



# Spectrum™ System and Spectrum MediaDeck™ 7000 7.3 Release Notes

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Rev C

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## Table of Contents

Introduction .....	4
High Impact Notice .....	4
New Features in 7.3 .....	4
Resolved Issues in 7.3 .....	6
Compatibility and Packaging.....	8
Compatibility .....	8
System Software Release Packaging .....	9
Locating the Latest Documentation on the Harmonic Website .....	9
Obtaining Spectrum APIs .....	10
Software Installation Instructions .....	10
Quiescent System State during Upgrade.....	10
Handling Device Upgrade Failures.....	10
Installing or Upgrading the SystemManager Software.....	10
Installing or Upgrading the SystemManager Online Help System .....	11
Upgrading MediaDeck 7000 Firmware .....	11
Upgrading MediaPort Firmware.....	11
Upgrading MediaDirector and MediaCenter Firmware.....	12
Verifying Disk Drive Firmware.....	12
Upgrading Disk Drive Firmware .....	12
Verifying that MediaDirectors in EFS Have Common View of Disks, RAID Sets, and File System.....	13
Spectrum MediaDirector 2252/2251 Configuration Guidelines.....	14
MediaDirector 2252 Configuration Guidelines .....	14
MediaDirector 2251 Configuration Guidelines .....	14
MediaDeck 7000 and MediaDeck 7000 SSD Configuration Guidelines.....	14
MediaDeck 7000 with Integrated SSD Storage .....	15
MediaCenter Configuration Guidelines.....	15
Known Issues.....	15

Known Issues Related to MediaDeck 7000 .....15

Known Issues Related to the MediaDirector 2201/2202, 2251/2252, and the MediaCenter .....16

Known Issues Related to ChannelPort.....18

Known Issues Related to MediaPorts .....20

Known Issues Related to Player or File Type.....22

Known Issues Related to the Media API.....25

Known Issues Related to MediaTools (Applications) .....26

Known Issues Related to MediaStore 5000 series.....26

Known Issues Related to Third Party Equipment and Material.....27

## Introduction

These notes provide important information regarding Spectrum System Software Release 7.3.0.0 including installation instructions, known issues, and workarounds for the release. The notes also cover information for the MediaDeck 7000 Release 7.3.0.0.

Please read these notes prior to upgrading software as all sections contain important information. Release 7.3.0.0 includes fixes for specific issues which have been reported in the field, integrates hot fixes which were released to specific customers during the lifecycle of the previous release, and adds new functionality described below.

Release 7.3.0.0 only supports systems with MediaDirector 2201, 2202, 2251, and 2252, as well as MediaDeck 7000 and MediaCenter.

## Verifying Your Downloads

The Spectrum software and documentation packages (.exe files) contain checksum files (.md5 extensions) that you can use to verify that your downloads are correct. To use the checksum file to compare the contents of your downloads against those of the original Spectrum software and documentation packages, use a utility such as the MD5 and SHA Checksum Utility.

## High Impact Notice

- Due to changes in the license structure, ChannelPort licenses issued for releases 7.0 and 7.1 will not have full graphics capabilities when used with release 7.3.0.0. To correct this problem, contact Harmonic Technical Support to request a new ChannelPort license key.
- Compressed Dolby E audio format metadata is not set in the MXF-wrapper, except in the case of MPEG and MPEG-LGOP formats. This issue will be addressed in the next release.
- Seagate ST15K.7 and ST15K.6 Fibre Channel disk drives have reported a potential for drive failure when the read/write heads of the drives remain stationary for long periods of time. This problem was corrected in the drive firmware included with Spectrum releases 6.4.2 and 7.1. If you are upgrading from a Spectrum release other than 6.4.2, 7.1, or 7.2 ensure that the drive firmware is upgraded during the installation of this release. Refer to [Upgrading Disk Drive Firmware](#) for instructions.

## New Features in 7.3

The following table includes the latest features in this release.

Feature	Description
Support EFS Across Three MediaDirectors 2252/2251	<p>This Spectrum release provides support for an extended file system (EFS) across three 2252/2251 Series MediaDirectors. This is a licensed feature.</p> <p>For installation instructions and diagrams, refer to the <i>Spectrum Installation and Hardware Reference Guide</i>.</p>

Feature	Description
Support for Onboard Closed Caption Insertion	<p>This release provides support for onboard insertion of US SD-CC CEA608 and CEA 708 closed caption information from an external file. This feature is licensed per channel and can be licensed for a MediaPort 7000 Series module or a ChannelPort module.</p> <p>Refer to “Configuring Closed Caption Insertion” in the <i>SystemManager User Guide</i> for details.</p>
Support for Decode of PitchBlue® AVC (H.264) on ChannelPort	<p>This release provides ChannelPort modules the ability to playout programs delivered via PitchBlue, including transport stream demultiplexing and native H.264 decoding at PitchBlue operating points. This feature is licensed on a per-module basis.</p> <p><b>Note:</b> Transport streams must be uploaded to watch folders in real time or faster if you want to playout or view during import.</p> <p>Refer to “Configuring Watch Folders” and “Creating an AVC (H.264) Player” in the <i>SystemManager User Guide</i> for details.</p>
Active-Clip Deletion Protection	<p>This Spectrum release provides clip deletion protection of active clips or clips loaded to a timeline (idle, cued, playing, or recording).</p> <p>Refer to “Viewing Spectrum Video Server Properties” in the <i>Harmonic SystemManager User Guide</i>.</p>
Support for WD EX800M SATA Drives	<p>This release provides support for WD EX800M SATA disk drives to replace end-of-life RE4 SATA disk drives, currently used in MediaCenter and MediaDeck 7000.</p>
Support for 16 Audio Tracks on XDCAM HD	<p>Support has been added to allow 16 audio tracks on XDCAM HD players.</p> <p><b>Note:</b> While Spectrum supports 16 audio tracks on XDCAM HD players, the XDCAM HD standard is limited to eight audio tracks.</p>
Support for Netatalk for Interoperability with Mac OS X 10.8	<p>Harmonic recommends the following guidelines for using Netatalk/AFP and Spectrum 7.3</p> <ul style="list-style-type: none"> <li>• If upgrading to Spectrum release 7.3, remove all .AppleDesktop, .DS_Store, or .AppleDouble files/directories from the Spectrum file system.</li> <li>• If upgrading to Mac OSX 10.8.x, remove all .AppleDesktop, .DS_Store, or .AppleDouble files/directories from the Spectrum file system.</li> <li>• Do not access the same Spectrum file system from a combination of Mac systems running different versions of Mac OS X.</li> </ul>

## Resolved Issues in 7.3

The following table includes issues that have been resolved in this release:

PR#	Description
VSG-10114	In some cases, a clip would show artifacts when played on a 7000 Series MediaPort but would not when played on a 5000 Series MediaPort.
VSG-10044	In previous versions, flattened MXF self-contained clips resulted in unreadable m2v files.
VSG-10082 VSG-9788 VSG-9694 VSG-9453 VSG-9441 VSG-9420 VSG-9346 VSG-9271 VSG-9459	Several enhancements have been made to the Media Fetch service. Please contact Harmonic Technical Support or your Harmonic sales engineer for more information.
VSG-9981	In certain situations, for MediaDirectors in an extended files system, shutting down a MediaDirector could disrupt other MediaDirectors due to loop initializations that sometimes affected real-time disk activity.  Changes have been made so that multiple overlapping loop initializations no longer occur.
VSG-9969 VSG-9772 VSG-9759 VSG-9500	The SATA driver, including code for progressive recovery, has been updated.
VSG-9945	In some cases, for loop commands issued via the DNF controller, a cued clip with user data "ovn_avid_type" with a value of "_LOOP_ON_" would loop for one less frame than desired.
VSG-9923	With this release, Spectrum systems no longer generate AFD based on the aspect ratio configuration of a player.
VSG-9861	In some cases, when a player controlled by VDCP was configured with a non-zero last-frame freeze option, and the active clipped ended before the play command for the next clip was issued, the last frame of the first clip was played instead of a black frame before the first frame of the second clip.
VSG-9857	In some cases, when clips with corrupted video bitstreams were played on a MediaPort 7000 module, the decoder reported decoding errors that were handled by resetting the entire channel, which resulted in a one-second disruption of video, audio, and data.
VSG-9830	Using live SDI input as a source for a ChannelPort DVE requires the SDI input license.
VSG-9812	With this release, the number of configurable players (active and disabled) is 256.

