Aperio GT 450

Release 1.4 Notes & News

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Aperio GT 450 Release 1.4 Notes & News

This document applies to Aperio GT 450 Controller, Aperio GT 450 Console, and Aperio GT 450 SAM versions 1.4 and later.

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Contact Information – Leica Biosystems Imaging, Inc.

Headquarters	Customer Support
Leica Biosystems Imaging, Inc. 1360 Park Center Drive Vista, CA 92081 USA Tel: +1 (866) 478-4111 (toll free) Direct International Tel: +1 (760) 539-1100	Contact your local support representative with any query and service request. https://www.leicabiosystems.com/contact-us/

Importers	
Leica Biosystems Deutschland GmbH Heidelberger Straße 17-19 69226 Nussloch, Germany	Leica Microsystems (UK) Limited Larch House, Woodlands Business Park Milton Keynes, England, United Kingdom, MK14 6FG

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Revision History

Rev.	Issued	Sections Affected	Detail
A	November 2024	All	New document for Aperio GT 450 Release 1.4.

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Contents

1 Aperio GT 450 Release 1.4

This document summarizes the updates for the Aperio GT 450 Release 1.4, including new features and defect fixes. For further details and instructions on using the new features, refer to the *Aperio GT 450 User's Guide* and the *Aperio GT 450 IT Manager and Lab Administrator Guide*.

Aperio GT 450 Release 1.4 new features

This section provides information on the improvements made to the Aperio GT 450 in the 1.4 release.

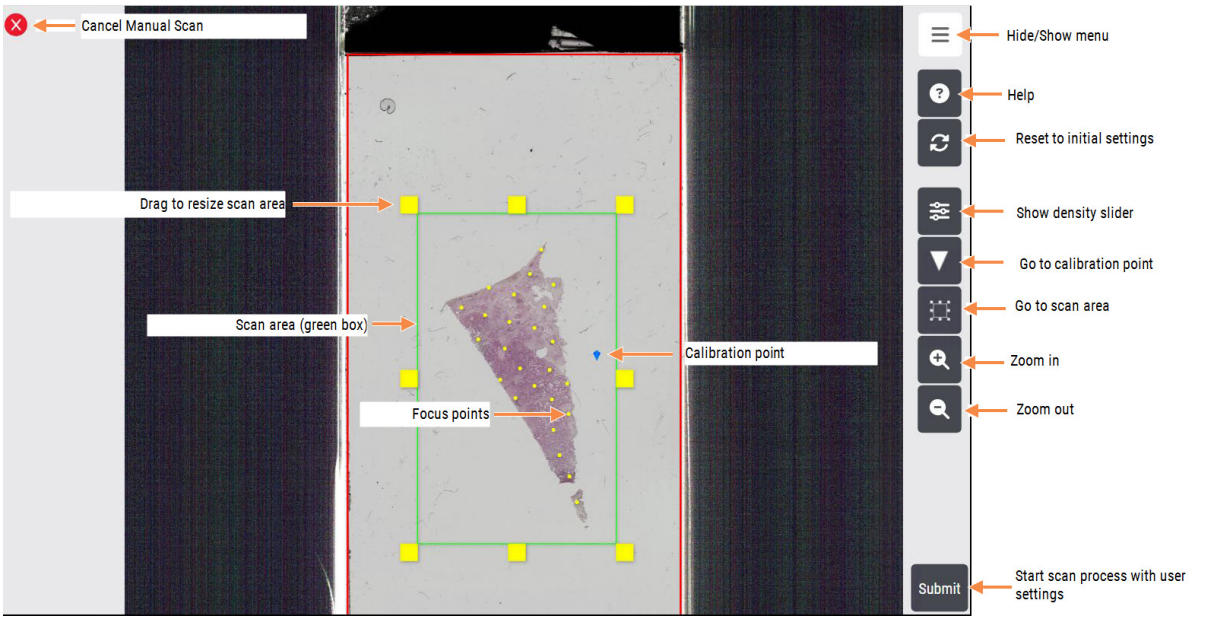
Manual scanning

If a scanned image has certain image quality issues, sometimes the best resolution is to re-scan the slide using a manual process. The optional Manual Scan feature enables you to manually adjust the scan settings using the macro image from the automated scan, and then re-scan a single slide without removing the slide from the scanner.

