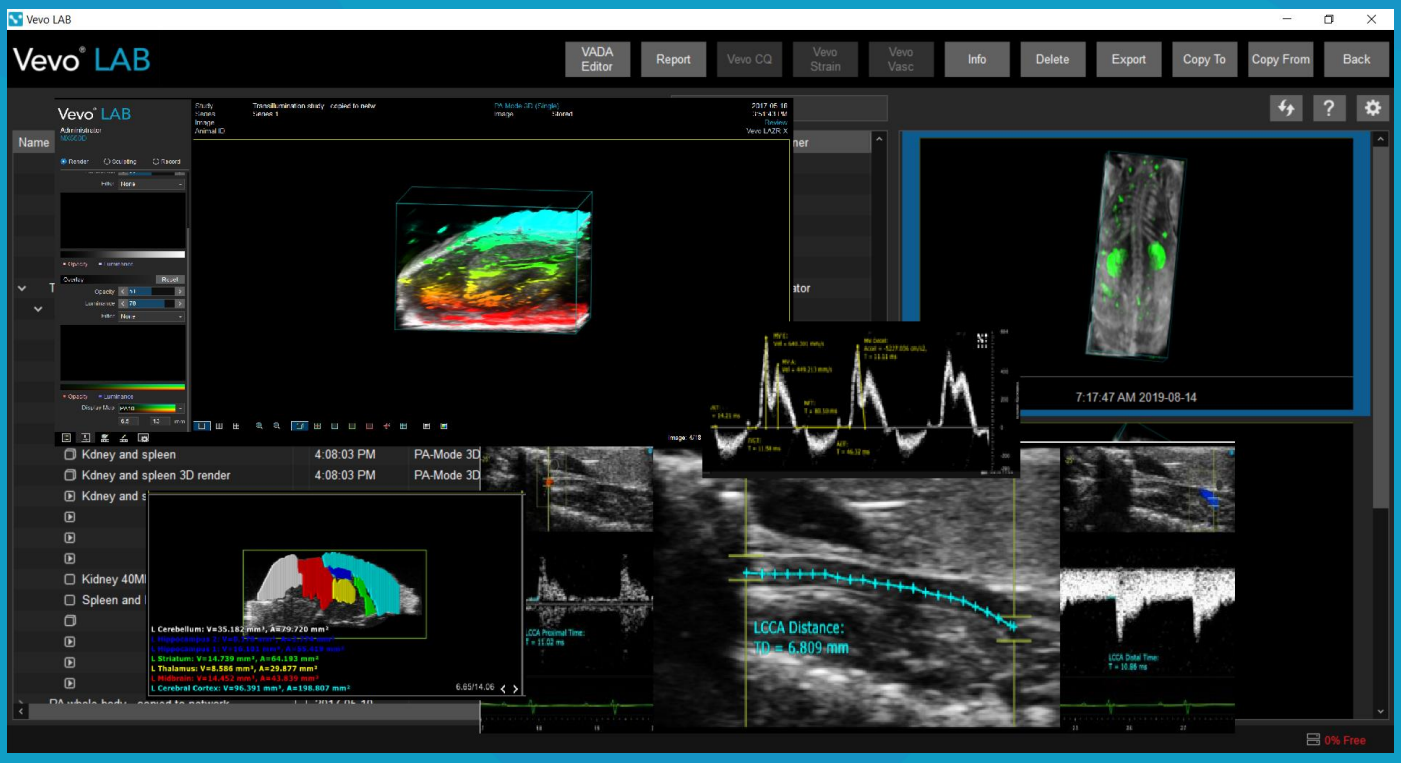
FUJIFILM | VISUALSONICS

Release Notes

Vevo® LAB Software V5.8.0



Vevo® LAB

FUJIFILM Value from Innovation | VISUALSONICS

3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

PLEASE REVIEW THE FOLLOWING BEFORE UPGRADING YOUR SOFTWARE

New Software Architecture

A new software architecture was introduced several Vevo LAB software versions ago (Vevo LAB V5.5.0). As a result of the many changes that had taken place, study data that are modified with current versions of Vevo LAB will not be accessible with any older (legacy) versions (prior to V5.5.0).

