

RK-50



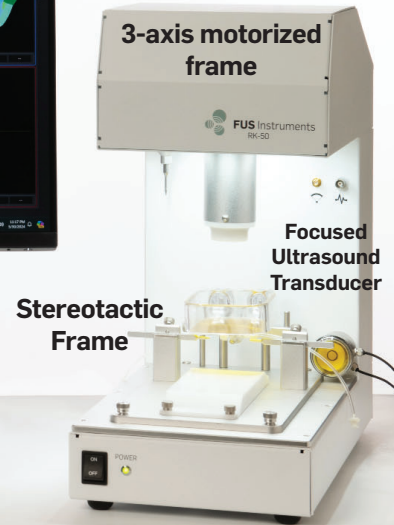
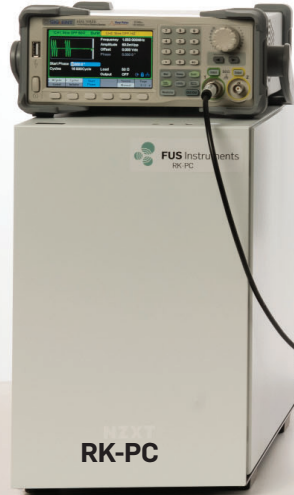
Stereotactic focused ultrasound system



 **FUS Instruments**
Non-invasive ultrasound delivery



Arbitrary Waveform Generator



The RK50 also includes a warming pad, nose cones (rat & mouse), RF filters, and impedance matching circuit.

A VERSATILE PRECLINICAL FOCUSED ULTRASOUND (FUS) SYSTEM FOR RESEARCH

The RK-50 is a preclinical FUS system capable of delivering precise ultrasound exposures in the rodent brain. The system is used by researchers worldwide to study applications including blood-brain barrier disruption, neuromodulation, and sonodynamic therapy. Targeting is achieved using a digital brain atlas and stereotactic methods, or with non-invasive imaging using a custom attachment. The RK-50 uses real-time acoustic feedback with a built-in hydrophone to ensure rigorous and repeatable studies.

The RK-50 incorporates a stereotactic frame for registering a digital rodent brain atlas using skull landmarks. A focused ultrasound transducer is coupled to this familiar neuroscience targeting platform, enabling transcranial delivery of ultrasound energy into the brain. Using a 3-axis motorized frame, the focus can be translated in all directions for single spot, regional or whole brain sonication.

KEY FEATURES

Turnkey system: The RK-50 includes everything needed to start ultrasound brain studies out of the box.

Efficient workflow: The RK-50 was designed with the brain scientist in mind. The workflow integrates seamlessly into existing stereotactic protocols for brain targeting and delivery.

Intuitive interface: The software interface is intuitive and powerful, without requiring ultrasound expertise. Full control over ultrasound parameters is available, enabling a wide range of studies.

Acoustic feedback: Real-time acoustic emissions monitoring provides visual feedback on the success of ultrasound experiments, allowing elimination of failed treatment treatment groups.

Flexible targeting: The RK-50 is capable of single spot, regional or whole brain targeting to facilitate a wide range of studies.

Portable: The RK-50 can be installed on a lab bench or cart, making it convenient to move the system to and from animal housing

Training & support: FUS Instruments offers on-site installation and training with every system, and continues to provide technical and scientific support throughout the warranty period.

Cost-effective: The RK-50 is 1/2 the cost of building a system in-house, and comes with a warranty to ensure continuous operation.

PRIMARY APPLICATIONS

- BBB disruption for enhanced molecular delivery
- Improved viral gene transfection
- Transcranial neuromodulation
- Immunomodulation
- Tissue hyperthermia & ablation
- Enhancement of stereotactic injections
- Enhancement of liquid biopsies

FUS Instruments is proud to sell Nanobubbles for preclinical BBB opening studies using the RK-50



PURCHASE & LEASE OPTIONS AVAILABLE

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TO LEARN MORE**



Optional imaging attachment enables DICOM (ie. MRI, PET/CT) image-based anatomical targeting.

SPECIFICATIONS

Parameter	Value
X range	50 mm
Y range	60 mm
Z range	60mm
Maximum speed	15 mm/s
Resolution (XY)	0.1mm
Power output (max)	15 W (electrical)
Transducer frequencies	0.5, 1.2, 1.6 MHz
Harmonic frequencies	1.5, 3.6, 4.8 MHz
Transducer diameter	35 mm
Transducer focal length	24.5 mm
Stereotactic frames	Dual species Mouse & rat ear bars, nose cones, and spacers