

Agilent VnmrJ 3 Pre-Clinical MRI Software Environment

INTUITIVE ADVANCED IMAGING

The Measure of Confidence



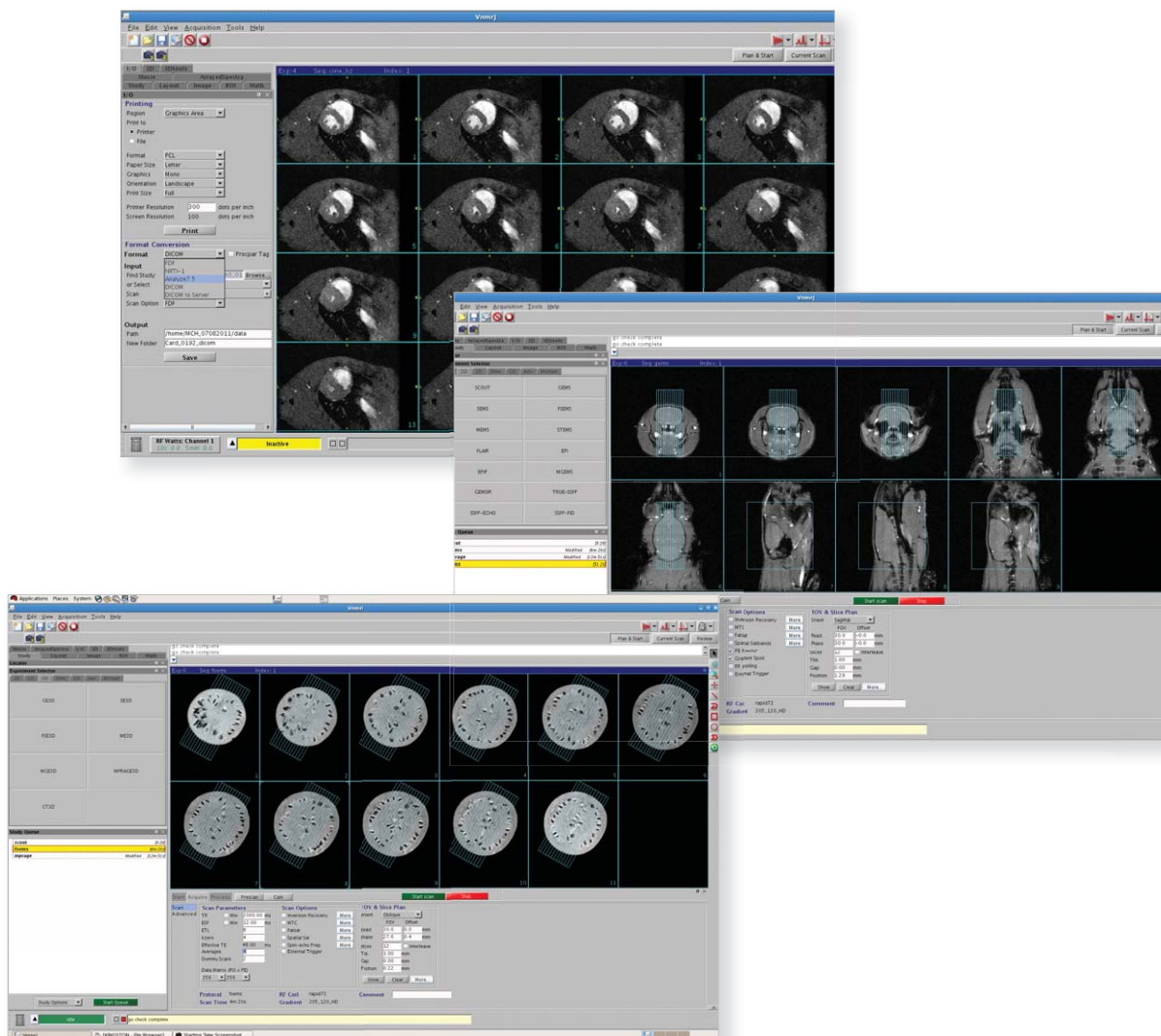
Agilent Technologies

CREATE HIGH PERFORMANCE IMAGES WITH EASY, INTERACTIVE TOOLS

VnmrJ 3 is the latest release of Agilent's advanced software for pre-clinical MRI. It brings a series of new pulse sequences and many other features that make the interface simpler and more user friendly.

Agilent recognizes how valuable your time is, so we've made the tools easy to find and manipulate. From routine high-throughput studies to novel MRI technique development and high-performance applications, you'll find VnmrJ3 is what you need to produce superior imaging results.

Look at what you can do with VnmrJ3!