PR#	Description
VSG-9801	Previously, QuickTime clips that contained 24-bit audio, specified with an audio sample descriptor using “twos” or “sowt” format, and a bytesPerPacket field of three, were incorrectly interpreted as 16-bit audio, which caused audio corruption when the clip was played or re-wrapped.
VSG-9775	In some cases, recording QuickTime proxy clips at 59.94 frames per second would cause the resulting clips to have corrupted stsz atoms.
VSG-9734	With this Spectrum release, if video index AFD is not present on the SDI input, RP 186 AFD is not embedded in MPEG-2 vide, regardless of the presence of SMPTE 2016 AFD.
VSG-9574	In some cases, allowing a clip to pause at the end and then starting a second clip via VDCP could cause audio stuttering at the beginning of the second clip.
VSG-9554	In previous versions, for the ChannelPort module, if the primary playout format was set to 720p60 and the clip format was 1080i30, and a DVE template was enabled for more than 75% of active video, corruption or shifts would be visible on the background video only
VSG-9531	Previously, if a clip containing SMPTE 334-1 closed caption packets with incorrect CC service bit values was played out, and the output video format was the same as the clip’s video format, the closed caption packets’ service bits were not corrected.
VSG-9499	In previous versions, the VDCP cueWithData command was set to abort the cue and set the cueOrOpFailed status bit. The new behavior of the VDCP cueWithData command is to interpret a zero duration to mean cue the clip from the specified start position at the end of the clip.
VSG-9493	In some cases, third-party AVC-Intra clips played out with corrupted video due to using all, or nearly all, of the bytes available in the frame.
VSG-9454	As-run files, generated by the Spectrum Onboard Playout Control traffic service, now have “.xml” file extension.
VSG-9372	In previous versions, when modifying the system to allow guest access, it was necessary to reboot the system in order for this ability to be enabled for AFP and CIFS. The reboot was unnecessary for FTP to pick up the new configuration. (VSG-9372)
VSG-9366 VSG-9365	Several enhancements have been made to Spectrum video serves to improve robustness of GXF clip playback.
VSG-9313	In some cases, when playing an interlace clip on a progressive timeline (for example, an SD clip on a 720p player), if the VDCP SOM-based position request was incorrect, the clip could be cued at a position other than the beginning.
VSG-9268	In some cases, during playout of DV clips, the decoder would stop before the final segments were decoded, causing a small number of horizontal and vertical macroblock artifacts.
VSG-9197	In some cases, using a QuickTime wrapper to re-wrap or copy an MPEG LGOP clip that contained inconsistent GOP lengths could generate an incorrect container, leading to playout failure.
VSG-9077	In some cases, third-party AVC-Intra clips showed artifacts on playout.

PR#	Description
VSG-8856	In previous Spectrum releases, using Mac OSX 10.8 or higher and Netatalk/afp was not supported.
VSG-8357	This release improves performance when encoding 24 MXF self-contained clips on MediaDirector 22x1/22x2. (VSG-8357)

## Compatibility and Packaging

### Compatibility

The components of a Spectrum System (SystemManager, MediaDirector, MediaStores, and MediaPorts) are designed and tested to run together. Interoperability between components running different versions of the system software is not supported. All components of a Spectrum System should be upgraded to Spectrum System Software Release 7.3.0.0 together.

<b>Product:</b>	Spectrum™ System and Spectrum MediaDeck 7000™
<b>Software Version:</b>	Release 7.3.0.0
<b>Supports Media API:</b>	6.4 or later, 7.0 or later
<b>Supports SystemManager:</b>	5.26
<b>Supports Omneon MediaGrid:</b>	3.1.0.2
<b>Supports MAS:</b>	3.5.0.0
<b>Supports ProBrowse:</b>	2.6 Uses media.dll 6.2 to import Spectrum compatible content
<b>Supports ProXchange:</b>	1.7.2 Uses media.dll 6.2 to import Spectrum compatible content
<b>Supports ProMedia Carbon:</b>	3.19 Uses media.dll 6.1 to import QuickTime Ref generated by Spectrum  Uses non-spectrum dll to import all other wrapper types. Supportability is not deterministic. Clips that do not import will need to be examined on a case by case basis.
<b>Supports Workflow System (WFS):</b>	1.44 Uses media.dll 6.1 to import QuickTime Ref generated by Spectrum  Uses non-spectrum dll to import all other wrapper types. Supportability is not deterministic. Clips that do not import will need to be examined on a case by case basis.



**If you are upgrading from a very old release of Spectrum software:** Before upgrading your system to the latest release, contact Harmonic Technical Support to obtain copies of the Release Notes for all intermediary releases, up to and including the release you wish to install. Carefully review “High Impact Notices,” “Warnings, Issues and Exceptions,” and “Fixed in Release x.x” in the Release Notes for each intermediary release.

After upgrading the SystemManager, upgrade all MediaPorts and MediaDirectors on a given EFS immediately thereafter and restart together. Contact Harmonic Support for upgrade planning or to discuss specific configuration or interoperability issues.

**Important points regarding API compatibility:** Before upgrading your Spectrum or MediaDeck system, make sure the Spectrum API used by any third party application in your workflow is compatible with this latest version. If you fail to upgrade the Spectrum API on your third party application, you may experience problems.

Spectrum version 7.3 is compatible with versions 7.0 or later, and 7.3 of the Spectrum Player and Media APIs.

Before upgrading a Spectrum API, please consult with your third party application provider to determine compatibility between the application and the Spectrum API version.

## System Software Release Packaging

Software updates are available from the Omneon Support Server. The components of Release 7.3.0.0 are available at the following location:

For **Spectrum**: <ftp://ftp.omneon.com/Updates/Omneon/Current/Spectrum>

For **MediaDeck**: <ftp://ftp.omneon.com/Updates/Omneon/Current/MediaDeck>

All files on the Omneon Support Server are password protected. MediaDeck users can refer to the printed *Omneon MediaDeck Read Me First* provided in your MediaDeck kit for the passwords to access the necessary files. All other customers can contact Harmonic Technical Support if they need help unlocking the files.

The full download consists of several files:

System Software (including software for MediaCenter, MediaDirector, MediaPorts, Disk Drives, and Windows ClipTool):

**MediaDeckAndSpectrum-v7.3.0.0-Software.exe**

User Documentation (including Quick Reference Guides, Getting Started Guide, Hardware Orientation Guide, Protocol Reference Guide, Installation and Hardware Reference Guide, and Release Notes):

**MediaDeckAndSpectrum-v7.3.0.0-Documentation.exe**

For ChannelPort template authoring package, tools, and documentation, as well Onboard Playout Control tools and documentation:

**ChannelPortTemplatesAndTools-v7.3.0.0-SWandDoc.exe.**

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

## Locating the Latest Documentation on the Harmonic Website

The latest product documentation, as well as information provided for older releases, is available on the Harmonic website at: <http://www.harmonicinc.com/documents-detail>

## Obtaining Spectrum APIs

Spectrum APIs are available for use following the terms outlined in a Non-Disclosure Agreement (NDA). Contact [TechPartners@harmonicinc.com](mailto:TechPartners@harmonicinc.com) to obtain the NDA.

