



Refining the Ultrasound Research Experience: Enhanced QuickScan Feature Available on Vantage® *NXT* Research Ultrasound Systems

Verasonics continues to support the ultrasound research community with the latest iteration of its advanced software, QuickScan, now optimized for Vantage *NXT* Research Ultrasound Systems.

Background

QuickScan is a complementary software feature, designed to enhance the Vantage Research Ultrasound System's user experience. It has been updated and is now available on Vantage *NXT* Systems. With QuickScan, MATLAB® programming skills are not required by users to operate the software, allowing researchers an easier-to-use environment to rapidly start imaging with the Vantage *NXT*. The QuickScan graphical user interface (GUI) for real-time B-mode and color Doppler imaging simplifies the data collection process, particularly in interdisciplinary studies or when researchers and clinicians who may have limited programming expertise collaborate on projects.

Updates for Vantage *NXT*

In addition to improving controls, stability, and performance, QuickScan has been enhanced with the inclusion of optimized imaging scripts for improved image quality on Vantage *NXT*. These scripts have been optimized by an ultrasound imaging expert, working in conjunction with a trained sonographer, creating sequences and settings to achieve better imaging performance compared to previous example scripts. This includes imaging modes such as wide-beam spatial compounding, harmonic imaging, and wide-beam Doppler imaging. These modes are readily accessible, ensuring high-quality imaging results without the necessity for extensive programming knowledge.

QuickScan Workflow

Verasonics designed QuickScan to promote a common and easy-to-use workflow that supports a retrospective capture and review process. QuickScan is equipped with three distinct tools:

1. Data-capturing, review, storage, and export system
2. Set of measurement tools. including annotations
3. Updated settings-storage tool

The workflow can be roughly divided into two sets of steps: (a) Imaging, and (b) Review and Analyze, as noted in **Figure 1** below.

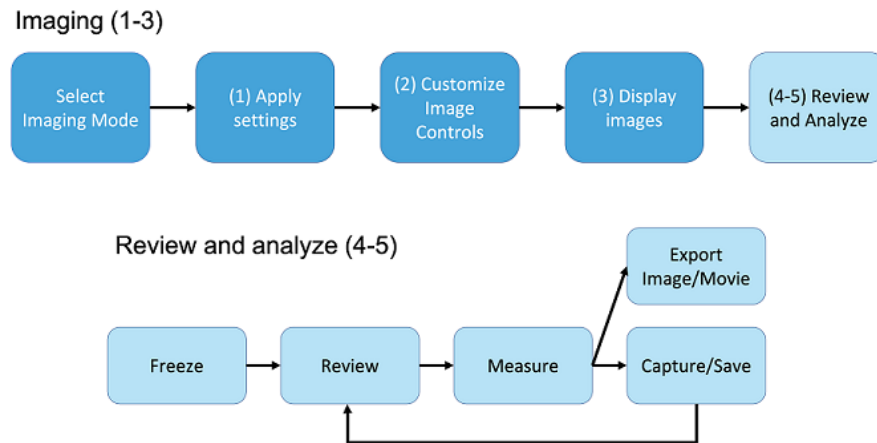


Figure 1 - Workflow of QuickScan

Once QuickScan is launched, the first task the user is faced with is selecting a particular imaging mode for their transducer from the Script Selector. Both existing imaging modes based on original example scripts, as well as new optimized scripts are included. These new scripts are marked with “opt” in the Script Selector as shown in **Figure 2**.

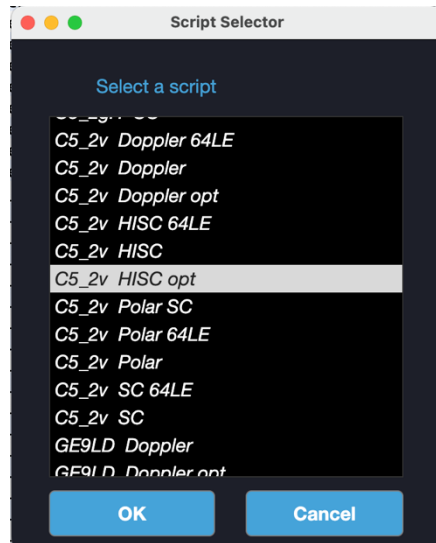


Figure 2 - Script Selection showing Optimized Imaging Scripts

Once the script has been selected, the main QuickScan display appears to the user as shown in **Figure 3**. The QuickScan display is organized into five main areas that represent the major features and support the general workflow from left to right with the image display in the center.