If you are planning on sharing study data, please ensure that all installations of Vevo LAB are updated to this latest version. This will avoid issues with modified data becoming inaccessible.

Support For Previous Software Versions

Software versions prior to 5.5.0 are no longer officially supported.

In order to benefit from continual stability, function, and user experience improvements, we recommend that all Vevo LAB installations be upgraded to the latest software as it becomes available.

Support For Windows Operating Systems

Windows 8.1 is no longer supported for Vevo LAB. This version of Vevo LAB has been fully tested on Windows 10 and Windows 11 (64-bit only).

Vevo Strain, Vevo Vasc, and AutoLV Analysis Of Low Frequency Images

The Vevo Strain, Vevo Vasc, and AutoLV analysis packages have not yet been fully tested with images from the low-frequency (i.e. L38xp, P10xp, P11-3 and P5-1) transducers.

FUJIFILM Value from Innovation | VISUALSONICS

3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

Release Notes:
Vevo® LAB Workstation Software V5.8.0

VisualSonics develops the Vevo LAB Workstation Software as a unified post-acquisition data management and analysis environment for images acquired with Vevo Imaging Systems. Data from the following systems are currently supported by Vevo LAB:

Vevo F2	Vevo 3100	Vevo LAZR-X	Vevo 3100 LT
Vevo 2100	Vevo LAZR	Vevo 1100	Vevo F2 LT

Vevo LAB contains a comprehensive suite of measurements and calculations for assessing the anatomy and physiology of animals typically utilized in pre-clinical research. Online help is built into the application, as are pre-defined labels, calculation formulae, imaging guides, and application notes which detail specific usage across many areas of research. A number of powerful add-on options are available which extend both the depth and breadth of data analysis possibilities.

This latest release of Vevo LAB continues to build on and refine existing features. We appreciate your investment in the Vevo technology, and we wish to continue to enhance your pre-clinical imaging experience by providing the tools you need to further your research.

We strongly recommend that all Vevo LAB installations, regardless of their available options and typical usage patterns, be upgraded to this latest release.

Selected Highlights in This Release

Oncology Measurement Package

A new Oncology measurement package has been added, which will allow users to obtain tumor volume estimates from 2D B-Mode images or clips. By placing three linear measurements across two B-Mode images, the software will automatically calculate the tumor volume and display in the report.

Note: the Oncology measurement package will only be available for use on data collected using the Vevo F2 and Vevo F2 LT Oncology systems.

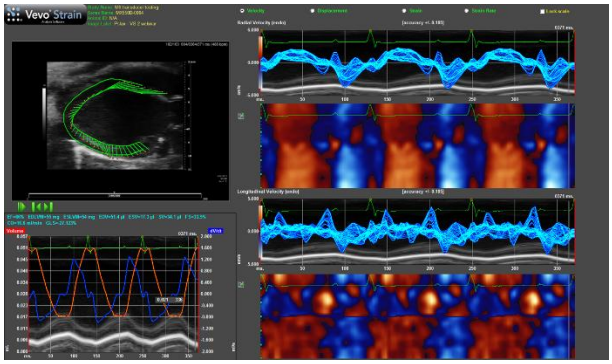
Pulsed Wave Velocity (PWV) Measurement Tool – Bug Fixes

Issues impacting user workflow in the PWV measurement package have be fixed in this release.