## Software Installation Instructions

Please carefully review the *Spectrum Getting Started Guide*, *Spectrum Installation and Hardware Reference Guide*, *SystemManager Installation Guide*, and the release notes for each product prior to commencing firmware, or SystemManager application installation.

Refer to the *SystemManager Installation Guide* for the most up-to-date SystemManager installation procedure. Refer to the *SystemManager Release Notes* for the latest product information. To download the installation guide and the latest release notes, navigate to:

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

and download the following: **SystemManager-v5.26.0.0-Documentation.exe**

## Quiescent System State during Upgrade

When upgrading MediaPorts and MediaDirectors, ensure that no recording or playback is taking place; make sure all players are stopped. Also ensure that no file copies or transfers are in progress internally or on the Ethernet port. Upgrade all MediaPorts and MediaDirectors at the same time. Before commencing any player or file activity, verify that all MediaDirectors and MediaPorts are running the same version of firmware as shown on the SystemManager **Upgrade Firmware** page under the **Home** tab. In addition, prior to upgrading disk drive firmware, stop the file system on every MediaDirector. If you attempt to upgrade the MediaDirector or MediaPort during player or file activity, playback may be compromised, or file corruption may occur.

**Important!** Since Release 6.3.0.0, MediaDirectors on an EFS need to run the same firmware revision or risk file system corruption. To avoid corruption, when upgrading MediaDirectors on an EFS, first stop the file system on all MediaDirectors, then upgrade all MediaDirectors at the same time. Once upgrades are complete on all MediaDirectors, restart the file system on each MediaDirector. (VID-5691, VSG-5053)

## Handling Device Upgrade Failures

If a failure occurs when upgrading a device, the SystemManager will generate an Upgrade Failed alarm. If a device has an Upgrade Failed alarm, the SystemManager will not let you perform another upgrade until the Upgrade Failed alarm is cleared. To clear alarms, follow these steps:

1. Click on the **Diagnostic** tab on the SystemManager menu bar.
2. Click on the **View Alarms** icon on the left of the screen to display the **View Alarms** field.
3. Click on the **Clear alarms** button to clear the **Upgrade Failed** alarms.
4. Start another upgrade.

## Installing or Upgrading the SystemManager Software

The SystemManager application is packaged in a comprehensive installer file which installs the SystemManager application and other components required for the successful operation of the SystemManager. An installation wizard is available to guide you; however, you will need to choose between options during the installation process. Refer to the *SystemManager Installation Guide* for an explanation of the procedure and the choices you need to make during the installation process.

## Installing or Upgrading the SystemManager Online Help System

The SystemManager online help system gets installed along with the SystemManager application and other components required for the successful operation of the SystemManager. Refer to the *Omneon SystemManager Installation Guide* and the *Omneon SystemManager Release Notes* for additional information.

## Upgrading MediaDeck 7000 Firmware

**Note:** Bring the system to a quiescent state, as described above, before commencing any MediaDeck 7000 upgrade.

Before upgrading to the latest version of software, check with your automation, archival, and third party software vendors for compatibility information.

Use the following steps to upgrade MediaDeck 7000 firmware using the **Upgrade Firmware** page. This method allows you to upgrade one or more MediaDecks.

1. From the **Home** tab, click the **Upgrade Firmware** icon in the left-hand column to display the **Upgrade Firmware** page.
2. In the MediaDirectors section at the top, click the **Select all** button. Click the **Upgrade** button. The **Upgrade MediaDirectors Now** page appears with a list of the selected MediaDecks.
3. Click **OK** to upgrade the selected MediaDecks, or click **Cancel** to exit the procedure safely without upgrading.
4. When the upgrade process is complete, select the MediaDecks again, and then click the **Reboot** button. The **Reboot MediaDirectors Now** page appears.
5. Click **OK** to restart the selected MediaDecks, or click **Cancel** to exit the procedure safely.

## Upgrading MediaPort Firmware

**Important!** When upgrading any of the MediaPorts 5xxx Series from a pre-5.5.1 version to version 7.3, you must perform the following upgrade procedure, including the restart, *twice* in order for the upgrade to take effect. Once the MediaPort has been upgraded to 6.4.1 or later, further upgrades to 7.3.0.0, or later may be performed successfully by following the upgrade procedure only once.

Bring the system to a quiescent state as discussed in “Quiescent System State during Upgrade” before commencing any MediaPort upgrades.

Before upgrading to the latest version of software, check with your automation, archival, and third party software vendors for compatibility information.

Use the following steps to upgrade MediaPort firmware using the **Upgrade Firmware** page. This method allows you to upgrade one or more MediaPorts. If you have received a new SystemManager CD-ROM that includes a specific MediaPort upgrade, the **Software Installation** instructions must be followed completely. This ensures that new software is placed properly in the **D:\Upgrades** directory.

To upgrade a Spectrum MediaPort:

1. With the SystemManager software properly installed, log on to the SystemManager application.
2. Click the **Home** tab.
3. In the left-hand column, click the **Firmware Selection** icon to display the **Firmware Selection** page.
4. Click the radio button for the desired version of firmware. When the confirmation dialog box appears, click **OK**.
5. Click the **Home** tab.
6. In the left-hand column, click the **Upgrade Firmware** icon to display the **Upgrade Firmware** page.
7. Scroll to the **MediaPorts** section of the page.

8. Click the check boxes for the MediaPorts whose firmware you want to upgrade, or (recommended), click the **Select all** button to select all MediaPorts. You cannot have MediaPorts with different revisions on the same system.
9. Click the **Upgrade MediaPorts** button. The **Upgrade MediaPorts Now** page appears with a list of the selected MediaPorts.
10. Click **OK** to upgrade the selected MediaPorts, or click **Cancel** to exit the procedure safely.
11. When the upgrade process is complete, select the MediaPorts again, and then click the **Reboot MediaPorts** button. The **Reboot MediaPorts Now** page appears.
12. Click **OK** to restart the selected MediaPorts or click **Cancel** to exit the procedure safely.

**Note:** When rebooting/restarting MediaPorts installed in a MediaDeck, the MediaDeck will be unavailable.

## Upgrading MediaDirector and MediaCenter Firmware

**Note:** Bring the system to a quiescent state as discussed in “Quiescent System State during Upgrade” before commencing any MediaDirector or MediaCenter upgrade.

Before upgrading to the latest version of software, check with your automation, archival, and third party software vendors for compatibility information.

Use the following steps to upgrade MediaDirector or MediaCenter firmware using the **Upgrade Firmware** page. This method allows you to upgrade one or more MediaDirectors or MediaCenters.

1. From the **Home** tab, click the **Upgrade Firmware** icon in the left-hand column to display the **Upgrade Firmware** page.
2. In the **MediaDirectors/MediaCenters** section, click the **Select all** button. You cannot have MediaDirectors with different versions on the same file system; to ensure file system integrity, upgrade all MediaDirectors at the same time.
3. Click the **Upgrade** button. A dialog box will appear asking you to confirm or cancel the upgrade.
4. Click **OK** to upgrade the selected MediaDirectors and MediaCenters, or click **Cancel** to exit the procedure safely without upgrading.
5. When the upgrade process is complete, select the MediaDirectors and MediaCenters again, and then click the **Reboot** button. The **Reboot MediaDirectors Now** page appears.
6. Click **OK** to restart the selected MediaDirectors or MediaCenters, or click **Cancel** to exit the procedure safely.

## Verifying Disk Drive Firmware

1. From the **Configuration** tab, click the **Disk Utilities** icon in the left-hand column and then click the icon for any MediaDirector to open the **Disk Utilities** page for that MediaDirector.
2. Click the **Upgrade Disk Firmware** button.
3. Compare the **Firmware Rev. Level** and **New Firmware Available** columns for each drive. If any drives are running earlier firmware than is available, proceed to upgrade disk drive firmware.

