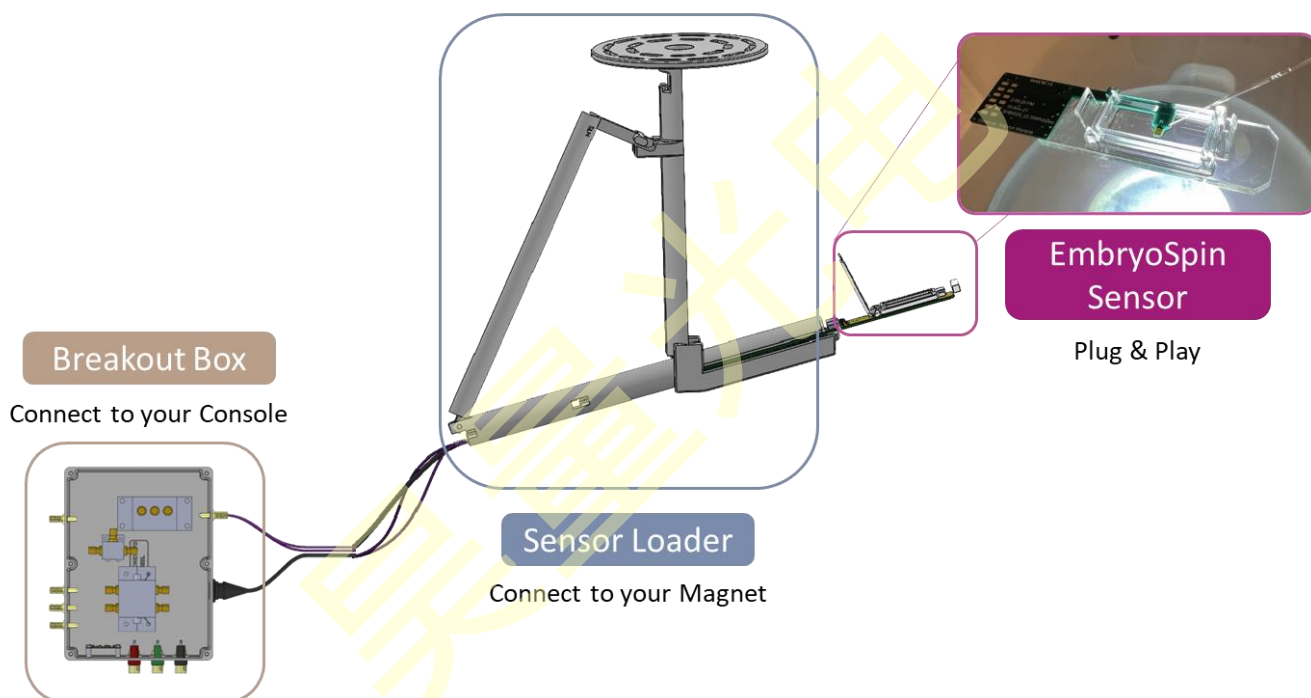


MicroMRS-Lab

Welcome to the Next Generation of NMR Analysis

Delve into the uncharted territory of microscopic NMR as you harness the unmatched performance of MicroMRS-Lab, the world's first commercial device dedicated to measurements within the nanoliter domain (nL). Spanning from a substantial 500 nL to an unparalleled 1 nL, it was designed with the researcher in mind: our tool offers effortless sample handling and control. Every facet of its design, including its advanced biocompatible framework, has been optimized for in-vivo studies and the careful management of sensitive biological specimens. The MicroMRS-Lab is crafted for flawless synergy with standard NMR spectrometers. And with the inclusion of our EmbryoSpin sensor series it allows for a maximum flexibility of experimental settings.