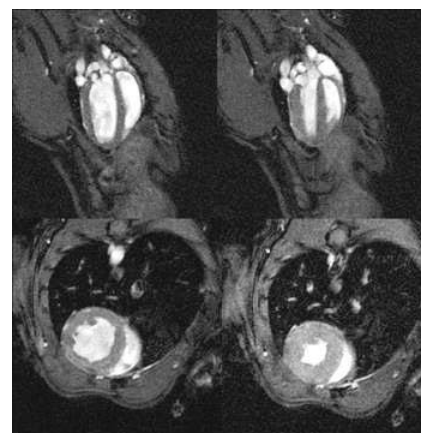


VnmrJ 3 single window mode provides easy and interactive image planning.

Advanced MR imaging and spectroscopy software for pre-clinical research applications

Key Benefits

- Single window mode operation for ease of use
- Open, research-oriented environment
- Streamlined study queue operation
- Improved prescan utility for automated experiment set up
- Supports advanced MRI applications: Cardiac MRI, Arterial Spin Labeling, and steady-state free precession
- Includes enhancements in localized spectroscopy
- Allows parallel MRI acquisition and image reconstruction
- Enables regulatory compliance with optional version for secure environments



k-t SENSE Cardiac Imaging at 9.4T. Data Courtesy of CABl, University College London, and BIC, Imperial College London, UK.

Improved Study Queue Tools

Its never been easier to set up a series of experiments. Simply access the new **Study Queue** tools to create your study using **Drag and Drop** mode. Your scans run automatically - an especially useful feature for overnight or weekend experiments. Just copy your slice or voxel positioning with the click of a button!

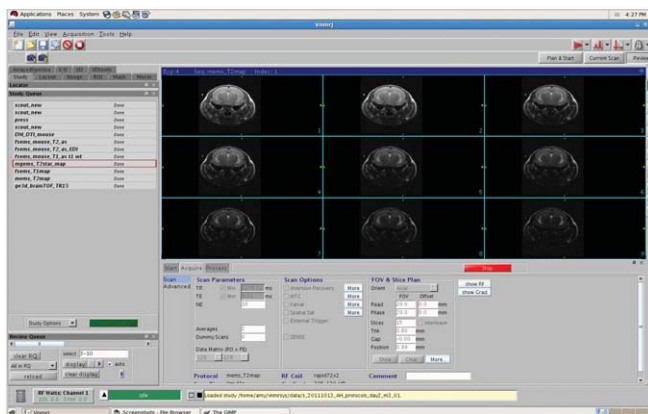
Study Queue		
scout		[0:12]
scout	Modified	[3:8s]
fsems	Modified	[51:4s]
mgems	Modified	[2m:8s]
SpinEcho-T1Wt-5slice		[2:08]
fsems	Modified	[51:4s]
mgems	Modified	[2m:8s]
SpinEcho-T1Wt-5slice		[2:08]
fsems	Delete	[51:4s]
mgems	Clone	[2m:8s]
SpinEcho-T1Wt-5slice		[2:08]
	Collapse Nodes	
	Expand Nodes	
	Queue	
	Dequeue	
	Copy Slice Plan	
	Copy Voxel Plan	

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	Delete	
	Clone	
	Collapse Nodes	
	Expand Nodes	
	Queue	
	Dequeue	
	Copy Slice Plan	
	Copy Voxel Plan	
	Copy Volume Plan	

TAKE A QUICK TOUR OF VNMRJ 3 FOR MRI

VnmrJ 3 is a powerful, efficient, and easy to use MRI data acquisition and processing software package. Its **versatile, interactive,** and **intuitive** operating environment allows for rapid experiment setup.

Join us for a quick tour that shows how easy it is to get your desired results!

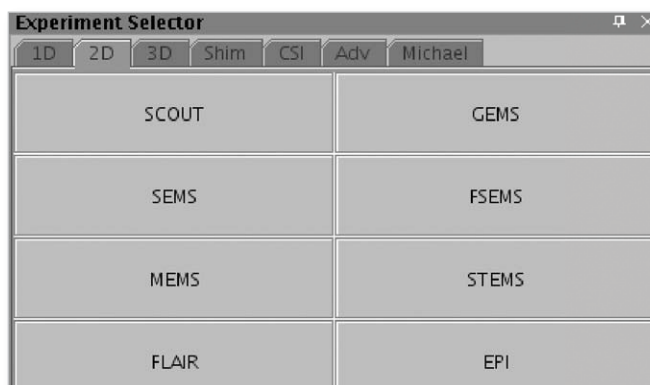


All of the commonly used scan parameters are collected on one page.