## Upgrading Disk Drive Firmware

Before upgrading disk drive firmware, do the following checks:

- Verify that startup is complete
- Ensure that the most recent release of SystemManager has been installed.
- Ensure that no recording or playback is taking place on the entire system.
- Ensure that all players have been stopped.

- Ensure that no file copies or transfers are in progress.

To install the Spectrum 7.3.0.0 firmware upgrade:

**Important!** Failure to perform this procedure in the correct order could cause performance issues or data loss.

**Caution!** Be sure to maintain power to the system throughout the drive firmware upgrade procedure. Loss of power during upgrade may render a drive inoperable and require a replacement or cause a loss of content.

1. From SystemManager, click the **Home** tab.
2. Click the **Firmware Selection** icon to display the **Firmware Selection** screen.
3. Select the desired firmware version, and then click **OK** on the confirmation dialog that appears.

**Note:** This selection chooses the directory from which firmware upgrade files will be selected. The selection does not perform the upgrade.

4. Click the **Configuration** tab.
5. Click **Disk Utilities** to display the **Disk Utilities** for all MediaDirectors, MediaCenters, and MediaDecks.
6. Click the device that contains the disk drive(s) you want to upgrade. The **Disk Utilities** for the selected device will appear.
7. Under **Logical View**, click the link to the file system.
8. On the **Filesystem Properties** page, click **Stop FS**.

**Note:** Make sure that ALL MediaDirectors connected to the file system show that the file system is stopped. Failure to stop the file system before the disk drive firmware upgrade can cause file system corruption.

9. Return to the **Disk Utilities** page.
10. Under **Physical View**, click **Upgrade Disk Firmware**.
11. Select the check boxes for the drives you want to upgrade, or select **Select all Disks** (recommended). You cannot have disks with different versions within a RAID set.
12. Click **Start Upgrade Firmware**, and then click **OK** on the confirmation dialog that appears to start the upgrade, or click cancel to exit the procedure safely without upgrading.
13. Once the upgrade is complete, reboot the MediaDirector, MediaCenter, or MediaDeck.

After you reboot the MediaDirector, the file system should start automatically. If this does not happen, refer to “Initializing a File System” in the *Harmonic SystemManager User Guide* for instructions on restarting the file system. Please read the instructions carefully, as initializing your file system could cause you to lose data.

## Verifying that MediaDirectors in EFS Have Common View of Disks, RAID Sets, and File System

Prior to taking any action on a Disk Drive, RAID Set, File System, MediaStore, or Fibre Channel interface, it is important to verify that all MediaDirectors in an Extended File System (EFS) have a common view of disks, RAID Sets and MediaStores. This procedure can be found in the *Harmonic SystemManager User Guide*. It is also available in the Help System and can be found by entering “Common View of Disks” in the Search box and selecting the “Verifying that MediaDirectors in EFS have a Common Views of Disks, Raid Sets, and File System” link.

When a drive is dead and has been removed from the system, the drive’s information still remains on the **Disk Utilities** screen and in the SystemManager database. Select the **Remove Drive** button on the Drive Properties page of the SystemManager to remove the drive from the associated MediaDirector. In an EFS setup, you must remove the “dead” drive from each of the MediaDirectors in the system or you will receive alarms in the SystemManager stating F/C Loop views are inconsistent between MediaDirectors.

## Spectrum MediaDirector 2252/2251 Configuration Guidelines

If multiple Final Cut Pro seats are used simultaneously on an active MediaDirector 2252/2251, a Final Cut Pro “Dropped Frame” warning might occasionally be seen in the editor if frames are dropped. This issue will be addressed in a future release.

### MediaDirector 2252 Configuration Guidelines

Spectrum MediaDirector 2252 supports up to 24 channels of video record and play at a bitrate of 50 Mbps; however, the following limitation is present in the 7.3.0.0 software release:

- A maximum of 20 channels at 50 Mbps when decoding with the QuickTime Reference wrapper type.

If your MediaDirector 2252 channel requirements include the condition discussed above, contact your Harmonic Systems Engineer before ordering the equipment. Harmonic will perform an analysis based on your requested operational parameters and project timeline and will either approve the configuration as requested or specify the changes required to bring the system into compliance with MediaDirector 2252 system specifications.

### MediaDirector 2251 Configuration Guidelines

Spectrum MediaDirector 2251 supports up to 600 Mbps of real-time play in any combination of codec, wrapper, or proxy.

## MediaDeck 7000 and MediaDeck 7000 SSD Configuration Guidelines

MediaDeck 7000 supports up to 4 channels of video record or play with embedded audio. Some combinations of bit rate, codec, wrapper, and track count may not be supported due to performance limitations. This section discusses these limits and the process for properly provisioning high-bit rate systems.

### MediaDeck 7000 with Integrated SATA HDD Storage

The system supports 4 channels of record or play at 50 Mbps, or less, in any combination of codec, wrapper, track count, proxy, and active transfer. As long as the bit rate is at or below 50 Mbps on every channel, any combination of the above elements is supported.

With the exception of MPEG-2, the system supports 4 channels of record or play at 100 Mbps, or less, in any combination of codec, wrapper, track count, proxy, and active transfer. With the exception of MPEG-2, as long as the bit rate is at or below 100 Mbps on every channel, any combination of the above elements is supported.

Above 50 and up to 85 Mbps, only certain combinations of play and record are supported for MPEG-2. These are:

- 4 play channels with active transfer, without restriction
- 4 record channels with proxy and active transfer, self-contained formats only
- 4 channels mixed play and record (1+3, 2+2, 3+1) are restricted to self-contained wrappers without proxy, and without play-while-record.

Regardless of bit rate and wrapper type, no more than 2 channels may be playing offspeed (that is, other than normal 1x forward) simultaneously.

If your MediaDeck 7000 channel requirements are not specified by the cases described above, contact your Harmonic Systems Engineer, prior to ordering the equipment. Harmonic will perform an analysis based on your

requested operational parameters and will either approve the configuration as requested or specify the changes required to bring the system into compliance with MediaDeck 7000 system specifications.

## MediaDeck 7000 with Integrated SSD Storage

MediaDeck 7000 SSD high-performance solid-state drives support the following numbers of channels of video record or play up to the bitrates noted, without restrictions:

- 4 channels with 100 Mbps content
- 3 channels with 120 Mbps content
- 2 channels with 145 Mbps content

MediaDeck 7000 SSD supports 1 seat of EIP.

## MediaCenter Configuration Guidelines

Spectrum MediaCenter supports 12 channels of record or play at 50 Mbps or less, or 6 channels of record or play at 51-100 Mbps. This is supported for any combination of codec, wrapper and proxy.

When using Final Cut Pro on a MediaCenter with SATA hard disk drives, the following configuration is supported:

- 12 active transfers OR two seats of Final Cut Pro with 50 Mbps media or lower
- Final Cut Pro with > 50 Mbps media is not supported
- Audio limit of eight channels in no more than eight files

When using Final Cut Pro on a MediaCenter with solid-state drives, the following configuration is supported:

- 12 active transfers
- Two seats of Final Cut Pro with 100 Mbps media or lower
- Audio limit of 16 channels, in up to 16 files

It is recommended that a different MediaCenter Ethernet interface be used for each Final Cut Pro instance.

If you have questions regarding these configuration guidelines, contact your Harmonic Systems Engineer prior to ordering the equipment. Harmonic will perform an analysis based on your requested operational parameters and will either approve the configuration as requested or specify the changes required to bring the system into compliance with MediaCenter system specifications.

## Known Issues

### Known Issues Related to MediaDeck 7000

The following table details significant known issues for this release.



Synopsis	Description
Update firmware before installing a ChannelPort module in MediaDeck 7000	Harmonic recommends that you upgrade your Spectrum MediaDeck 7000 to firmware version 7.3.0.0 before you install a ChannelPort module running firmware version 7.3.0.0. If you install a ChannelPort in a MediaDeck 7000 running an earlier version, the ChannelPort may not start. Follow the instructions in “Upgrading Spectrum MediaDeck 7000 Firmware” in the <i>Spectrum MediaDeck 7000 User Guide</i> to update your MediaDeck.

