Agilent 400-MR DD2 Magnetic Resonance System

Data Sheet

Introduction

The Agilent 400-MR DD2 provides unmatched productivity for a variety of chemical applications by combining easy-to-use software with outstanding performance. The Agilent MR workstation software provides enhanced capabilities within the StudyQ, Protocols, and ViewPorts that make data acquisition and processing significantly more straightforward. DirectDrive and DirectDigital RF architecture and Agilent shim technology ensure optimal data quality for every sample, with push-button simplicity.

In addition, the system has an extremely compact footprint and delivers outstanding cryogenic performance, resulting in improved siting and maintenance.

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Ordering Information		
G5125A	Agilent 400-MR DD2 Magnetic Resonance System	Complete Agilent 400-MR DD2 system with console, data system, and magnet. Magnet specified to have a liquid helium hold time of greater than 270 days.
G5126A	Agilent 400-MR DD2 LH Magnetic Resonance System	Complete Agilent 400-MR DD2 system with console, data system, and magnet. Magnet specified to have a liquid Helium hold time of greater than 365 days.
G5135A	Console Replacement Upgrade	Includes Agilent 400-MR DD2 console, data system, 21 channel shim tube, and sample delivery system.*

Magnet Specification	
Magnet	400 MHz narrow bore
Premium shielded magnet	Yes
Drift	< 8 (Hz/hr)
Axial 5 G line (above floor)	2.1 m
Radial 5 G line	1.0 m
N_2 refill	14 d
He refill	270 d

RF Channels	
RF architecture	DirectDrive 2
Number of channels	Two plus lock
Highband channel	^{1}H, ^{19}F**
Lowband channel	^{31}P–^{109}Ag**
Highband amplifier power, nominal	50 W pulsed
Lowband amplifier power, nominal	300 W pulsed
Timing resolution	12.5 ns
Minimum delay between modulated pulses	0
Minimum event time, phase, amplitude	25 ns
Phase settling time	25 ns
Phase resolution	0.0055 °
Fine amplitude settling time	25 ns
Fine amplitude control	60 dB in 65536 linear steps
Coarse amplitude control	100 dB in 0.5 dB steps
Fine amplitude control	0.0015 dB
Base frequency resolution	0.1 Hz

Digital Receiver	
Digitizer/max oversampling rate	14 bit at 80 MHz, effective 20 bit at 10 KHz
Maximum spectral width	5 MHz
Data compression, digital filtering	On-the-fly
Digital dead-time	0.4 µs

Lock	
Lock capture	Quad detection, simultaneous sampling
Frequency	^{2}H frequency ± 1 MHz
Lock sample and hold	Pulse sequence controlled

PFG	
Waveform generator	Included
Gradient power	3 A
Controller	PowerPC, 64 MB RAM, FPGA
Controller memory	30 Mb memory per channel
Timing resolution	12.5 ns
Amplitude control	16 bit
Minimum gradient pulse length	2.4 µs

Temperature Control	
Standard	Ambient to 150 °C†
Optional (order G5127A)	To –150 °C†

Host Computer	
Operating system	Linux

*G5135A upgrades the console on a 400 MHz narrow-bore Oxford magnet. Magnet data sheet must be completed and approved prior to order acceptance.
**See Agilent 400-MR Installation and Acceptance Manual and applicable probe specification pages for further information on tuning ranges and other details.
† Upper and lower limits are defined by probe specifications and other peripherals such as ProTune.

www.agilent.com/chem/nmr

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