You access the Manual Scan settings from the Slide View, which shows the macro image from the automated scan. The Manual Scan feature enables you to:

- Adjust the bounding box that defines the scan area.
- Add or remove focus points.
- Verify that the calibration point is positioned correctly, and re-position it if needed.
- Zoom into the macro image of the slide to access potential problem areas.

The example below shows the features of the Manual Scan user interface.



For more information about using the Manual Scan feature, including step-by-step instructions, refer to your *Aperio GT 450 User's Guide*.

Extended Focus scanning

The optional Extended Focus feature enables you to scan a slide to generate a single composite image with optimized focus and a greater depth of field than an image of a scanned single layer or any single layer in a set of z-stack images.

The Extended Focus process uses scanned z-stack layers to achieve optimal focus on the entire depth of the tissue. The Extended Focus process identifies the optimally focused areas across the z-stack layers and fuses those layers into a single, composite image. This feature is particularly useful in applications where it is preferable to view all cells in focus in a single-layer image.

For each scanner in Aperio GT 450 SAM, your Lab Administrator sets the default number of layers and the distance between layers (in microns) that are used for z-stack and extended focus scanning. You can adjust these settings on the scanner console for each rack of slides you scan using the Extended Focus feature.

An extended focus image has a smaller file size than the set of z-stack images from which it is generated. This smaller file size helps increase file transfer speed during collaborative activities, and also requires less storage space.

The single composite image file can be compatible in external image analysis software algorithms when a set of z-stack layers might not be.

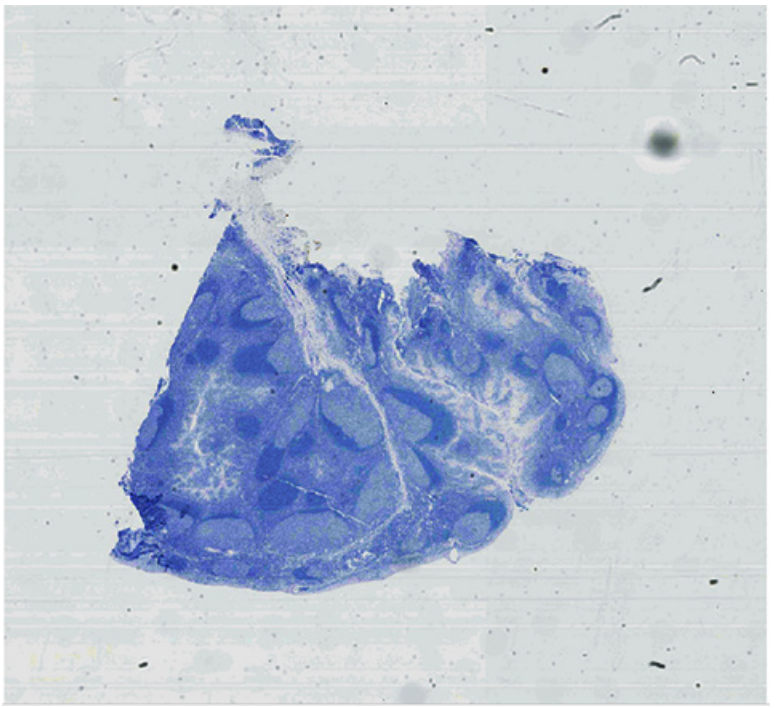
Similar to the Z-Stack feature, you set Extended Focus for an entire rack of slides. If your scanner supports both Z-Stack and Extended Focus scanning, you have the option of selecting the image output as a z-stack image, and extended focus image, or both a z-stack and extended focus image.

To use the Extended Focus feature, you must have the Extended Focus option installed on your scanner.

For more information about Extended Focus scanning, including step-by-step instructions, refer to your *Aperio GT 450 User's Guide*.

Default Calibration Point

As part of the scanning process, the scanner places a calibration point on a clean area of the glass slide, and then takes a “pre-scan” picture of that area. The resulting pre-scan image is used for white balance and illumination correction. If a slide does not contain an area clean enough to take a high-quality pre-scan, repetitive white striping may appear on the final scanned image, as shown in the example below.



