SCOUT

Ultra-Compact NMR Spectrometer

SCOUT™ is a compact, expandable, cluster-based spectrometer. The single master cluster measures 6.5" x 7" x 10" with an external power supply. The master cluster contains one broadband transmitter and one digital receiver that can be connected to a Windows 7 Pro 64-bit computer, via an USB 2.0 interface. The optional slave cluster allows expansion with a second identical DC to 300 MHz transmitter or gradient control for imaging or diffusion experiments.

DDS-Based RF Transmitter
• One or two identical transmitters
• Frequency range of DC to 300 MHz
• Phase, and amplitude modulation with 64 million point waveform memory
• Phase shifting ≤ 10 ns
• Nominal 1 Vpp output
• Optional RF power amplifiers

Wideband Digital Receiver
• 50 MHz digitization rate with dynamic range up to 16 bits
• 12.5 MHz bandwidth
• Digital filtering and digital quadrature detection
• 66dB of variable gain with > 85dB of total gain (exclusive of preamplifier)
• Fast <1 µs receiver recovery time
• Optional low noise figure, fast recovery preamplifier

Powerful Pulse Programmer
• Minimum pulse width of 10 ns with 10 ns resolution
• 3071 sequence events
• High-speed USB 2.0 interface (480 MBits/s)
• WYSIWYG graphical pulse sequence creation and editing
• Four user-assignable control lines

Gradient Control System Option
• One or three axis for diffusion or imaging
• 64 million point waveform memory for each gradient
• Opto-coupled 20-bit high-speed DACs
• Digital pre-emphasis with up to five time constants
• Gradient table rotation calculated by DSPs for multi-angle oblique imaging
• Auto-shim Z, X & Y through gradient coils

TNMR™ Software Site License
The SCOUT includes a software site license for TNMR, the powerful instrument control and spectroscopy / imaging data processing software, NMRscripts® for automation, and a pulse sequence library.

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TECHNOLOGY FOR MAGNETIC RESONANCE