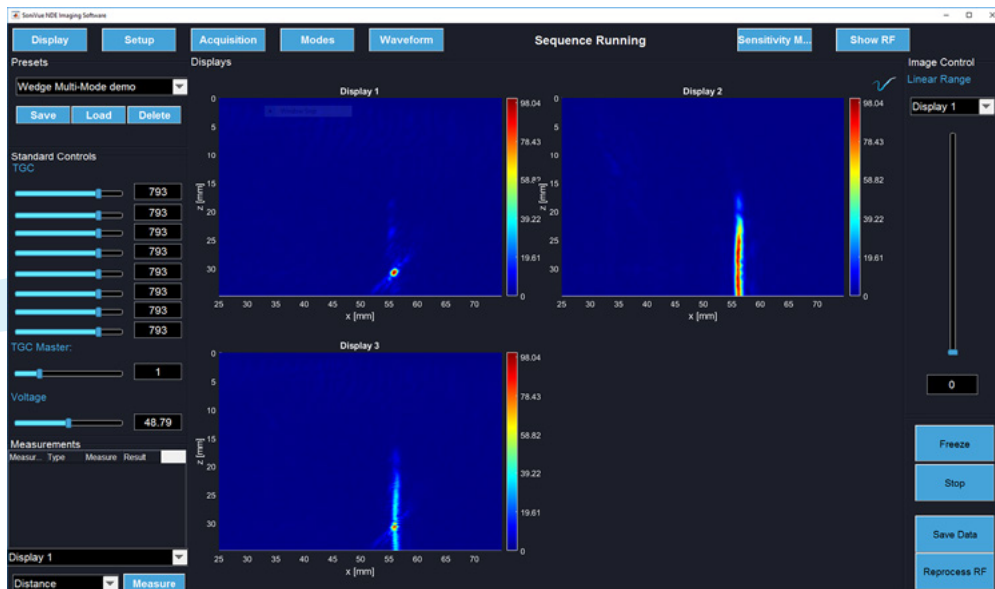


SoniVue[™] NDE Research Software for advanced, high-speed, and custom array imaging

- Real-time, high-speed multi-mode TFM imaging
 - All mode conversion permutations of direct, half-skip and full-skip TFM
 - Create multiple image displays with any combinations of modes selectable for each display
 - One and two-array configurations supported for direct or stand-off medium (e.g. wedges or immersion) coupling
- Supports FMC, HMC and Hadamard encoded acquisition
- Real-time RF signal and spectrum viewer
- Sensitivity mapping tool generates spatial sensitivity maps for the modes in each display window, computed for both point-like and planar reflector defect types
- Custom imaging for rapid prototyping of new applications and the easy delivery of research and development outcomes
- Preset saving/loading, data reprocessing, array and material databases



Multi-mode imaging a fatigue crack. Direct + half-skip TFM

Compatibility

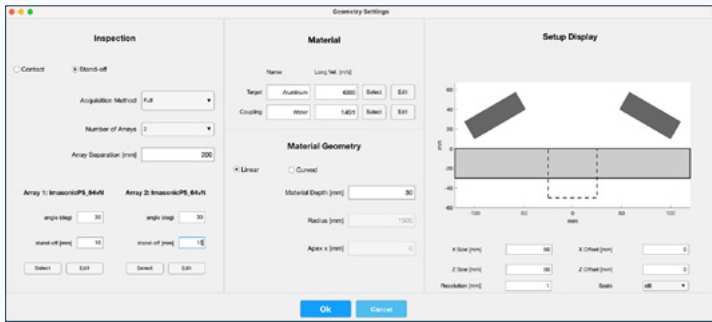
All Vantage Systems – Standard, low & High Frequency*

Supported UTAs	160-DH/32 LEMO	160-SH/8 LEMO	160-SI/8 LEMO
	260-S	260-D	

*Imaging above 15 MHz not currently supported

Multi-mode TFM

The core functionality of the software is full matrix capture (FMC) and multi-mode total focusing method (TFM) imaging. Multiple simultaneous image displays can be created, each of which can contain any arbitrary combination of imaging modes. Native imaging modes include all mode conversion permutations of direct, half-skip and full-skip TFM. Imaging is supported for one or two-array configurations with arrays either in direct contact or through a stand-off medium (e.g. wedge or immersion) for planar or curved surface geometry. Acquisition features include FMC, HMC and Hadamard encoding.



Setup window: Array, material and geometry settings

Custom imaging offers:

- Real-time, quantitative comparison with established techniques and allows the user to benefit from complementary attributes of both.
- A platform for rapid prototyping of new applications and the easy delivery of research and development outcomes, within or between organizations, with all the convenience and utility of an advanced imaging software package.

Custom look-up-table modes:

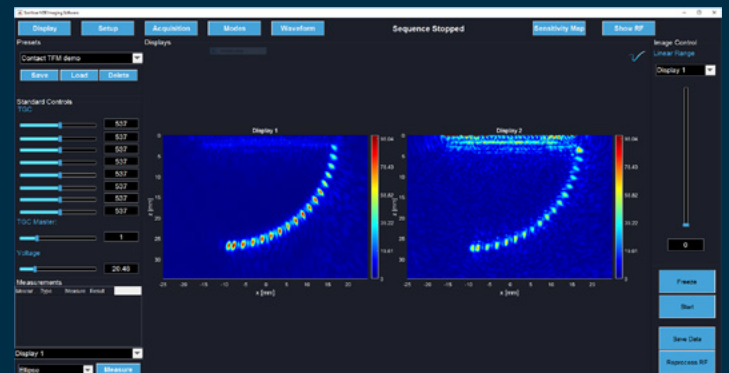
One type of custom mode makes use of Verasonics' imaging reconstruction for custom applications of TFM such as non-standard geometry, or material properties such as inhomogeneity or anisotropy.

Verasonics' image reconstruction is a fast proprietary implementation of delay-sum post-processed beamforming. In the context of generalized TFM, Verasonics' reconstruction uses look-up-tables of phase delays and amplitude weightings to apply post-processed focusing and generate an image.

The user can provide a function to compute look-up-tables for their custom application conditionally on user settings, allowing users to leverage the speed and accuracy of Verasonics' image reconstruction for their custom application. Once imported the custom mode is available for selection, to be used on it's own or with any combination of other modes.

Custom processing modes:

Alternatively, custom modes can replace Verasonics' image reconstruction, processing the raw RF signal data with any custom method. In the example below, the left display is using direct mode TFM as a native imaging mode and the right display is using DORT (decomposition of the time-reversal operator), implemented through a custom processing mode.



Custom processed imaging in SoniVue NDE Research Software:
Native direct TFM and custom processing DORT

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Verasonics reserves the right to change specifications without notice.

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