The FAST16*mkII*

FAST Electrochemical Measures of Neurotransmitters in CNS

Fast data acquisition and analysis

The FAST16 records electrochemical data (amperometry, chronoamperometry), from up to 8 independent channels, digital (event), and marker information and generates waveforms for experimental control. It features high-speed data capture at rates up to 1.2 GHz with 16-bit resolution.

Other colors available:

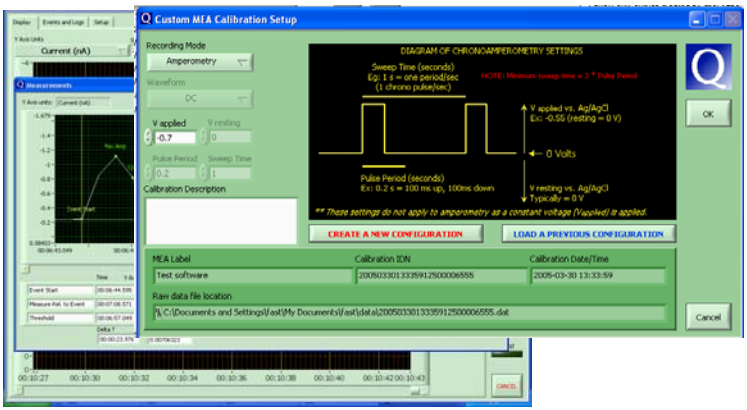
Blue Quanteon with white lettering, & anodized aluminum with black lettering

Applications

Windows-based "Real-Time" software for recordings from up to 8 microelectrodes/recording sites in one animal. Note you cannot record from more than one animal at a time.

- Glutamate (Glu)
- glucose
- lactate
- aspartate
- choline
- acetylcholine (ACh)
- dopamine (DA)
- norepinephrine NE)
- serotonin (5-HT)
- NO
- H_2O_2

and more….



FAST16*mkII* technical data

Analog I/0	8 channels of 16-bit waveform input, ± 10V 16-bit 1.2 GHz ADC
Digital I/0	4 handshake lines for single bit input and output; 1 push button handshake line
Host interface	Interface adaptors for PCI bus and USB. Minimum computer requirements: Pentium IV 2.5 GHz, 100 G hard drive (7,200 rpm), 2 GB RAM, AGP 8X or PCI express graphics card having at least 256 MB of memory.
Case and power supply	External 110V-240V 50-60Hz auto-sensing power supply AC to DC 5V 600mA Internal DC to DC 15V Case size: Front panel: 19" W, 1.75" H Chassis: 17.4" W x 8.25" L • standard rack mountable or can be placed on bench • constructed of high strength anodized aluminum for durability, versatility and electronic shielding.
Compatibility	Windows XP (Professional Edition Only)
Headstage	Low noise, four channel, pre-amplifier system/headstages capable of converting current to voltage. Headstages designed to connect to the microelectrodes with minimal noise interference. Standard system includes 2 headstages. Gains are 20 picoamps/mv or 2 picoamps/mv (can be modified as per customer request). Reference/auxiliary system can operate in 2 or 3 electrode potentiostat mode. (Headstages for freely-moving rats are available on request.)
Control Box	• Provides control, programmable gain, D/D and auxiliary inputs, and outputs for up to 8 channels of electrochemical recording in a single animal. • Programmable gain (Adjustable Voltage input range) is software controlled. • Slew rate is 20 to 2000 Hz-waveform frequency (depending on model and application). • System consists of isolation between channels and independent power supplies (110/60Hz and 220/50 Hz compatible). • FAST16 has all channels active and sampling virtually simultaneously. They are multiplexed, but with a lag of less than 10 msec/channel. • FAST16 has 4 digital IO lines currently active (for TTL events/external event switch) expandable to 24 digital lines.
A/D Board	The FAST16 system currently uses a modified 1.25 GHz AD board (National Instruments #779070-01, NI PCI-6251 (16 analog Inputs, 24 Digital I/O, 2 Analog Outputs) operating at 300 KHz/channel (1.25 MHz/4) when using 4 channels in amperometric or chronoamperometric mode. FAST16 has 16 bit analog to digital conversion and 16 bit D/A conversion for analog waveforms.
FAST-16 Software	Current software is capable of high-speed chronoamperometry, amperometry. The software is a combination of oscilloscope displays to record raw data and several automated strip-chart recorders to display, in "real time", data from individual microelectrodes. • The FAST16 system currently operates with all 8 channels capable of being displayed (8 in chronoamperometry- 4 oxidation + 4 reduction channels) on a second-by-second basis. • FAST16 has an active measurement tools window so user can obtain max-amplitudes and time constants of signal decay (e.g. T80) for release and uptake measures. This can be accessed during acquisition to verify ongoing data while still recording. • FAST16 primary data files are saved in a format compatible with various database programs. All files for electrode calibration and data acquisition are readily accessible in an integrated file management utility. • FAST16 software is network capable to allow identified users to access data and microelectrode information from another computer logged onto database with proper software. Central database can be on server for archive and retrieval purposes.
Microelectrodes	• FAST16 LOD for DA is <10 nM, LOD for Glu is <0.2 μM. • FAST16 is designed to work with ceramic microelectrode arrays for measuring glutamate, Choline, Ach, glucose and lactate. It is also designed to work with a variety of carbon fiber microelectrodes for measures of DA, NE & 5-HT. FAST16 system is designed to simultaneously detect and quantitate more than 1 compound at a time.