KEY FEATURES:

- Compatible with standard NMR spectrometers
- Simple sample handling and loading system
- Designed for samples from 500 nL down to 0.1 nL
- 1D broadband spectroscopy
- High throughput, multichannel analysis
- Hassle free sample handling
- Biocompatible for in-vivo studies
- Low starting price
- **Compatible with the whole EmbryoSpin sensor series (see Sensors' datasheet).**
- Customization available
- Temperature control available ($\pm 0.5^{\circ}\text{C}$)

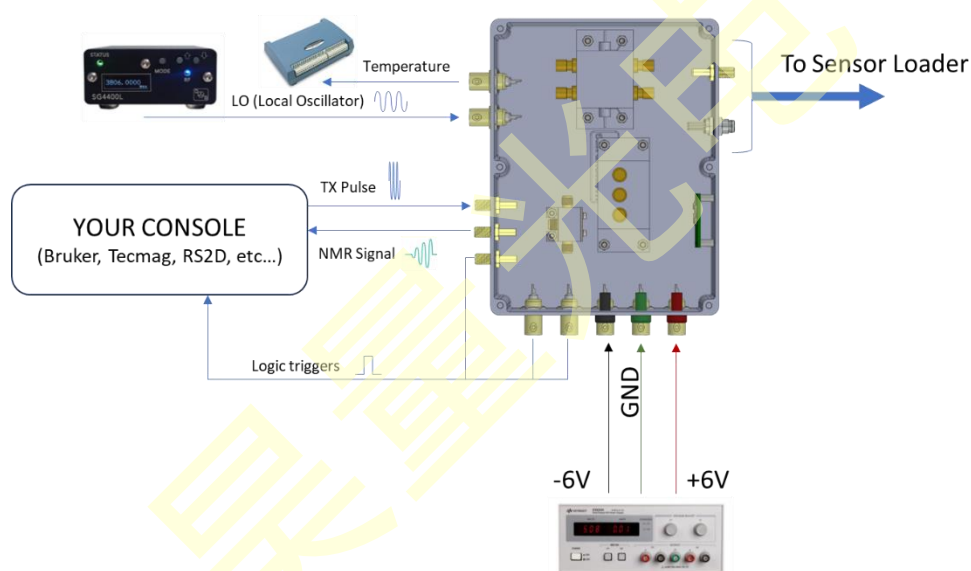
INCLUDED COMPONENTS

- (1) Sensor header: modular component that has your NMR micro-system ready for use.
- (2) Sensor loader: enables easy insertion and removal of the sensor header without dismounting the system.
- (3) Breakout box: interfaces to standard spectrometers.

Note: Sensor headers are miniaturized probes on their own and can contain very different micro-systems. However, they are all compatible with the same sensor loader and breakout box.

TYPICAL CONFIGURATION

All you need to use MicroMRS lab is connecting your console to our sensor loader through our breakout box. Once in this configuration, you will be able to use our probe as any NMR probe, except that you will be measuring exceedingly small samples.



Temperature monitoring (optional): Temperature monitoring and control can be functional to the success of your research, especially in experiments where the sample conditions are important. For this reason, MicroMRS-Lab integrates a T-sensor that reads the chip surface temperature in proximity of the sample. To record the integrated temperature sensor output, a low-noise data acquisition device is recommended. Temperature signal has a resolution of 3 mV/degree C, is close to 0.9V at 37C, and has a maximum range of 0-2V. Please inquire about calibration and heater, as these are not included in our standard offer.

USER PROVIDED COMPONENTS

The following items are needed to successfully operate MicroMRS-Lab.

NMR Spectrometer: MicroMRS-Lab is an accessory for every modern NMR spectrometer. It is made compatible with any bore size and geometry, and we have a standard ready to serve any vertical bore standard bore size magnet. The console should be able to send at least 1 mW RF and 1-4 generic trigger signals (0-5 V) that can be timed with the pulse sequence. Single channel sensor header need 1 or 2 triggers, while multi-channel versions need 4.

Power supply: A power supply is needed to power up our probe (~ 50mA of current at +6 V and -6V). Examples of suitable power supplies: Agilent E3651, Keithley 2231A-30-3, Keysight E3620A.

Signal generator: A signal generator is needed to make sure that the NMR signal is transmitted to your console at the right frequency. This RF source must be able to provide +6dBm of power at desired frequency of operation. Examples of suitable signal generators: DS Instruments SG4400L, SRS SG380 series.

Microscope (strongly suggested): Our probes operate at the scale of a fraction of a millimeter. When working at this scale the naked eye is not powerful enough for you to manipulating microsamples and inspecting their placement. Any stereo microscope with a magnification above 10x works well for that aim, such as those from Drawell Scientific or LEICA .

鼎暉光電