Living Image®

Release Notes
Version 4.7.2

1. Purpose

This document provides a brief overview of new features and improvements in Living Image 4.7.2. This release adds acquisition support for IVIS Lumina Series III and IVIS Spectrum instruments on instrument controllers running Windows 10 64-bit. The Living Image 4.7.2 release also provides improvements to existing software features and bug fixes.

2. New Features

Windows 10 Support for Acquisition on more IVIS Instruments

The 64-bit version of Windows 10 is now fully supported for acquisition using the following instrument models:

- Lumina Series III LT
- Lumina Series III
- Lumina Series III XRMS
- Lumina S5
- Lumina X5
- Spectrum

3. Other Improvements

Fixes to reported issues

- Living Image will always run using administrative credentials.
- Resolved an issue that could cause one or both of the NIDAQ devices on IVIS Spectrum to not be recognized at application startup.
- The "Load" button on Lumina X5 moves the shelf to the bottom of the door opening.
- Filters selected from the Filter Configuration dialog are updated in the sequence setup table when setting up a sequence for Planar Spectral Imaging or Spectral Unmixing.

- "Large Animal" is excluded from the list of Imaging Subjects in the Image Wizard except on IVISes with X-ray imaging capabilities.
- Opening certain sequence setup files that include X-ray images is safe to do before initializing the IVIS instrument.
- Resolved multiple issues with pausing and stopping acquisitions.
- When aborting a sequence on a Lumina Series III XRMS that includes X-ray images, the scintillator is moved out of the way as part of the "Abort" sequence.
- When setting the time for the auto-background service to run, leading zeros in the minutes or hours fields are properly ignored.
- Running the overnight auto-background will not cause Living Image to exit if it has been left open at the end of the day.

Users of Lumina Series III and Spectrum instruments should see the release notes for Living Image 4.7.0 and 4.7.1 for fixes that were implemented in those releases but that were only available to Lumina S5 and Lumina X5 users.

4. Known Issues

Must change security settings on Windows 10 to open data using drag-and-drop

Living Image supports opening sequences by dragging and dropping a sequence folder onto the application. Because Living Image must run using administrative credentials and the Windows Explorer does not do so, Windows 10 prevents this feature from working unless the local security policy is changed. To enable this feature in Living Image, disable the local security policy “User Account Control: Admin Approval Mode for the Built-in Administrator account.” Contact your local IT support personnel for help making this change.

USB devices can temporarily interfere with instrument communication

If a USB thumb drive or other USB device is inserted or ejected from the controller after the instrument has been initialized, a warning may appear in the activity window indicating that a USBIO problem occurred, e.g. the stage temperature could not be read. This is a transient warning that should not affect normal operation of the instrument.

Quantum/ Spectrum co-registration with carbon bed

Registration of a Quantum µCT image with the structured light surface from an IVIS Spectrum is facilitated by a hardware bed with a custom designed fiducial. In some cases, unexpected deflection in the hardware bed makes it algorithmically challenging to detect the fiducial. A modified hardware bed is available upon request.

Access to network locations on Windows 8

Living Image requires administrative privileges to run on Windows, which can cause conflicts with User Account Control (UAC) when accessing network resources on Windows 8. Drive letters that correspond to network locations will not be visible to Living Image when it is run as an administrator. To access

network locations from within Living Image, specify the UNC path to that location instead of using the mapped drive letter. For more information, see https://support.microsoft.com/en-us/kb/937624.