FUJIFILM Value from Innovation | VISUALSONICS

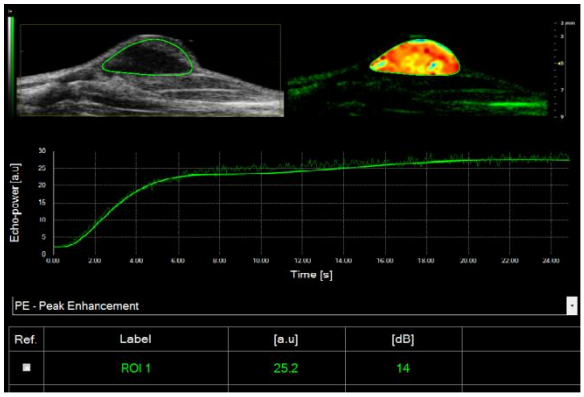
3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

Vevo LAB Workstation Software Add-On Options



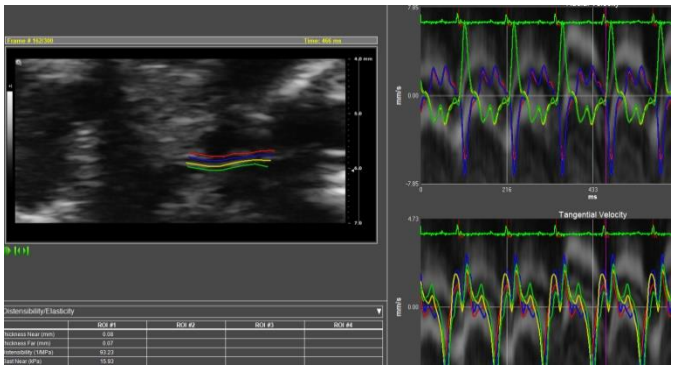
✓ Vevo Strain: advanced cardiac analysis featuring qualitative analysis by vector and parametric displays, and quantitative analysis of myocardial abnormalities in the circumferential, radial, and longitudinal directions. Multiple data points are generated including Velocity, Displacement, Strain, Strain Rate, Shear, and Shear Rate.

For further information, please consult the Vevo Strain User Guide (PN 51064).



✓ Vevo CQ: advanced analysis of contrast-enhanced imaging. Recommended for the quantification of perfusion kinetics via curve fitting algorithms of contrast agent uptake. The software also provides for the quantification of biomarker expression via late-phase differential targeted enhancement calculations.

For further information, please consult the Vevo CQ User Guide (PN 52810).



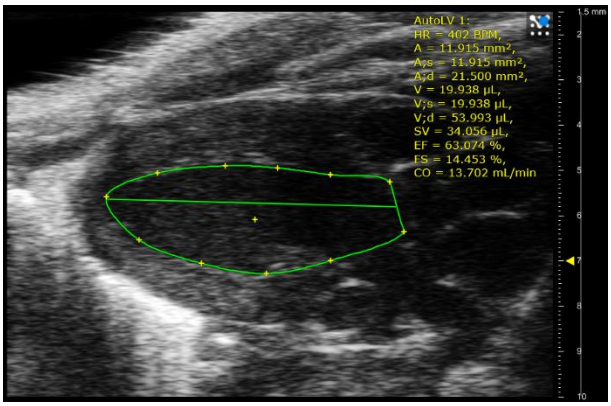
✓ Vevo Vasc: advanced vascular analysis. Vessel wall motion in the longitudinal and transverse directions may be assessed to provide qualitative and quantitative analysis of early indicators of vascular disease. Multiple data points are generated including Velocity, Displacement, Strain, Strain Rate, Distensibility, and Elasticity. Pulse Propagation Velocity assessment is also available (requires EKV Mode images).

For further information, please consult the Vevo Vasc User Guide (PN 50699).

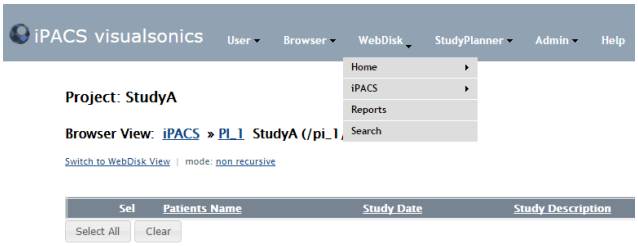
3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

- ✓ AutoLV: Building on our long-standing and widely adopted LV Analysis tool, AutoLV Analysis brings the power of artificial intelligence to functional analysis of the left ventricle in small laboratory animals. Reliable, reproducible data are the key to understanding model animal anatomy and physiology. AutoLV improves data analysis throughput times, while virtually eliminating sources of inter- and intra-operator variability.

