

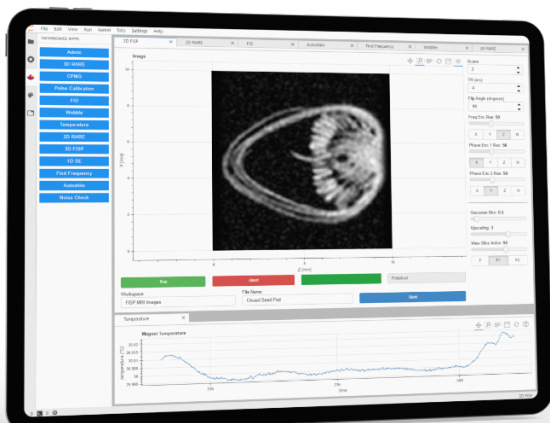
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# Specifications

March 2022



Magnet	
Design	Halbach Array
Field strength	0.33 T (1H 14 MHz)
Temperature control	PID temperature control to 30°C with 0.001 °C resolution
Temperature operating range	Laboratory environment of 15 °C to 25 °C
1H 50% Linewidth	10mm sample volume with shims, < 70 Hz
1H 50% Linewidth	15mm sample volume with shims, < 100 Hz
RF	
Transmit Amplifier	5W 60MHz bandwidth
Receive Preamp	Low Noise, Wideband, Variable 60-80 dB Gain
RF Probe	Solenoid coil 10mm Diameter, Adjustable Tuning/Matching
180 hard pulse minimum width	25 $\mu$ s
Probe dead time + Preamp recovery time	50 $\mu$ s
Gradient & Shims	
Gradient Strength	150 mT/m per Channel (X/Y/Z)
Gradient Amplifier	Up to 3A Current-Output per Channel (X/Y/Z)
Shims	First & Second Order (X, Y, Z, Z2, X2Y2, XY, ZX, ZY)
Digital	
Processor	Dual-core ARM Cortex-A9
Memory	1 GB DDR3
Storage	64 GB Internal SD Card
Receive	16-bit 100Msps ADC
RF Transmit	16-bit 100Msps DAC
Gradient/Shim Channels	8
Pulse Sequencer	FPGA, 10 ns timing resolution
Digital Receive Processor	FPGA, 32-bit quadrature output
Connectivity	
WiFi	Dual-band 802.11 a/b/g/n up to 100Mbps
Ethernet	IEEE 802.3 10/100/1000Mbps
Other	
Power Supply	DC, 24V 120W
System Weight	8.9 kg
Dimensions	245 x 245 x 320 mm
External I/O's	2 inputs, 4 outputs, logic level 3.3V.