1. Global Setting Control
2. Image and processing controls
3. Display and Controls
4. Freeze, Capture, Measurement
5. Frame viewer and Export

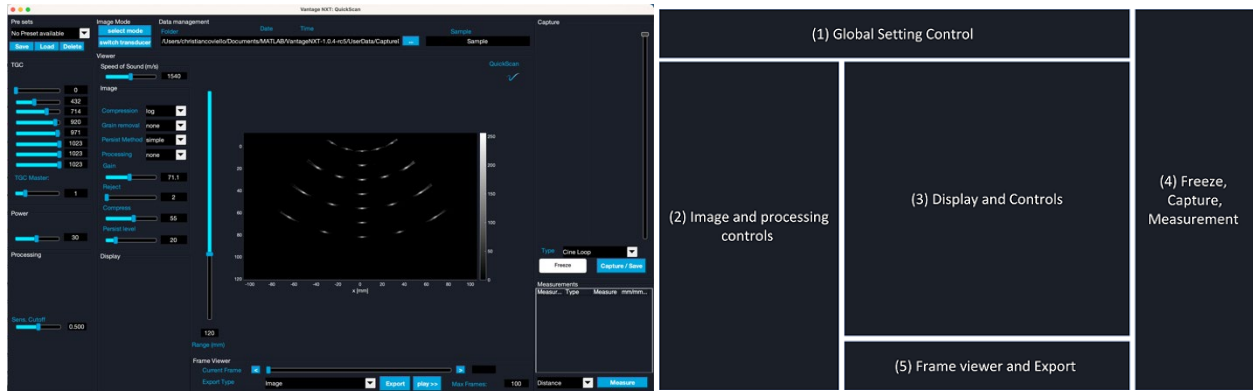


Figure 3 - QuickScan display on launch (left) and organization of controls in the display (right).

In addition to the common controls that are defined by the imaging script chosen, QuickScan provides an extensive set of imaging controls, which allow users to optimize B-mode, as well as Doppler image settings, for the most common imaging scenarios. Users can also save their settings as a preset to ensure they can utilize the same settings across different scanning experiments or different subjects.

Once the user has set their imaging controls and started to collect imaging sequences on a subject, they can then review and analyze the image. This includes freezing/unfreezing the display, reviewing the most recent image sequence frame-by-frame with the frame viewer, completing measurements on features in an image frame, and saving off CineLoops of image sequences or single image frames. Measurements available to the user include straight line distance between two features, a freehand trace distance providing circumference or path length, and an ellipse feature that provides circumference, area, and major and minor axis lengths. There are also export tools to save off movies of CineLoops and image frames for use in presentations and reports.

QuickScan Intended Use

QuickScan can be used for applications where researchers want to quickly image using a set of highly optimized, preconfigured, and well-controlled settings, thus eliminating the need to program a script, and avoiding unexpected results due to programming errors when operated by an inexperienced user. Additionally, it offers a set of features that are currently not available with the standard Vantage Research GUI. These features include basic measurement calipers, cine loop capture controls, and data reviewing tools.

QuickScan is designed to provide an easy-to-use interface to simplify research in clinical and preclinical applications when working with sonographers and physicians who may have limited programming experience. QuickScan can be used to acquire images, measure regions of interest, and share ultrasound images easier than the Vantage platform's standard Research GUI.

Verasonics continues to develop and expand the software suite for Vantage *NXT* systems with the goal of enhancing the future of ultrasound research. User feedback and collaboration are invaluable to the organization as we strive to innovate and support research endeavors with our industry-leading technology.

For more information on QuickScan, Vantage *NXT* or other Verasonics solutions, contact sales@verasonics.com.