  For further information, please consult the AutoLV Analysis Product Brief (MKT02904).



- ✓ VisualSonics iPACS: a comprehensive web-based application for data archiving and reporting based on various MetaData tags (i.e. Study Name, Series Name, Animal ID, etc.). Users have the ability to remotely archive and search for images, run customized analysis reports, and compile results based on unique research interests and design-of-experiment.



For more information on our technology, products, and applications please visit

www.visualsonics.com

FUJIFILM Value from Innovation | VISUALSONICS

3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

Known Issues for Vevo® LAB Workstation Software V5.8.0

General / Workflow

Summary	Inconsistent "delete image" functionality from the Mode window or from the Study Browser.
Description	Within the Study Browser, if you delete an image from a Series that contains only one image, the entire Series will be deleted. If you delete the image while in Review, the image will be deleted as expected but an empty Series will still exist. The empty Series may be deleted from the Study Browser.
Reference	13481

Summary	Vevo LAB does not respond when attempting to open a report for a large number of studies (e.g. 50+).
Description	In the Study Browser, select a large number of studies (e.g. 50+) then select "Report". The application does not respond, and you need to close the application to stop or cancel the process.
Reference	16994

Summary	Two versions of Vevo LAB exist after installing an older version of Vevo LAB.
Description	On a workstation that has Vevo LAB 2.2.0 or greater installed (64-bit), install an earlier 32-bit version (e.g. V1.6.0, or earlier). After the second installation has completed, both versions of the application may be available. If the user needs to install an older 32-bit version of Vevo LAB, the 64-bit version must be manually uninstalled first.
Reference	23756

Summary	Ability to create, save, and delete saved graphs in a 'Lock All' locked study.
Description	Within a 'Lock All' locked study, the user has the ability to create, save, and delete saved graphs. Note this only applies to graphs; the user does not have the ability to create, save or delete measurements or annotations.
Reference	AP-3624

3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

PW Doppler Mode

Summary	Audio is blended when playing two PW Doppler loops in split screen.
Description	In split screen mode, open two PW Doppler Mode loops which both contain distinctive audio. Cine loop review both loops, with the volume high enough to hear the audio. Audio from both cine loops is heard.
Reference	14255

3D Mode

Summary	Playback of exported Animated GIF (AGIF) is slow.
Description	The actual playback of exported AGIF is slow. Surface View Rotation recordings play as expected, but manual recordings play much slower.
Reference	12645

Summary	Cannot change contour size or anchor of the contour for a completed Multi-slice volume.
Description	After creating a Multi-slice volume, unable to adjust the anchor points of the contour. Unable to adjust the size via the resize button and the contours cannot be modified at all. This occurs only with 3D images scanned with the smallest image size (smallest depth and width).
Reference	23737

Summary	PA 3D Region tool not available for PA 3D data prior to v2.2.0
Description	The PA 3D Region tool is disabled on any PA 3D clip from software prior to v2.2.0 since data acquired previous to this version is incompatible with the tool.
Reference	28470

Measurements, Calculations, and Annotations

Summary	Can place both an AM-Mode LV trace and an M-Mode trace within the same PV graph.
Description	Place an LV Trace measurement in an M-Mode loop and an AM-Mode loop. From the Analysis Browser, select both measurements and click “PV Loop”. Both measurements are displayed on the displayed PV Loop graph.
Reference	12517

3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

Summary	Raw data selection for histogram ignored in a Power Doppler histogram.
Description	Within "Preferences" > "General" tab, select "Raw Data" to be used for histograms. Open a Histogram in Power Doppler Mode (RF or RF 3D) and the "raw data" selection is ignored. It will always use Image data.
Reference	13043

Summary	The 'Avr' parameter for the PA region measurement is only for the selected frame.
Description	The 'Avr' parameter for the PA region measurement (any sub mode) is not the average for all frames. The value given is the pixel average for the selected frame. This value will change as the cine loop is scrolled.
Reference	14321

