type the text to be displayed.

Saving a Schedule for a Different Channel

In some cases, you may want to save a schedule to be used by more than one channel. This may be useful, for example, if you want to configure a backup channel.

To save a schedule for a different channel than the original:

1. Open the schedule that you wish to save to a different channel.
2. Click **Channel > Select** to open the Select Channel dialog box.
3. Note that a warning appears in the bottom of the dialog box. Click the X at the right of the warning to proceed.
4. Select different channel from your channel list, or click **Add** to add a new channel, and then click **Select**.
5. With the new channel open, save the schedule with a different name by clicking **File > Save as**, and typing the new name of the schedule.
6. Click **OK**.



NOTE: Simply creating and saving a schedule with ScheduleTool will not cause that schedule to be loaded by OPC. For instructions on loading a schedule (which is loaded the same way as a playlist), see [Loading a Playlist](#) in the “Using PlayoutTool” chapter.

Viewing Logs (for MediaDeck 7000 only)

At this time, you may view logs of ScheduleTool operation for troubleshooting purposes on the MediaDeck 7000 but no other Spectrum video server.

To view logs:

1. Click **Help > View Diagnostic Logs**.

Clearing Local Settings

To clear all local ScheduleTool settings, such as the channel list, channel values, schedule modifications, and lists of recently opened schedules or files, use the clear local settings features. Note that this feature also clears any open schedule, including unsaved changes.

To clear local settings:

1. Click **Help > Clear local settings**, and then click **Clear**.

About Start Times in ScheduleTool

Start Time Format

With Spectrum 7.7 and later, make sure to enter your local time for event and schedule start times. ScheduleTool displays event and schedule times in the local time zone configured for the channel, and then automatically converts them into universal time (UTC) for use with OPC.

If you wish to view time zone details, including previous Pacific Standard Time (PST) and Next Pacific Daylight Time (PDT), click **Select Channel > Details**.

Start Time Parameters



NOTE: Simply creating and saving a schedule with ScheduleTool will not cause that schedule to be loaded by OPC. For instructions on loading a schedule (which is loaded the same way as a playlist), see [Loading a Playlist](#) in the "Using PlayoutTool" chapter.

Please note the following important points when setting Start Time parameters for your schedules.

When OPC loads a schedule for playout, it performs the following checks:

- If a schedule start date/time is set to more than 24 hours in the past, the schedule will not be loaded.
- If there is one or more schedules already loaded, and a new schedule is configured with a start date/time earlier than the first loaded schedule in the event list, then the new schedule will not be loaded. This is to prevent disruption of the currently running schedule.
- If there are no schedules loaded, the new schedule will be "advanced" (past events will be deleted, and the current event will be added to the playlist based on each event's scheduled date/time).
- If the schedule matches one that has already been loaded (meaning both the schedule name and schedule start date/time match exactly) then the loaded schedule will be replaced with the new one. Note that the first schedule in the event list can only be partially replaced: future events will be replaced; past events cannot be replaced; the on-air event will not be replaced; the next event will not be replaced; and any future events with a start time within 30 seconds of the current time will not be replaced.

ScheduleTool Keyboard Shortcuts

The following table shows keyboard shortcuts available in ScheduleTool.

Key Stroke	Function
Ctrl + Alt + N	create schedule
Ctrl + Alt + O	open schedule
Ctrl + B	start block
Ctrl + Alt + B	cancel block

Key Stroke	Function
Ctrl + Alt + X	cut event/block
Ctrl + Alt + C	copy event/block
Ctrl + Alt + V	paste event/block
Ctrl + Backspace	delete event/block
Ctrl + I	insert event
Ctrl + Shift + I	insert secondary event (graphic)
Ctrl + Alt + F	find
Ctrl + Alt + R	replace
Ctrl + M	find material
Ctrl + Alt + D	set default channel values
Ctrl + Alt + T	time ripple
Ctrl + Alt + S	save file
Ctrl + Alt + Shift + S	save file as
Ctrl + Alt + Q	close

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 provided continuous problem resolution and escalation of issues around the clock.

Table A-1: For Distribution and Delivery (Legacy Harmonic) Products

Region	Telephone Technical Support	E-mail
Americas	888.673.4896 or 408.490.6477	support@harmonicinc.com
EME	+44.1252.555.450	support.emea@harmonicinc.com
Asia Pacific – Other Territories	+852.3713.9300	hongkongtechsupport@harmonicinc.com
India	+44.1252.555.450	support.emea@harmonicinc.com
Russia	+7.495.926.4608	rusupport@harmonicinc.com
Africa	+44.1252.555.450	support.emea@harmonicinc.com
Mainland China	+86.10.8391.3313	chinatechsupport@harmonicinc.com

Table A-2: For Production and Payout (Legacy Omneon and Rhonet) Products

Region	Telephone Technical Support	E-mail
Americas	888.673.4896 or 408.490.6477	omneon.support@harmonicinc.com
EMEA	+44.1252.555.450	omneonemeasupport@harmonicinc.com
Asia Pacific – Other Territories	+65.6542.0050	apacsupport@harmonicinc.com
Japan	+81.3.5565.6737	japansupport@harmonicinc.com
China - Mainland	+86.10.8391.3313	chinasupport@harmonicinc.com
Russia and CIS	+7.495.926.4608	rusupport@harmonicinc.com

The Harmonic Inc. support website is:

<http://www.harmonicinc.com/content/technical-support>

The Harmonic Inc. Distribution and Delivery product software downloads site is:

<ftp://ftp.harmonicinc.com>

The Harmonic Inc. Playout and Production software downloads site is:

<ftp://ftp.Omneon.com/Updates/Omneon/Current/>

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 (from the U.S. and Canada)
Tel. +1.408.542.2500 (outside the U.S. and Canada)
Fax.+1.408.542.2511