## Known Issues Related to the MediaDirector 2201/2202, 2251/2252, and the MediaCenter

The following table details significant known issues for this release.

Synopsis	Description
MediaDirector 2201 rev D and MediaDirector 2202 rev F QRGs contains incorrect information about Fibre Channel Limited Use LEDs	<p>For the Hardware State of the Limited Use LEDs, rev D and rev F state: “Missing Cable in SFP or FC Loop is unused and disabled.”</p> <p>The corrected rev E and rev G state: “Missing Cable in SFP or FC Loop is unused and enabled.”</p> <p>(VSG-9257)</p>
MediaCenter QRG rev B contains incorrect numbering on the disk drives	<p>Rev B of the MediaCenter QRG has the numbering of the disk drives as 0 – 11.</p> <p>Corrected rev C has the numbering of the disk drives as 1 – 12.</p>
FTP transfers from MediaDirector to MediaGrid need custom timeouts for open and status requests	<p>When the FTP server on a MediaDirector is used to transfer clips to a MediaGrid, the default timeout for file open and status requests may be too short for some installations. Due to network congestion or system utilization, these requests cannot be handled in the 750 ms default time, and the transfer may timeout.</p> <p>Workaround:</p> <ol style="list-style-type: none"> <li>1. On the file system for the MediaDirector, in the /opt/omneon/config directory, open the ftp-local file.</li> <li>2. In the ftp-local file, enter the variable “MGCONND_OPEN_TIMEOUT”=&lt;custom value&gt;.</li> <li>3. Enter a new timeout value as the custom value.</li> <li>4. Restart the FTP service.</li> </ol> <p>(VSG-9131)</p>



Synopsis	Description
MediaCenter QRG Rev A contains incorrect information about disk drive status LEDs	<p>Rev A of the MediaCenter Quick Reference Guide contains incorrect information about the red Status LEDs on the disk drives.</p> <ul style="list-style-type: none"> <li>Rev A states: <ul style="list-style-type: none"> <li>Rapid blink (4 per second): Drive has failed</li> <li>Slow blink (1 per second): Drive is being winked.</li> </ul> </li> <li>Corrected Rev B states: <ul style="list-style-type: none"> <li>Blink: Drive failure or is being winked</li> </ul> </li> </ul> <p>(VSG-6458)</p>
MediaDirectors with mixed firmware versions sharing a file system can cause file system corruption	<p>Since Release 6.3.0.0, MediaDirectors on an EFS need to run the same firmware revision or risk file system corruption. To avoid corruption when upgrading MediaDirectors on an EFS, first stop the file system on all MediaDirectors, then upgrade all MediaDirectors at the same time. Once upgrades are complete on all MediaDirectors, restart the file system on each MediaDirector.</p> <p>(VID-5691)</p>
Windows 2008 Server Active Directory is unsupported	<p>Windows 2008 Server Active Directory is unsupported to perform MediaDirector 2201/2, 2251/2, and MediaCenter authentication against a MediaGrid. Use Windows 2003 Server Active Directory instead.</p>
Erroneous messages in the MediaDirector 2201/2 and MediaCenter logs about MediaGrid file deletions	<p>When performing FTP-based active transfers on a MediaDirector 2201/2 or MediaCenter, there may be warning/error messages in the logs indicating that a file on the MediaGrid could not be deleted. The file does get deleted; the messages should be ignored.</p> <p>(VID-5037, VSG-4593)</p>
False error reported for MediaDirector 2201/2	<p>SystemManager may occasionally report a Cache Parity Error for a MediaDirector 2201/ 2. This is always a false positive for a MediaDirector 2201/2, as this error is specific to hardware found only in MediaDirector 2100, 2101, 2102 and 2102B. This error can be ignored when reported by MediaDirector 2201/2.</p> <p>(VID-4714, FI-3322, FI-3860, VSG-4312)</p>
Timecode from MediaCenter and MediaDirector 2202/2201 overrides VITC from MediaPort	<p>If a LTC timecode source is connected to a MediaCenter or MediaDirector, the MediaCenter/MediaDirector automatically uses that as the timecode source for any attached player. This overrides the reference VITC from the MediaPort for purposes of automation. However, if the attached player is configured with a different frame rate than that of the LTC input, then its reference will not be overridden. For example, a LTC input with a frame rate of 25 Hz will not override the reference for a player configured with a frame rate of 29.97 Hz. (VID-3432)</p>

Synopsis	Description
Use MediaPort Ethernet Array on MediaCenter and MediaDirector 2202/2201 for MediaPorts only	Do not attempt to use the MediaPort Ethernet Array interfaces on a MediaDirector 2201/2, 2251/2, or MediaCenter for any purpose other than MediaPort connectivity. Connecting these interfaces to a public network may cause network disruptions.
MirrorTool and TransferTool are not supported on the MediaDirector 2202/2201 or MediaCenter	Harmonic does not support the use of MirrorTool or TransferTool on the MediaDirector 2201/2, 2251/2, the MediaDeck 7000, or the MediaCenter.
Cable reconnect on MediaDirector 2202/2201 may cause loop disruption	When connecting a Fibre Channel cable to a "live" loop (that is, one that has not been disabled on all MediaDirectors in the system) in a MediaDirector 22x1/22x2 system, connect the cable to the connector in a smooth, single motion. If the cable does not make a complete connection in the first instance, there may be intermittent signal presence and loss that will cause a significant disruption on that Fibre Channel loop. (VID-3312)
Recording QuickTime self-contained, while using several Players, may result in a corrupted clip	In some cases, using the MediaDirector 22x1/22x2 and MediaPort 5321 to record a QuickTime self-contained MPEG-2 50Mbps Long GOP clip, while simultaneously playing or recording with 20 or more players, may result in a corrupted clip. (VID-3131)

## Known Issues Related to ChannelPort

The following table details significant known issues for this release.

Synopsis	Description
PreviewTool sometimes fails to refresh clip and template inventory when switching between multiple connections	<p>If you have multiple connections configured with PreviewTool, and you rapidly switch between the connections, PreviewTool may appear to get "stuck" on a connection.</p> <p>If this happens, the clip and template inventory lists will be empty, and the refresh button will be red, indicating an error in fetching inventory. Clicking the Refresh button will fail without refreshing the inventory.</p> <p>Workaround: When changing connections, wait for a connection to complete refreshing its inventory before switching to the other connection. If PreviewTool appears to be "stuck" on a connection, switch to a different connection and wait for the inventory to refresh. (VSG-7322)</p>