Summary	Nonlinear Contrast Region perfusion analysis.
Description	If the perfusion region is placed in a region with hidden frames or within a burst region, as expected incorrect numerical perfusion results are reported. Place the perfusion region in a valid data region.
Reference	14372 / 14375

Summary	Time to peak value in Nonlinear Contrast Region perfusion analysis.
Description	The time to peak value is always relative to the beginning of the perfusion region.
Reference	14374

Summary	Incorrect frame numbers listed when exporting PA Region values.
Description	Acquire a PA-Mode loop and hide a region of frames that begins at frame 1. Place a PA Region measurement on the image, then select "Export Region Values" from the context menu. When the exported .csv is reviewed, the first frame will be listed is "1" rather than the frame number for the first unhidden frame. Note: The data is correct for the loop displayed. The only issue is that the loop frame numbers exported have been reset to begin at 1. Note: If these values are exported from the PA Region graph, the data will be exported with the correct frame number defined.
Reference	16061

Summary	Ability to Save / Delete graphs in a 'Lock All' study.

3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

Description	Locked a study in 'Lock All' mode. Still have the ability to make a contrast region graph, PV Curve or histogram, and save it. When the Analysis Browser is opened, the saved graphs are displayed. Also have the ability to delete any saved graph from the Analysis Browser.
Reference	17276

Summary	Region graph curve with hidden frames has the x-axis in frames out-of-sync.
Description	For a Linear or Nonlinear Contrast clip with hidden frames, when the contrast region graph is opened, the hidden frames are on the x-axis, but the curve shows a continuous data stream. The frame indicator on the graph does not stop at the first hidden frame and does not advance until the hidden frames are past. At this point the real frame number and the time frame number on the graph are out-of-sync.
Reference	27538

Summary	Unable to open images and the application closes without notice when a custom measurement package is selected whose file name includes a special character (for example: '.').
Description	If a custom measurement package is created using a special character in its file name, (for example a '.'), and the application is closed then reopened, when attempting to open an image with a previously placed measurement using this custom measurement package, the system displays the 'thinking' circle, then the application exists without warning. The application does not currently support special characters in a custom measurement package name.
Reference	28507

Summary	Histogram Mean and Std. Dev. values are not updated after changing the Calculation option.
Description	Open a B-Mode image and place an area measurement. Open the corresponding Histogram, then go to Settings > Measurements and change the histogram calculation to the other option. The Mean and Std. Dev. displayed on the histogram remain the same and is not updated to reflect the new calculation. To see the updated values, select another image, then return to the original image and replot the Histogram.
Reference	AP-3175

Export

Summary	PW Doppler Mode audio and image data not in sync when exported to uncompressed AVI.
Description	The size of PW Doppler Mode image files, exported to the uncompressed AVI format, is large and the playback might not be correct. In some cases the PW Doppler Mode image data is not in sync with audio data.

3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

Reference	9290

Vevo Strain Analysis Software

Summary	Unable to load large loops into Vevo Strain application.
Description	When loading large loops (e.g. >750 frames) into Vevo Strain, the application appears to be loading normally. Once processing is completed, the Vevo LAB application returns. The subrange controls may be used to select any set of frames within the cine loop.
Reference	9865

Summary	German / French settings use decimals internally.
Description	Vevo Strain uses decimals internally, instead of "," when German or French locale settings are selected. This is also true for exported .csv files.
Reference	17150 / AP-2371

Summary	User actions outside of the application are recorded during MPEG-4 exports.
Description	Select Export to video, choose MPEG-4, and Whole Screen. The application begins the recording the screen to video. If the user selects a different screen on the workstation, that change will be seen in the final exported recording.
Reference	AP-2098

Summary	Missing labels on exported data from Vevo Strain.
Description	When reviewing the multiple tables in both the Velocity, Main and TtP exports observed that a number of different headers are missing. The data is exported correctly, but the tables exported do not have a header / title to identify the contents of the tables.
Reference	AP-5674

