

# FREEZEFRAME

DATA COLLECTION AND NUMERICAL ANALYSIS FOR FEAR CONDITIONING EXPERIMENTS



FREEZEFRAME is a unique, video-based system for the Conditioned Fear Test that combines the sensitivity of the human observer with the objectivity and high throughput of automation. While infrared beams or video tracking systems can detect gross movements of an animal from one part of the cage to another, FreezeFrame can detect the minute movements of grooming, sniffing, turning and rearing. And FreezeFrame monitors the animal up to 4 times per second, not once every 5 seconds, for far more objective and reproducible results.

**Not a tracking system.** A proprietary motion detection algorithm filters out shadows, light flicker and camera noise, and detects movements as small as 1 mm.

**4-, 8- and 12- Channel systems** allow high-throughput testing.

**Fully validated.** Greater than 90% concordance between FREEZEFRAME and trained human observers.

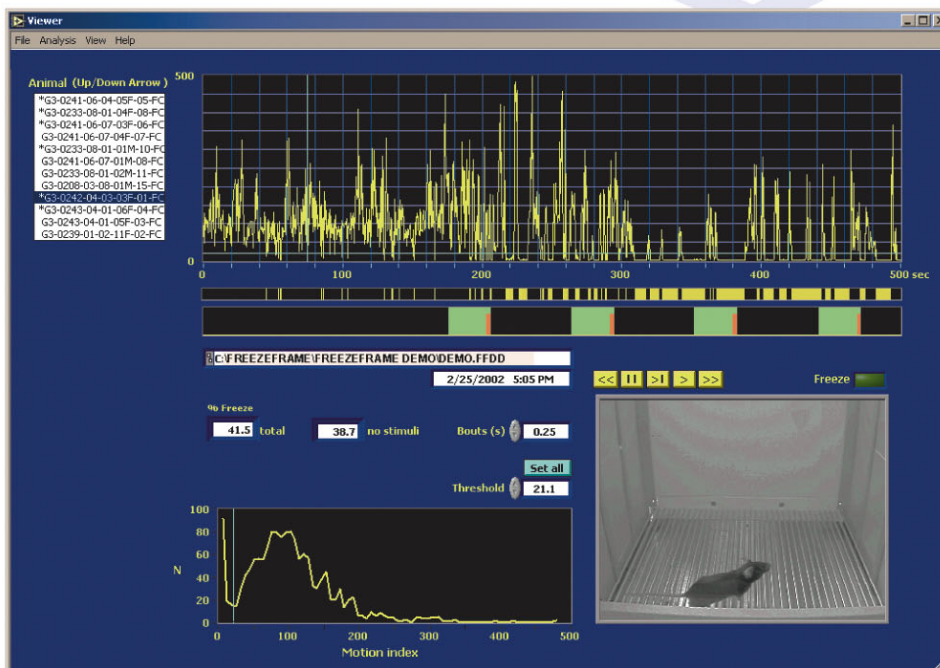
**Multiple stimulus protocols** can be stored and called up instantly for training and testing phases of the experiments.

**Store images** for later review in the analysis program. Export **QuickTime movies** of selected parts of a trial.

**Batch export** data and analyses in spreadsheet format. %freezing, number of bouts, bout duration and intervals for specified periods.

**Easy setup** of hardware and software.

**Sounds** (white noise or 100-8000 Hz tone) are delivered through the computer's sound card. The **Shocker-scrambler** is controlled directly from the computer, along with additional stimuli such as lights.



The FREEZEFRAME trial viewer and analysis program.

The different animals stored in the data file can be selected from the listbox to the left.

The video of the trial is played using the yellow player buttons.

The top graph shows the time-course of the motion index calculated from the video frames. Values below 20 (see histogram at lower left) indicate freezing.

The yellow bar graph when freezing occurred.

The red-green bar graph shows the stimulus protocol that was used during this trial. Green = sound; red = shock.

Various data and video export functions are accessed from the menus.

**COULBOURN INSTRUMENTS**

7462 Penn Drive Allentown, PA 18106 [www.coulbourn.com](http://www.coulbourn.com) Tel: 610-395-3771