

## MQR TD-NMR

The MQR is a low resolution, high performance TD-NMR research system designed for applications based on relaxation and/or diffusion measurements. The system includes a high performance digital spectrometer, 23MHz (0.49T) permanent magnet, and a choice of interchangeable 10, 18 and 26mm probes.

The MQR is supplied with the Application Developer software package – a fully integrated development environment that allows users to write pulse sequences, set parameters, run and debug sequences, and visualize the results. Shaped RF and shaped gradient pulses can be included, and calculations can be embedded in the pulse sequences. An editable library of common pulse sequences is provided, as well as a basic data analysis software package that includes simple curve fitting and 1D Inverse Laplace transforms.

Additional options include high-strength bipolar pulsed field gradients, T1 rho capability, variable temperature probes, and advanced data analysis including 2D Inverse Laplace transforms.

<b>Operating frequency</b>	23MHz (0.49T field)
<b>Probe sizes (diameter)</b>	10mm, 18mm, 26mm
<b>Probe deadtime</b>	<5 $\mu$ s (10mm probe); <8 $\mu$ s (18mm probe); <12 $\mu$ s (26mm probe)
<b>P90 (10mm probe)</b>	<3 $\mu$ s
<b>Data sampling rate</b>	Dependent on filters, typically 16MHz/16 bit
<b>Data point capacity</b>	>256k
<b>RF power</b>	250W
<b>Pulsed field gradients</b>	250 G/cm
<b>Available pulse sequences</b>	FID, CPMG, T1 inversion recovery, T1 saturation recovery, solid echo, FID/Hahn, 1-D profile (requires gradients), diffusion (requires gradients)
<b>Liquid-controlled variable temperature probe</b>	10mm or 18mm, -10 to +80°C (requires additional equipment)
<b>Gas-controlled variable temperature probe</b>	10mm or 18mm, -30 to +150°C (requires additional equipment, and depends on the temperature of the incoming gas)