Summary	Time-to-Peak Analysis shows the wrong curve
Description	When reviewing the Time-to-Peak Analysis window, the user can uncheck 'All Curves' to select which curves to see. Occasionally, the selected curves and the displayed curves can be out-of-sync.
Reference	AP-6556

Vevo CQ Analysis Software

3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

Summary	Only one Vevo CQ screen can be saved to the Report.
Description	If repeated analysis is done on the same cine loop, saving results to the Vevo report will overwrite the previous image.
Reference	12357

Summary	Unhandled exception when excluding all frames after the burst for targeted analysis.
Description	Unhandled exception if in a cine loop that has a destruction and user excludes all frames after the destruction for a targeted analysis.
Reference	12800

Summary	Some text is cut off on higher resolution monitors.
Description	Vevo CQ supports a pixel density of 96 dpi (or pixels per inch) only.
Reference	16887

Summary	German / French settings use decimals internally.
Description	Vevo CQ uses decimals internally, instead of "," when German or French locale settings are selected. This is also true for exported .csv files.
Reference	17150 / AP-2371

Summary	Only able to load 1000 frames into Vevo CQ.
Description	When a Nonlinear Contrast Mode loop that is >1000 frames is selected to load into Vevo CQ, by default only the first 1000 frames will be loaded. The subrange controls may be used to select any section of up to 1000 frames within the cine loop.
Reference	24270

Summary	Subranged cine loop with a burst may cause an error when loading into Vevo CQ.
Description	Load a Nonlinear Contrast Mode cine loop that contains a burst near the middle of the clip. Create a subrange, then load into Vevo CQ. If the subrange beginning or end is placed within the burst, and error will be generated when loaded into Vevo CQ. Also, if the subrange beginning and end are either totally before or totally after the burst, an error will be generated.
Reference	28055

3080 Yonge Street Suite 6100
Box 66 Toronto, ON M4N 3N1 Canada
T +1.416.484.5000
F +1.416.484.5001
TF +1.866.416.4636
visualsonics.com

Summary	Curve signal does not match between Vevo LAB and Vevo CQ.
Description	When comparing a Nonlinear Contrast Mode Region Graph to the Vevo CQ Region Graph, there may be a noticeable difference in the resulting curves. Overall, the graph follows the same trend; however, the Vevo CQ Region Graph tends to show the signal reduces slightly and flattens out after the initial rise in signal. This is due to the different analysis methods being used to generate the graph.
Reference	AP-6596

Vevo Vasc Analysis Software

Summary	Unable to load a loop containing more than 1000 frames into Vevo Vasc.
Description	When a B-mode loop that contains >1000 frames is selected to load into Vevo Vasc, a message is displayed defining the issue and the loop is not loaded. Create a subrange within the loop that is less than 1000 frames. Note: Although the limit is 1000 frames, it is suggested that the subrange (loops) to be loaded into Vevo Vasc should contain up to 500-750 frames. When loops of 800 to 1000 frames are loaded, in some cases the ECG will not be displayed in the AM-Mode selection window. The subrange controls may be used to select any set of frames within the cine loop.
Reference	24270

Summary	ROI values table not displayed after the first ROI processing is completed.
Description	After placing the first ROI on the image, in this case a Manual Longitudinal Wall ROI, started processing the data. Once processing was completed, the table was not visible until a mouse/cursor was hovered over the measurement in the image. The table displayed contains the ROI values related to the new measurement. No further issues were observed when placing further measurements on the image.
Reference	25712

Usage Log

Summary	25 hour Usage Log entry possible within the Usage Log table.
Description	A session time maximum could be 25 hours, rather than the expected 24 hours if the day in question is the day when Autumn Daylight Saving time begins.
Reference	17652

FUJIFILM VisualSonics, Inc.

T: +1.416.484.5000
Toll-Free (NA): 1.866.416.4636
Toll-Free (EU): +800.0751.2020
Internet: www.visualsonics.com

FUJIFILM | VISUALSONICS