Certain tissue types are more prone to this issue, because there is not enough clear space on the slide. Additionally, artifacts introduced by improper tissue processing, such as microscopic contamination, micro water droplets, or micro air bubbles, can also cause white striping to occur. If your organization experiences frequent white striping on your scanned images, you can enable the Default Calibration Point feature. When the Default Calibration Point is enabled, the scanner checks the quality of the pre-scan during the scan workflow, and if necessary, replaces it with a higher quality default pre-scan that was created specifically for your particular scanner.

Your site’s Lab Administrator enables the Default Calibration Point option on the Aperio GT 450 SAM for the specific scanner. For more details on enabling Default Calibration Point, refer to your *Aperio GT 450 IT Manager and Lab Administrator Guide*.

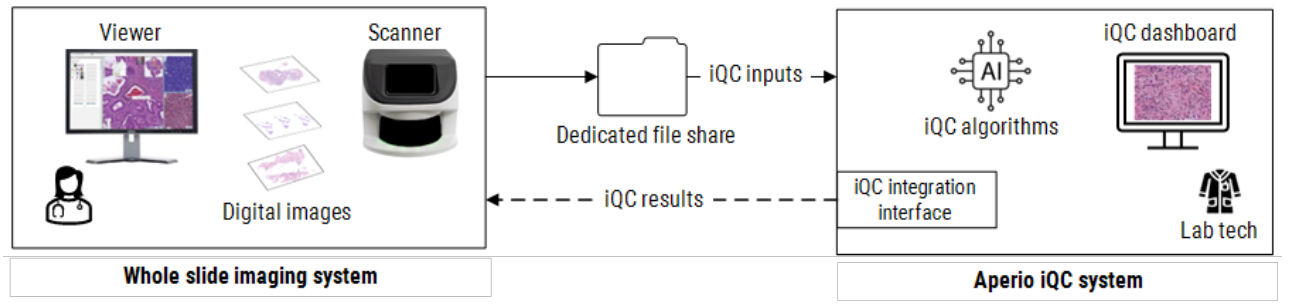
Aperio iQC Software Module

The new Aperio iQC Software Module is a standalone software application intended to assist in identifying artifacts in whole slide images (WSIs) produced by the Aperio GT 450 Scanner. It is sold separately from the scanner and is installed on the customer’s server. The Aperio iQC Software Module analyzes copies of WSIs of hematoxylin and eosin (H&E) and immunohistochemistry (IHC) stained slides in SVS and DICOM formats.

When Aperio iQC Software Module is running, copies of WSIs from connected Aperio GT 450 Scanners are automatically analyzed. The WSIs, along with the artifact detection results, are displayed on the iQC dashboard for laboratory staff review and disposition. The user can accept or reject the Aperio iQC Module results and add comments for each scan.

To analyze images, Aperio iQC Module algorithms use static AI. The Aperio iQC Software Module is executed on copies of the original images. The Aperio iQC Software Module does not modify those images.

The following diagram shows how the Aperio iQC Software Module works with your Aperio GT 450 scanner.



If the Aperio iQC Software Module software identifies any specified artifacts on the scanned image, the rack status indicates an error and a message appears within the Slide View on the Aperio GT 450 scanner's console, as shown in the example below:

Your IT Administrator sets up the communication between your Aperio GT 450 scanner and the Aperio iQC Software Module. For more details, see the *Aperio GT 450 IT Manager and Lab Administrator Guide and the Aperio iQC Software Module IT Administrator's Guide*.

For instructions on using the Aperio iQC Software Module, see your *Aperio iQC Software Module User's Guide*.

DICOM upgrade compatibility

Prior to Aperio GT 450 Release 1.4, the optional DICOM feature pack was not compatible with 20x magnification scanning, Z-Stack scanning, or Auto Narrow Stripe scanning features. With Aperio GT 450 Release 1.4, the DICOM upgrade is now compatible with these features.

New and Revised User Documentation for this Release

The following new or revised user manuals apply Aperio GT 450 Release 1.4.

- *Aperio GT 450 User's Guide, Revision G*
- *Aperio GT 450 Quick Reference Guide, Revision D*
- *Aperio GT 450 Specifications, Revision L*
- *Aperio GT 450 IT Manager and Lab Administrator Guide, Revision F*
- *Aperio GT 450 Documentation Map, Revision A*
- *Aperio DICOM Conformance Statement, Revision G*

Defects Corrected in this Release

There were no defects corrected as part of Aperio GT 450 Release 1.4.

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