Setting up an experiment is as easy as 1-2-3 with the new features in VnmrJ 3

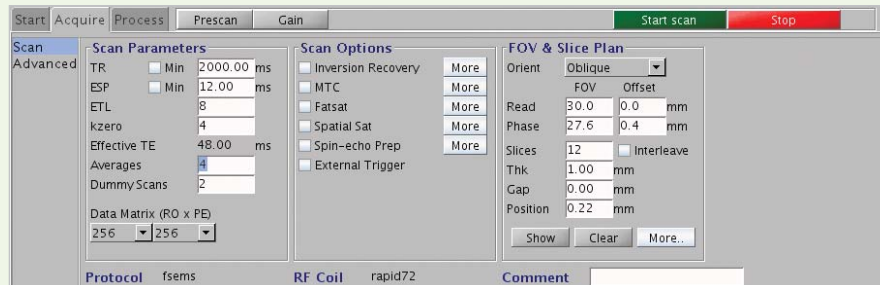
1. Select Experiment

Choose the sequence you want to run in the **Experiment Selector** - simply click a button to load your sequence into the study queue.



Choose Automatic or Manual Prescan Mode

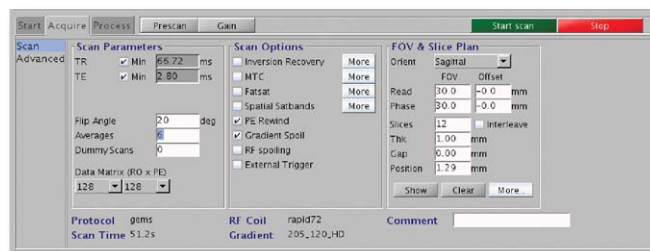
Automatic prescan is the easy way to get started. With a single click you can set the power calibration, gain, and center frequency. If you feel more at home with a manual prescan, that's easy to access as well! Both methods yield the same excellent calibration results.



One button prescan!

2. Modify Scan Parameters

The simplified **Parameter Panel** lets novice users set scan options in drop down menus, while leaving advanced users free to adjust the system manually.

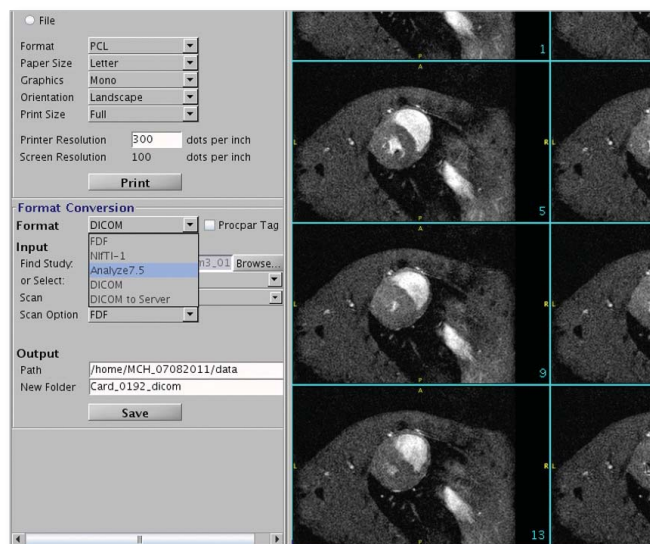


The streamlined parameter screen gives you single panel access to all the common parameters - advanced parameters are just one page away when needed.

3. Choose Output Options

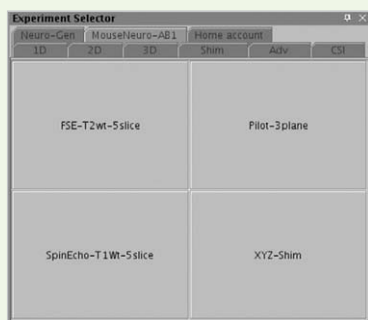
VnmrJ 3 features a myriad of new output options, just select your choice.

In addition to the standard output formats (PDF, JPG, and TIFF), VnmrJ 3 offers Analyze, NIfTI, QuickTime, DICOM, and more.



Expanded output options.

Increase Your Productivity



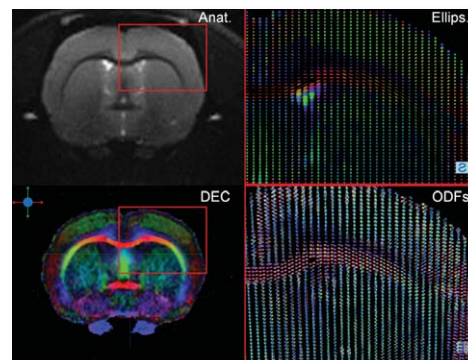
Do you have a series of favorite scans?
Do any projects use the same protocols over and over?

Simply collect them all under your own personalized tab. You have complete control over naming and selecting sequences!

VnmrJ 3's new and enhanced study queue tools don't just simplify the setup of a series of experiments, they increase your productivity.