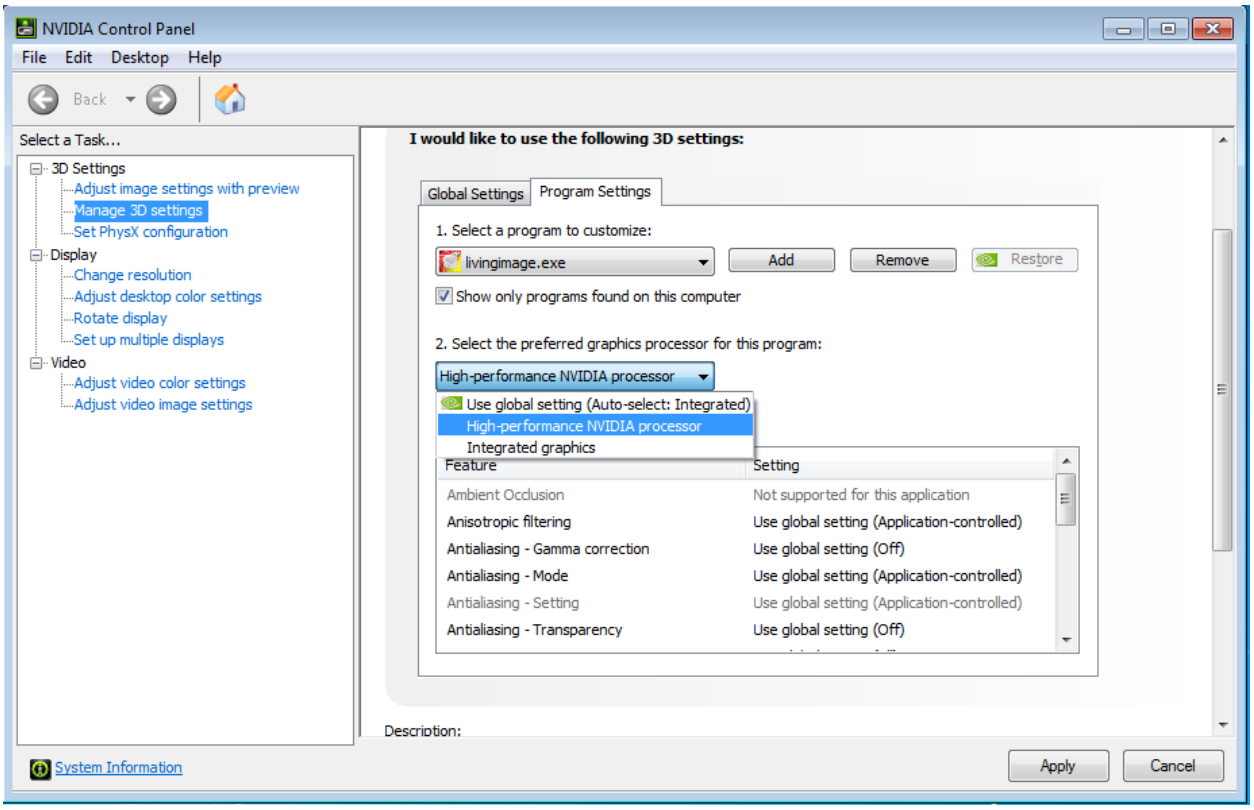
Windows 8/10 on high DPI displays

On "high DPI" displays, that is, displays with better than 96 dpi, Windows 8 and Windows 10 will default to scaling buttons and other UI elements to make them larger. This can cause display problems with certain parts of Living Image, such as the tool palette. To avoid these problems, click the Control Panel link to "Make text and other items larger or smaller" and then set the scaling to "Smaller – 100%" on Windows 8 or move the slider all the way to the left to the "smaller" setting on Windows 8.1. After changing that setting, you will need to log out of the computer and log back in for the changes to take effect.

On Windows 10, in the "Display" Settings panel, set the value of the "Change the size of text, apps, and other items" slider to 100%. After changing that setting, you may need to log out of the computer and log back in for the changes to take effect.

3D settings on computers with dual graphic cards

If your computer (mostly laptops) is equipped with dual graphic cards, please follow the next figure to default the high-performance graphics card for the Living Image software. Otherwise, Living Image 3D viewer, especially with the 3D Multi-Modality tool, may not function correctly when running on low-end integrated graphics hardware. The image below shows an example of a laptop with both Intel integrated graphics and NVIDIA graphics. Open the NVIDIA control panel and click on "Manage 3D settings." In the "Program Settings" tab, add the Living Image executable (livingimage.exe) as the program to customize and then set the preferred graphics processor to "High-performance NVIDIA processor."



5. Analysis PC System Requirements

PC:

Windows 7 32-bit

2GHz Core 2 Duo or higher processor recommended
4GB RAM

Windows 7/8/10 64-bit

2GHz Quad Core (i5, i7) processor
8GB RAM recommended for IVIS Spectrum CT data analysis

Mac:

OS X/macOS* 10.10 to 10.12

2GHz Core 2 Duo or higher processor recommended
4GB RAM or higher recommended for IVIS Spectrum CT data analysis

Note: Support for Mac OS X 10.9 and earlier has been discontinued in Living Image 4.7. MacOS 10.13 is not yet fully supported in Living Image 4.7.

* OS X/macOS is supported for the analysis module only. A Mac computer equipped with an ATI Radeon video card or certain Intel Iris Graphics chipsets is required for 3D Multi-Modality support on OS X.

6. Video Card Requirements

3D Multi-Modality tools require that the graphics processing unit (GPU) meet the minimum specifications shown below. If the appropriate license is not installed or the GPU does not meet these specifications, the 3D Multi-Modality tools will not appear in the tool palette.

Specification	Description
OpenGL Version Requirement*	OpenGL 2.0 and above
OpenGL Extension Requirement*	GL-EXT-Texture3D
Graphics Card Memory:	Recommended: 1GB (Dedicated)
Consumer Graphics Cards (Desktop/ Mobile, Windows/Mac)	Supported: – NVIDIA® GeForce® 8 Series and above (8, 9, 100, 200, 300 and 400 series) – ATI Radeon™ HD 4000 Series and above (4000 and 5000 series) – Intel HD 3000 and above and Intel Iris/Iris Pro Graphics (Mac) Recommended: – Desktop - NVIDIA GeForce GT 240 and above – Mobile - NVIDIA GeForce GT 230M and above
Workstation Graphics Cards (Desktop/ Mobile, Windows/Mac)	Supported: – NVIDIA® Quadro® NVS Series and Above (NVS & FX series) – ATI FireGL™ V5600 and Above (FireGL, FirePro & CrossFire series) Recommended: – Desktop - Quadro FX 1800 and above – Mobile - Quadro FX 880M and above

*If these specifications are not met, the 3D Multi-Modality tools will not appear in the tool palette.