Synopsis	Description																																				
The ChannelPort Module QRG rev B contains incorrect information in the GPIO/RS-422 Signals table	<div>Rev B states:</div> <table><tr><th>Function</th><th>RX (-/+)</th><th>TX (-/+)</th></tr><tr><td>Serial 1</td><td>2-3</td><td>10.-11</td></tr><tr><td>Serial 2</td><td>4-5</td><td>12-13</td></tr><tr><td>Serial 3</td><td>6-7</td><td>14-15</td></tr><tr><td>Serial 4</td><td>8-9</td><td>16-17</td></tr><tr><td>Ground</td><td colspan="2">1</td></tr></table> <div>The corrected Rev C states:</div> <table><tr><th>Function</th><th>RX (-/+)</th><th>TX (-/+)</th></tr><tr><td>Serial 0</td><td>2-3</td><td>10-11</td></tr><tr><td>Serial 1</td><td>6-7</td><td>14-15</td></tr><tr><td>Serial 2</td><td>4-5</td><td>12-13</td></tr><tr><td>Serial 3</td><td>8-9</td><td>16-17</td></tr><tr><td>Ground</td><td colspan="2">1</td></tr></table>	Function	RX (-/+)	TX (-/+)	Serial 1	2-3	10.-11	Serial 2	4-5	12-13	Serial 3	6-7	14-15	Serial 4	8-9	16-17	Ground	1		Function	RX (-/+)	TX (-/+)	Serial 0	2-3	10-11	Serial 1	6-7	14-15	Serial 2	4-5	12-13	Serial 3	8-9	16-17	Ground	1	
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Ground	1																																				
PreviewTool/FXTool cannot load files named with certain characters	<div>The following characters should not be used when naming files or when creating templates to preview in PreviewTool or FXTool:</div> <div><div>■ \ or /</div><div>■ “</div><div>■ #</div><div>■ %</div></div> <div>(VSG-7310)</div>																																				
Playout Channel timecode support	The Playout Channel supports 25/29.97/50/50.94 Hz frame rates, but for 29.97/59.94 Hz only drop-frame timecodes can be used. (VSG-7478)																																				
Playout Channel settings are not changed with corresponding player settings are changed	<div>When a player on a ChannelPort is updated, System Manager does not update the configuration for the associated Playout Channel, and the Playout Channel cannot communicate with or control the player because the configurations no longer match.</div> <div>Workaround: After the updating the player in SystemManager, navigate to the Playout Channel configuration page, and click Apply, even though no updates were made to that page. (VSG-7599)</div>																																				
Do not use layer 8 for graphics if ChannelPort is configured to support an Emergency Alert System (EAS)	When a ChannelPort is configured to support an EAS, EAS templates are placed on graphics layer 8 (the highest layer) to ensure they are not obscured by other graphics. If your ChannelPort is configured to support an EAS, do not use layer 8 for other graphics.																																				
SDI audio configuration issues cause phase shifts in audio samples	<div>When devices that are connected to the SDI input of the ChannelPort do not have the same number of audio groups configured for embedded SDI audio as the ChannelPort, small phase shifts in audio samples may occur.</div> <div>Workaround: Ensure all devices that are connected to the SDI input of the ChannelPort have the same number of audio groups configured for SDI audio. (VSG-7589, VSG-7767)</div>																																				

Synopsis	Description
PreviewTool default setting of 0.01 second duration results in offset from end, not short duration clip	<p>PreviewTool allows layer settings that may not make sense for every combination of primary and secondary events. For example, certain values for “offset from start” and “offset from end” may be valid for some primary and secondary events, but for others, it may result in a secondary event that ends before it starts. Similarly, a secondary duration may be too small to express in frames for the channel's frame rate.</p> <p>When you drag a template onto the sequence timeline, if PreviewTool detects that the default settings for that layer result in meaningless start or end times for that secondary event, it will ignore the layer defaults and create a secondary event that spans the full available time.</p> <p>Workaround: Make sure the layer default configuration is compatible with the primary and secondary events being used in your workflow. When a primary duration causes the first dragged secondary for a layer to occupy an interval other than the configured default when the configured default is unrealizable for the primary duration, edit the secondary offset(s) and/or duration to acceptable values. (VSG-7424)</p>

## Known Issues Related to MediaPorts

The following table details significant known issues for this release.

Synopsis	Description
Issue with using ClipTool or ClipTool Pro to scrub audio	MediaPort 7000 features are individually licensed. If the license for a MediaPort is changed, scrub audio channel swapping can occur; tracks that should appear on channel 1-4 are played back, during scrub, on channels 5-8. The solution is to power cycle the MediaPort after the license change has been applied. (VSG-4692)
Issue playing proxy clips from a MediaPort 7000 series	When playing proxy clips created by a MediaPort 7000 series on a QuickTime Player, a green screen may be displayed. Upgrade to the latest version of the QuickTime Player to resolve this issue. (VID-5997, VSG-5331)
AVC-Intra back-to-back playback limitations on the MediaPort 7600 series	<p>Some combinations of AVC-Intra cannot be played back-to-back. Specifically, an AVC-Intra Class 50 clip cannot immediately follow an AVC-Intra Class 100 clip (and vice-versa), and an AVC-Intra 720p clip cannot immediately follow an AVC-Intra 1080i clip (and vice-versa). If these playbacks are attempted, video disruption of approximately ten reference frames will occur at the beginning of the second clip.</p> <p>The disruption consists of nine frames of black, followed by one frame of corrupted video. Clip playback then resumes normally in the new format. Playback timing is not affected; the ten frames of disruption replace the first ten frames of the second clip. The clip itself is intact and is not changed by this issue. (VID-5809, VSG-5157)</p>

Synopsis	Description
Audio Scrub feature does not work with SD Clips being played on a MediaPort 5500	The MediaPort 5500 series support playback of SD and 720p clips mixed on the same playlist. The MediaPort 5500 series also support audio scrub. When a Player is configured for 720p/5994 and an SD clips is played at an off-speed setting within the audio scrub range, the audio remains garbled instead of CD audio quality. (VID-2292, VSG-2210)
Issue with the front panel display on a MediaPort 7000 series during power cycling	When a single module is installed in a MediaPort 7000 series chassis, rebooting the module will cause the LCD and light bar on the front panel to go dark. When the module has rebooted, the LCD will resume its normal behavior/output. If two modules are installed, and both are rebooted simultaneously, the LCD on the front panel will go dark. The LCD will resume normal behavior when either module has restarted. If two modules are installed, the front panel LCD will continue to operate normally as long as one of the modules is online. (VID-4629, VSG-4233)
Issue with MediaPort 5xxx series plugged into Com ports on a MediaDirector 22x1/22x2	In some situations where MediaPort 5xxx series units are re-plugged into different com ports on a MediaDirector 22x1/22x2, the script listing the BMC addresses can list both the current and previous address. A workaround is to try both. Note that "console bmc-n" works. (VID-5070, VSG-4624)
Correct use of the MediaPort Ethernet Port Array	Use the MediaPort Ethernet Port Array to connect to MediaPorts only. Do NOT use these ports for any other purpose, including plugging directly into a network. (VID-5114, VSG-4661)
Toggling off-speed play on MediaPort 5xxx series may result in audio artifacts	In some cases, when playing back MXF material on a MediaPort 5xxx series, changing the speed to an off-speed setting (for example, -2x, 2x, or 3x), playing the content, and then changing the speed back to 0, or pausing, may result in audio artifacts, which last less than a second in duration. (VID-3206)
Issues with Audio Scrub on the MediaPort 5500 when configured for 720p	On a MediaPort 5500, when the player is configured for 720P/59.94 and an SD clip is played at an off-speed setting, within the audio scrub range the audio sounds garbled and error messages will appear. (VID-2292)
Follow upgrade procedure twice when upgrading the MediaPort 5000, 5300, and 5200 series from a pre-5.3 release version to current release	When upgrading all MediaPort 5xxx series, from a pre-5.3 software version to the current release, you must follow the MediaPort upgrade procedure, including the restart, twice for the units to be fully upgraded and function properly. (Note that it is not necessary to update other components, such as MediaDirectors or other MediaPorts, twice.) Once the MediaPort has been upgraded to the current release, further upgrades may be performed successfully by following the upgrade procedure only once. (VID-2214)

Synopsis	Description
MediaPort 5500 series requires the use of Spectrum Release 5.5 or later	MediaPort 5500 series modules are only support by Spectrum release 5.5 or later.
Upgrading the MediaPort 5300 series for improved image quality	If you purchased the MediaPort 5300 series prior to version 5.1, Harmonic recommends that you upgrade to firmware version 7.3.0.0 for the best results. Refer to “Upgrading MediaPort Firmware” for instructions.
VITC issue under certain off-speed play conditions	VITC timecode from the MediaPort does not display current time on media in reverse mode or on jumping to an arbitrary still frame. This does not affect VITC output via BVW protocol or the Omneon Player Control API.
Connect Reference for MediaPorts	When using the MediaDirector 22x1/22x2, external reference must be connected when using a MediaPort for playout, but is not required with MediaPorts used for record. For additional information regarding MediaPort timing and the MediaDirector 2201/2, 2251/2 refer to “About MediaPort Timing” in the <i>Spectrum Installation and Hardware Reference Guide</i> .
On the MediaPort 5300, recording “difficult” HD MPEG-2 Long GOP video content at 18 Mb/s may result in encoder errors	Attempting to encode MPEG-2 Long GOP video which contains difficult content, such as “strobe” or heavily flashing lights, at a bit rate of 18 Mb/s, may result in encoder errors on the MediaPort 5300 series. These errors may include video artifacts when the recorded content is played back. (VID-2055)

## Known Issues Related to Player or File Type

The following table details significant known issues for this release.

