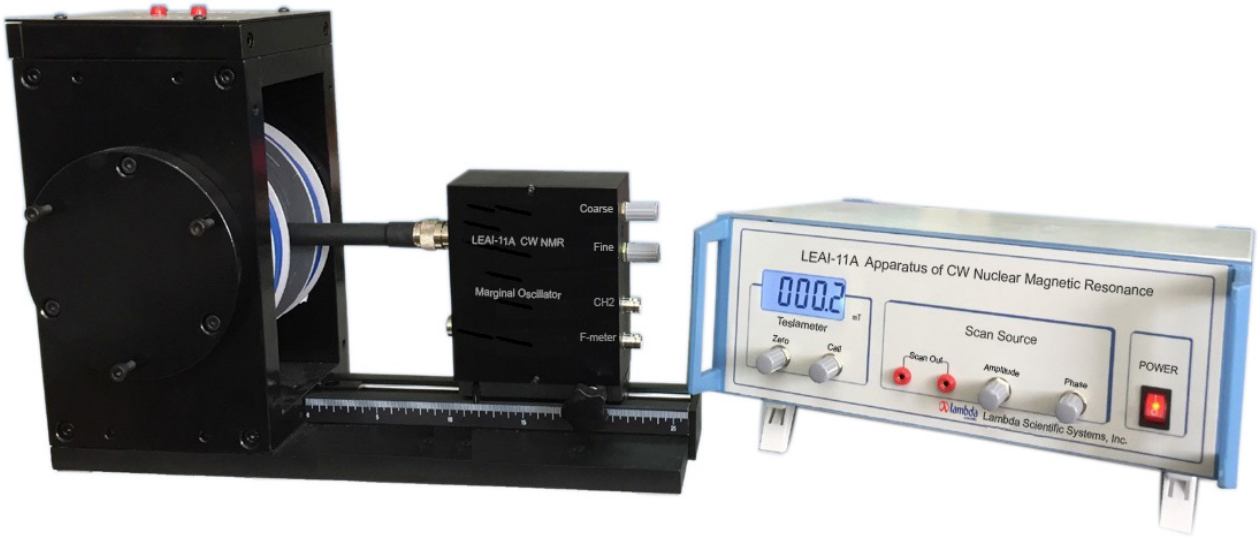
Construct, Conduct & Comprehend Physics Experiments

LEAI-11A CW Nuclear Magnetic Resonance - Advanced Model



- 11 easy-to-change samples
- High homogeneous magnetic field to assure more coda waves
- Open magnet structure for easy sample access
- High SNR & stable frequency
- One sample contains both H & F nuclei for determining the g-factor of F-nuclei
- High accuracy milli-teslameter included

LEAI-11A is improved from LEAI-11 by separating the marginal oscillator from the electric unit and mounting it on a scaled rail. It can be conveniently adjusted and positioned in the magnetic field. Also, more samples are provided.

Using this instrument, the following experiments can be performed:

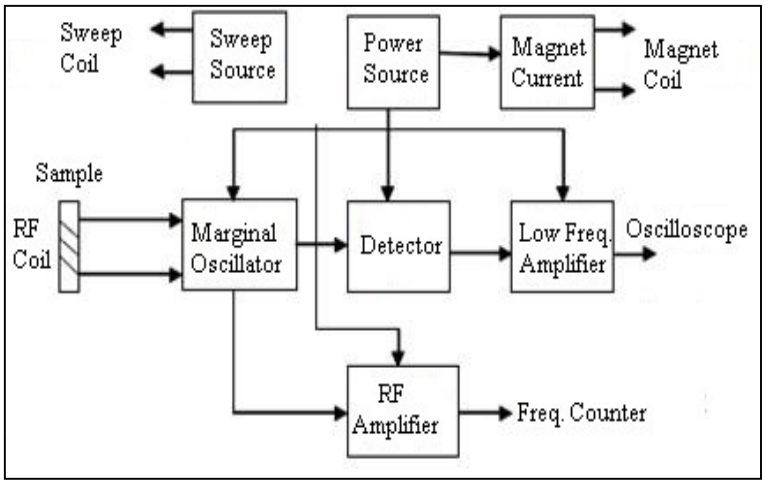
1. Observe NMR phenomenon of H- and F-nuclei.
2. Determine parameters of gyromagnetic ratio, g-factor and nuclear magnetic moment.
3. Observe the influence of magnetic field homogeneity on signal coda wave using different samples.
4. Measure magnetic field, and learn how to calibrate Teslameter through NMR method.

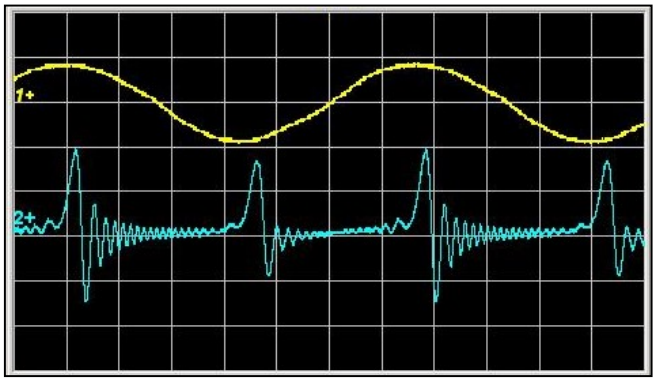
Specifications

Description	Specifications
Types of nuclei	H and F
SNR	> 40 dB (H nucleus)
Oscillator frequency	17 MHz to 23 MHz, continuously adjustable
Magnet pole	diameter: 100 mm; spacing: 20 mm
Power source of sweep field	0 ~ 5 V, 50 Hz
NMR signal amplitude (peak to peak)	> 4 V (H-nuclei); > 100 mV (F-nuclei)
Homogeneity of magnetic field	better than 8 ppm
Probe moving range	5 ~ 15 cm
Phase shifter	50 Hz sine wave, > 90°
Number of coda waves	> 10
Teslameter	measurment range 0 ~ 2000.0 mT, resoltuion 0.1 mT

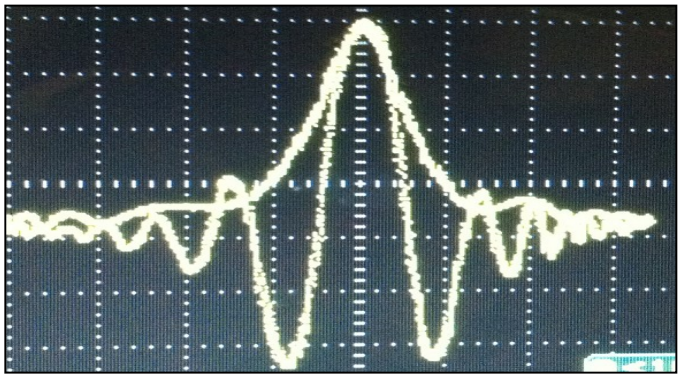
Part List

Description	Qty
Main Electric Unit	1
Electromagnet with Rail & Marginal Oscillator	1
Power Cord	1
BNC Cable	3
Connection Wires	2
Tesla Probe	1
Samples	11
Frequency Meter	1
Instructional Manual	1





Signal observed on oscilloscope



Lissajous graph on oscilloscope

Lambda Scientific Systems, Inc.
16300 SW 137th Ave, Unit 132
Miami, FL 33177, USA
Phone: 305.252.3838 Fax: 305.517.3739
E-mail: sales@lambdasys.com
Web: www.lambdasys.com

Note: above product information is subject to change without notice.