ADVANCED FEATURES – JUST ONE CLICK AWAY

- Includes spectroscopy tools: LASER, SPECIAL, PRESS, STEAM, ISIS, and more
- Facilitates the arraying of parameters
- Enables fine tuning of gradient delays for demanding methods
- Permits compressed segment acquisition
- Simplifies auto frequency and power adjustments
- Delivers real time frequency lists

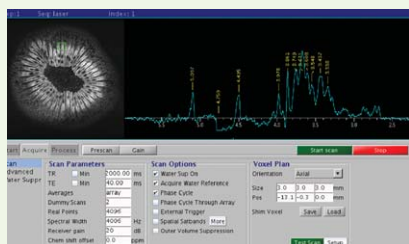


Brain Diffusion Tensor Imaging at 9.4T. Data courtesy of the Laboratory of Functional and Metabolic Imaging, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland.

Highlights of our advanced features

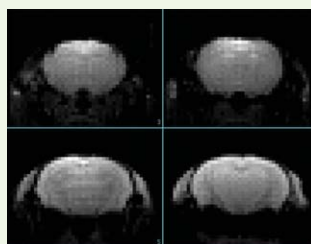
LASER

In localization by adiabatic selective refocusing (LASER), the adiabatic volume selective pulses provide B1 immunity and minimize chemical shift artifacts. The excitation profiles are well-defined with minimal contributions from unwanted coherences. The adiabatic pulses used in LASER provide excellent results on high field systems requiring lower B1 power than PRESS or STEAM.



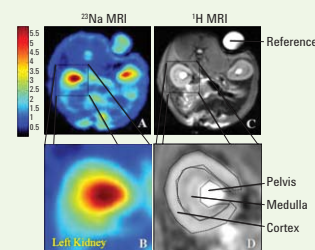
EPI

Echo planar imaging (EPI) is a method for the rapid collection of imaging data. EPI enables image collection within fractions of a second and is less affected by motion and flow artefacts than other imaging methods. Our improved sequence provides robust EPI images, which are particularly useful in applications such as fMRI and perfusion measurement.



X-Nuclei

X-Nuclei imaging provides a powerful method for evaluating disease states. VnmrJ 3 allows you to change from proton to another nucleus with the simple click of a button. This figure shows an example of non-invasive renal ^{23}Na MR imaging being used to measure the corticomedullary sodium gradient during ischemia and reperfusion.



Data courtesy of B. Atthe, School of Medicine, Indiana University.

VnmrJ 3 Pulse Sequences

Standard Sequences*

- GEMS: Gradient Echo
- SEMS: Spin Echo
- MEMS: Multi-Echo Spin Echo
- FSE: Fast Spin Echo
- EPI: Echo Planar Imaging
- ASL: Arterial Spin Labeling
- Angio: Time of Flight Angiography
- FLAIR: Fluid Attenuation Inversion Recovery
- SSFP: Steady-State Free Precession
- MGEMS: Multi-Echo Gradient Echo
- MPRAGE: Magnetization Prepared Rapid Gradient Echo
- Cine: Dual Gated, Tagging
- Short TE Techniques: CT3D; Back Projection; SWIFT

Shimming

- Quick Shim
- GE3DShim
- FASTMAP

Spectroscopy

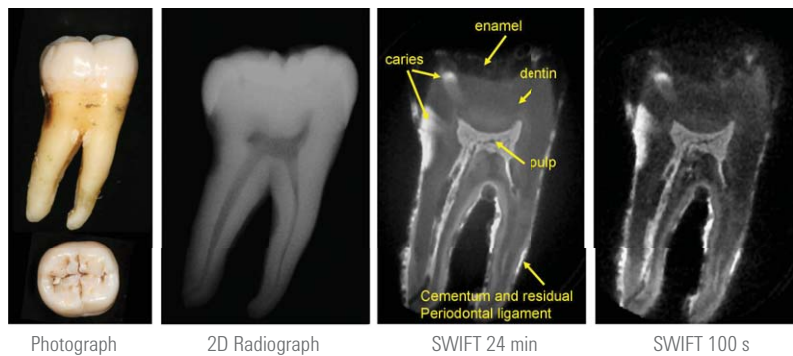
- Non-Localized Spectroscopy
- CSI
- PRESS
- STEAM
- ISIS
- LASER
- SPECIAL

*With these options where appropriate:

Parallel Imaging Options, Diffusion, Fat Sat, Inversion Recovery, Magnetization Transfer, Spatial Saturation, Trigger, X-Nuclei.

VnmrJ 3 offers several important optional features that can be added to suit your requirements.

- The **SWIFT software package** is ideal for imaging tendons, bones, and teeth.
- **VnmrJ for secure environments** helps ensure regulatory compliance, with enhanced security, validation, and an audit trail.



Courtesy of Idiyatullin et al., Journal of Endodontics, 2001.

Learn more about VnmrJ 3 for intuitive, advanced imaging

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