Synopsis	Description
Issue with Sony Cinemon/Smart render plugin and some MXF clips	Some MXF OP1a RDD9 clips published from Apple Final Cut Pro v. 7 with the Sony Cinemon/Smart render plugin may not be generated correctly and will show black frames on playout. Contact Harmonic Technical Support for a workaround to correct this issue. (VSG-9214)
GXF-wrapped AVC-Intra clips not supported	Spectrum systems do not support GXF-wrapped AVC-Intra clips. (VSG-9104)

Synopsis	Description
Offspeed and shuttle/jog play of GXF results in high use of disk bandwidth	Offspeed play and shuttle/jog play of GXF clips can result in high use of disk bandwidth because of the structure of a GXF file. To protect 1x playout on other players, Spectrum firmware enforces a bandwidth limit on clips like GXF and incomplete MXF files. The limit is set to a level that allows cueing to any point in the clip and playing at 1x. Workaround: Rewrap the GXF files intended for offspeed or shuttle/jog play into a file type that has an index table, such as MXF op1a. (VSG-8529)
Some non-Spectrum MXF clips do not play correctly	Some clips do not contain the necessary information about the video sample rate. The clip will play properly, but you may not be able to properly create black frames when necessary. This issue cannot be corrected by Harmonic. (VID-913)
XDCAM HD off-speed/advance play while transfer fails	If a clip is played off speed (32x) or the play head is advanced beyond the current transfer point, video will freeze or disappear entirely and error messages will appear in the system log. (VID-946)
Performance and file size issue with QuickTime recordings	The performance of QuickTime recordings may suffer and the associated file size may be unusually large when there are problems with, or interruptions in, the audio input. Although this issue was just recently discovered, it is likely the issue existed in previous releases. (VID-4125, VSG-3830)
Generic MXF files may be incorrectly identified as incomplete and stuck in scan mode	Loading actively recording MXF movies on another host in an EFS may result in a file being reported as incomplete and treated as such until the recording is complete. If this occurs, the workaround is to eject the movie from the playback Player timeline and reload. (VID-4636, FI-3924, VSG-4240)
Players unable to play QuickTime clips recorded at the maximum supported length	Spectrum players do not correctly load and play QuickTime clips at 59.94 Hz that are 5178816 frames in length (almost 24 hours). A "clip too long" message will appear. (VID-3124)
One frame difference between start timecode in MXF essence file and burned-in timecode for XDCAM HD and OP0a files	For XDCAM HD and OP0a files, the Start Timecode in the MXF essence file is one frame off from the burned-in timecode. (VID-2245)

Synopsis	Description
Error messages for incomplete MXF files	Attempting to load an incomplete MXF file can result in error messages stating that the file length is either too long or too short. These messages can be safely ignored. (VID-2261)
Error messages when using the IRT MXF Analyzer	<p>For MXF clips containing AES3 audio recorded with Spectrum firmware preceding release 5.3, an IRT MXF Analyzer older than version 1.7.0.79 produces the following error message:</p> <pre>1590 Error: The correct value for property Quantization bits is 16 and not 24 as encoded in the file.</pre> <p>For MXF clips containing AES3 audio recorded with Spectrum firmware release 5.3, an IRT MXF Analyzer older than version 1.7.0.79 produces the following error message:</p> <pre>1590 Error: The correct value for property Quantization bits is 20 and not 24 as encoded in the file.</pre> <p>For MXF clips containing AES3 audio recorded with any version of Spectrum firmware, the IRT MXF Analyzer version 1.7.0.79 and later produce an informational message indicating that the MXF Quantization Bits property exceeds that encoded in the file. These error messages can be safely ignored. (VID-2215)</p>
Descriptive metadata cannot be set in some MXF IF50 clips	In certain circumstances, the descriptive metadata cannot be set for MXF IF50 clips. (VID-2188)
Index Start Position in some OP1a eVTR clips may result in audio defects	In certain Spectrum-generated OP1a eVTR clips, the Index Start Position item may incorrectly appear in a material package when it should only appear in an index table segment. As a result, when played back, these clips may contain audio defects such as “popping” or “fuzzy” noise. (VID-2143)
Incorrect I-Frame movie length reported	The Media API may incorrectly report the length of an I-Frame movie that has more than one clip per track. (VID-1519)



Synopsis	Description
Note on MXF clips	<p>With an eVTR Op1a wrapper, IMX 50 4:2:2 accompanied by 8 channels of 24-bit AES3 audio is supported. While the SystemManager will allow the creation of an IMX 30, 40, or 50-only recorder (that is, no audio), you will not be able to record MXF with a video-only player. When creating MXF recorders you must specify one MPEG track configured for IMX 50 4:2:2 and one audio track with 8 channels of 24-bit AES3 audio.</p> <p>MXF, GXF, and QuickTime clip names are distinguished by extensions (.mxf, .gxf, and .mov); however, many applications refer to clips without extensions. Therefore, mixing clips of the same name but different extensions (for example, foo.mxf and foo.mov) in the same directory will lead to unpredictable results.</p> <p>QuickTime players cannot playback 24-bit AES3 MXF audio. If you intend to operate your system using both QT and MXF files, you should change all players to MXF including playback players. MXF playback players allow the playback of both MXF and QuickTime audio.</p>

## Known Issues Related to the Media API

The following table details significant known issues for this release.

Synopsis	Description
Recommendations regarding resource management in the Media API	<p>All Media API usage should be prefaced with a call to <code>omMediaInit()</code>, and followed by a call to <code>omMediaShutdown()</code>. A call to <code>omMediaInit()</code>, ensures that resources have been initialized. A call to <code>omMediaShutdown()</code> ensures that those resources have been released, allowing the application to exit safely.</p> <p>Calls to <code>omMediaInit()</code> and <code>omMediaShutdown()</code> are thread-safe, and may be intermingled. An internal reference counter ensures that resources are not released until the final <code>omMediaShutdown()</code>. Note that DLL unloading will still leak memory. (VID-5612, VID-4557)</p>
Media API does not understand newer AIFF files	<p>Spectrum Firmware and the Spectrum Media API do not handle all AIFF chunk types. This prevents the Spectrum software from working with some types of AIFF material. There is no workaround for this issue. (VID-4969, VSG-4530)</p>

## Known Issues Related to MediaTools (Applications)

The following table details significant known issues for this release.

Synopsis	Description
Using crash record in ClipTool Pro for 24 hours creates a file which cannot be played back	A crash record of the maximum length, 24 hours, cannot be played back. During the record process, the clip somehow becomes two frames longer than allowed and cannot be played back in Clip Tool Pro 3.0. (APP-1112)
Failure to enable “Trim Audio Precharge” feature when editing a file with TrackTool may cause audio distortion	Editing a file with TrackTool without enabling the “Trim Audio Precharge” feature can result in audio distortion during playback of the edited file. (VID-2152, FI-1047)
ClipTool Pro record issue	During the record process, clips become 2 frames longer than allowed and cannot be played back in ClipTool Pro 3.1. (APP-1112)
No warning is issued when more than 96 audio channels are configured per video clip	A maximum of 96 audio channels and 48 audio tracks can be configured for a video clip. Harmonic does not recommend configuring more than 96 tracks. The Multi-Language Audio enhancement supports a workflow that manually adds audio tracks to an existing clip using TrackTool. The system can simultaneously play 48 channels of the resultant clip correctly. Note that some subsystems such as CopyClip do not process these clips correctly. (APP-1611)

## Known Issues Related to MediaStore 5000 series

The following table details significant known issues for this release.

