



INTRODUCING STIMULUS

THAT WORKS IN ALL IMAGING ENVIRONMENTS

The Galileo Tactile Stimulus System by EMCI is the world's first and only pneumatic tactile stimulus system designed to work within an fMRI, MEG, or PET imaging environment. The included software allows flexible control of pulse timing, sequencing, frequency, randomization, and data output. The built in TTL i/o allows you to synchronize with other hardware and software systems. The stimulus nodes and tubing are urethane and silicon and the stimulus medium is punctate air blasts, meaning there is no magnetic, electrical, or auditory interference. The fast rising pulse waves have been engineered specifically to maximize tactile response and minimize imaging interference.



COMPANY PROFILE

GALILEO SCIENCE

This 8-channel, pneumatic tactile stimulator is used to activate populations of low-threshold, rapidly conducting mechanoreceptive afferents in soft tissues overlying joints and muscles in the sensorimotor systems of the body. The stimulus uses patterned, programmable sequences of air square waves through flexible plastic tubing for compatibility with magnetic imaging systems. The pulses are fast rising (12ms for 10%-90% @ 16' tube length) and punctate, making them an ideal tool for mapping human and animal somatosensory and other systems through the use of functional neuroimaging techniques.

EPIC MEDICAL CONCEPTS & INNOVATIONS

EMCI is a premier, quintessential medical device developer that creates human health-advancing, market-dominating products. EMCI works with and assists others in bringing cutting-edge medical device innovations to a market-ready state.

Founded in 2006, we hold ISO 9001:2008 and ISO 13485:2012 certifications and have a vertically integrated manufacturing operation capable of producing our wide array of medical devices that span across more than a dozen disciplines, including neurology, pathology, thoracic surgery, reconstructive & plastic surgery, dentistry, mobile telemetry, and imaging systems.

EMCI is a privately held corporation with multiple sites in the Kansas City metropolitan area. EMCI has an expansive portfolio of research and development that includes 25 or more active projects at any given time.





TECHNICAL SPECIFICATIONS

ACCESSORIES

Replacement Stimulus Nodes (Human-Set of 8)
 Replacement Stimulus Nodes (Small Animal-Set of 8)
 Replacement Stimulus Nodes (Large Animal-Set of 8)
 Replacement Tubing (Color Coded Set of 8)
 Individual Node Adhesive Collars (Set of 400)
 Four Node Straight Adhesive Strips (Set of 12)
 Eight Node Straight Adhesive Strips (Set of 6)
 Four Node Adhesive Squares (Set of 12)
 Eight Node Adhesive Squares (Set of 6)
 Six Node Adhesive Circles (Set of 10)
 Eight Node Adhesive Circles (Set of 6)
 Replacement Software Installation Disk

General

Power Consumption: 120VAC 6A nominal
 120VAC 7.5A max
 Optional 220VAC 50Hz
 Operating Temperature: 50° - 122° F (10° - 50° C)
 Dimensions: 20" x 20" x 20"
 50cm x 50cm x 50cm
 Weight: 38lbs (17.2kg)
 Pressure Output: -200 to 200 cmH2O

Hardware Controls

Vacuum Pressure Regulator (manual knob)
 Pressure Regulator (manual knob)
 BNC TTL i/o - 1 input and one output Per Channel

Computer Requirements

PC running Windows XP, 7, or 8 with one open USB 2.0 port

Useable Environments

fMRI, MEG, PET, EIT

With Galileo hardware outside of the isolation booth, no auditory interference is produced at the stimulator cells.

HARDWARE CONTROLS

The control panel features a power switch, tuning port, pressure regulators, 8 TTL i/o ports, 8 corresponding LED channel activation indicators, and 8 corresponding pneumatic channel connectors.

The pressure regulator knobs allow adjustment of both the vacuum and pressure amplitude, and the integrated tuning port allows the user to modify the shape of the square wave.

The factory can set higher maximum pressures for certain animal study applications (special order).

SOFTWARE CONTROLS

Galileo™ Tactile Stimulus System

Within the software controls, the user can activate 1 to 8 channels in any combination. Pulses can be set from 20ms to 500ms in duration, and the pulse cycle time can be configured from 200ms to 30 seconds with a pulse resolution of 1ms.

The user can create and store up to 25 sequence configurations at once which can be cycled through. Each of the 25 sequences can individually be activated and set to run a specific number of times (up to 30,000 repetitions), or can be set to run continuously until interrupted.

The sequences can be cycled through in order, in random balanced order (sequences are randomly selected by software but are ultimately run the number of times set by the user), or random order for double blind studies. A log file is stored when a sequence is run which tracks the order in which the sequences were executed.

Sequence sets can be stored to a file on the PC and recalled for use. Additional features will be added often, with software updates available at no charge.