Synopsis	Description
Quick Reference Guide does not show support for 24 600-GB drives	Revision A of the MediaStore 5000 Quick Reference Guide does not include information on the MSS-5024-06H model of the MediaStore 5000, which supports 24 600-GB drives. For details on the MediaStore 5000 series, refer to the <i>Spectrum Installation and Hardware Reference Guide</i> .

## Known Issues Related to Third Party Equipment and Material

The following table details significant known issues for this release.

Synopsis	Description
Softel onboard subtitle insertion with line conflicts can result in loss of existing subtitle information	When using the Softel onboard subtitle insertion feature, if the source clip has subtitle information on the same line you want to insert new subtitle information, the existing subtitle information, as well as the new subtitle information, will be dropped. (VSG-9305)
RDD9 support with older Sony XDCAM-HD decks	Some older Sony XDCAM-HD decks do not import RDD-9 clips created using Spectrum MediaPorts because they do not support structural metadata in the footer partition. However, most new Sony XDCAM-HD decks do support RDD-9 clips created using Spectrum. (VID-3241)
Apple Final Cut Pro may hang when exporting a sequence to Spectrum release 6.2	Apple Final Cut Pro may hang when exporting a sequence to Spectrum or MediaDeck version 6.2 if the source selectors on the left of the timeline are not set to Vid1 and AUD1/AUD2. The Finder may also hang. These hangs occur when running on Macintosh OSX 10.5.4 or 10.5.6. The workaround is to set these selectors to Vid1, Aud1 and Aud2 prior to exporting the sequence. Another option would be to not upgrade to OSX 10.5.4 or 10.5.6. (VID-2780, VID-2302)
Using KDE drag and drop copier to copy files to Spectrum system may result in files being written as "no stripe", resulting in very poor read performance	As a workaround, Harmonic recommends that you use a Windows or Macintosh computer to copy files to a Spectrum system or, if using a Unix computer, use the "cp" command from a terminal.

Synopsis	Description
<p>XDCAM-HD 4:2:2 50 Mb/s clips exported from Final Cut Pro require greater than nominal 50 Mb/s player bandwidth</p>	<p>This release adds support for recording Apple Final Cut Pro exported XDCAM-HD 4:2:2 50 Mb/s clips on MediaPort 5300, 5320, and 4000 series. The previous Spectrum release provided support for play out of such material. The supported clip formats are 1920x1080i 29.97, 1920x1080i 25, 1280x720p 59.94, and 1280x720p 50. Since clips generated by Final Cut Pro often require more bandwidth than expected, in order to play back XDCAM-HD 50 Mb/s clips exported from Final Cut Pro, Spectrum players must be set higher than the nominal 50 Mb/s. While this value will vary depending upon the clip, a value of 60 Mb/s should be sufficient.</p> <p>To record and play Final Cut Pro-exported XDCAM-HD 4:2:2 50 Mb/s clips, Harmonic recommends that you create two separate players using the Simple configuration: one player for record set at 50 Mb/s, and another player for play-out, with the bit rate set high enough to account for any variances in the exported file (60 Mb/s or above).</p> <p>For more information on creating Players, refer to “Player Configuration” in the <i>Harmonic SystemManager User Guide</i>. (VID-1869)</p>
<p>Issues with IRT MXF Analyzer Pro Version 2.2.19</p>	<p>There are a number of known issues with this analyzer which do not have workarounds at this time.</p> <p>From IRT51: (Sound element followed by S436M element)  Error: The Content Package contains a Sound Element followed by a SMPTE 436M VBI or ANC Element.  (VID-4442, VID-4455)</p> <p>From IRT9: (Audio sample rate should be 48000/1 not 25/1)  Error: The correct value for property SampleRate is 48000/1 and not 25/1 as encoded in the file.  (VID-4448)</p> <p>From IRT6:  2226 Error: No Locator could be found for external essence referenced by Track Number 402718976   0x18010100.  (VID-4447)</p> <p>From IRT3: (Invalid DV Essence Element)  212431 Error: Invalid essence element payload in Generic Container Element with Track Number 402718976   0x18010100 of Essence Container with BodySID 2. Reason: Unknown DV video type Essence analyzer: DV-DIF. Essence Container Label: 06.0e.2b.34.04.01.01.01.0d.01.03.01.02.02.01.01. Terminating essence parsing while processing edit unit number 1.  (VID-4446)</p> <p>From IRT2: (Sound descriptor quantization bits should be 16 and not 24)  3392 Error: The Sound Essence Descriptor signals that the number of quantization bits is 24, which is higher than actually required (16) as determined by parsing the essence. Note: In the case of AES3 Essence, the four most significant bits may not contain audio but auxiliary data.  (VID-4445)</p>

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	<p>From IRT11: (Incorrect bit rate)  Error: The correct value for property BitRate is 8308800 and not 9000000 as encoded in the file.  (VID-4444)</p> <p>From IRT11: (Color siting for MPEG is 255 and not 3)  Error: The correct value for property Color Siting is 255 and not 3 as encoded in the file  (VID-4443)</p> <p>Essence container not identified as Data Essence Coding  The RP224 value 06.0e.2b.34.04.01.01.07.0d.01.13.01.01.04.01.00 of "Essence Container" does not identify a data essence coding.  (VID-4231, VSG-3912)</p> <p>From IRT1: (Invalid BER Length value of 6 for Wave Clip Wrapped Essence Element with KLV Key value of 06.0e.2b.34.01.02.01.01.0d.01.03.01.16.01.02.00)  Error: Invalid BER Length value of 6 for Wave Clip Wrapped Essence Element with KLV Key value of 06.0e.2b.34.01.02.01.01.0d.01.03.01.16.01.02.00  (VID-4450)</p> <p>From IRT4: (Edit Boundary is not aligned)  135649 Error: The edit boundary is not aligned with the frame-wrapped Generic Container element KLV value boundary. The edit unit number 1 ends 19212 bytes after the KLV packet boundary. Essence analyzer: PCM Audio. Essence Container Label: 06.0e.2b.34.04.01.01.01.0d.01.03.01.02.06.01.00. The SampleRate of 30000/1001 is a integer multiple of the EditRate of the Package of 30000/1001. Therefore, edit units must be aligned with KLV boundaries in the case of a frame wrapped Generic Container. Note: This is reported only once for each element of a Generic Container.  (VID-4453, VSG-5803)</p> <p>From IRT4: (Zero sized generic container size)  265329 Error: The size of this Generic Container Element of 0 differs from the size of the previous Element of 9600. Note: This is reported only once for each element of a Generic Container.  (VID-4454, VSG-5804)</p> <p>From IRT51:  Error: The Content Package contains a Sound Element followed by a SMPTE 436M VBI or ANC Element  (VID-4455, VSG-5805)</p> <p>From IRT51:  15493 Error: Invalid essence element payload in Generic Container Element with Track Number 352388352   0x15010500 of Essence Container with BodySID 2. Reason: avcHeaders_.sequenceParameterSet.get () != 0: File contains a VCL</p>

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	<p>NAL unit without a previous Sequence Parameter Set. Essence analyzer: MPEG AVC Video. Essence Container Label: 06.0e.2b.34.04.01.01.01.0d.01.03.01.02.10.61.01. Terminating essence parsing while processing edit unit number 1. (VID-4456, VSG-5806)</p>