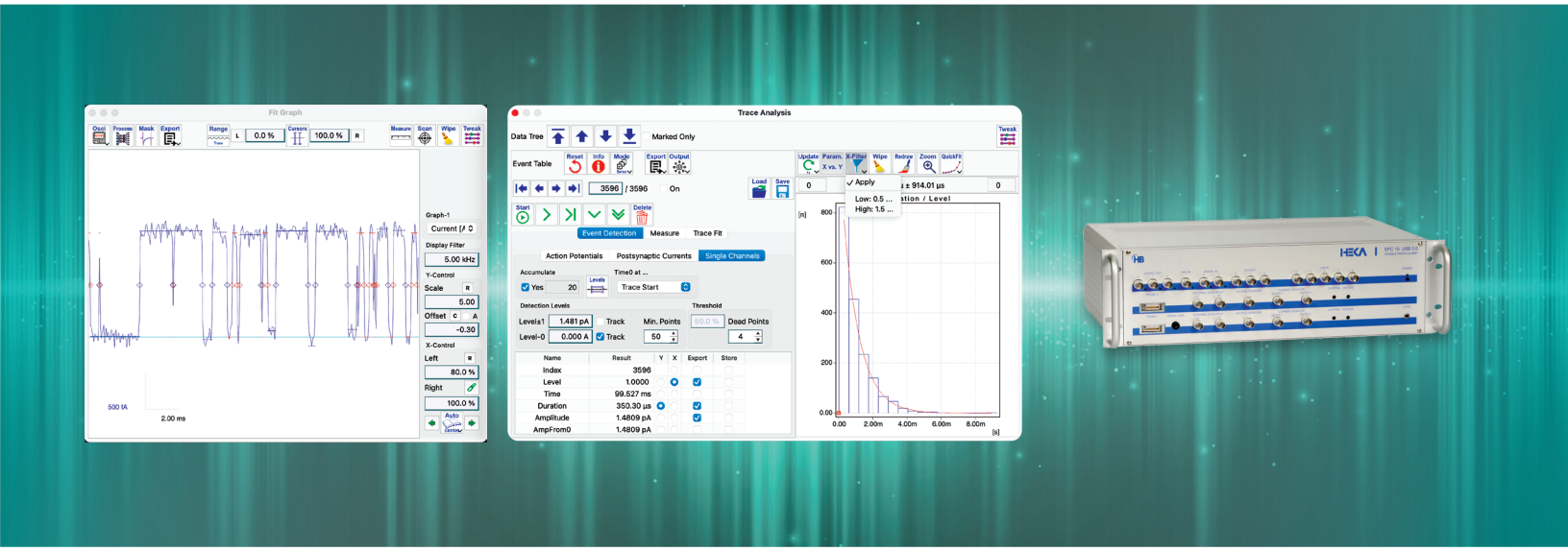
HEKA Data Acquisition and Analysis Software Suite

Streamline your workflow from experiments to publication-ready analysis.



- Software solutions to collect, review, analyze, and fit electrophysiological data.
- PATCHMASTER NEXT enables full control of the experimental proceedings.
- FITMASTER NEXT provides advanced data processing, analysis, and fitting capabilities.

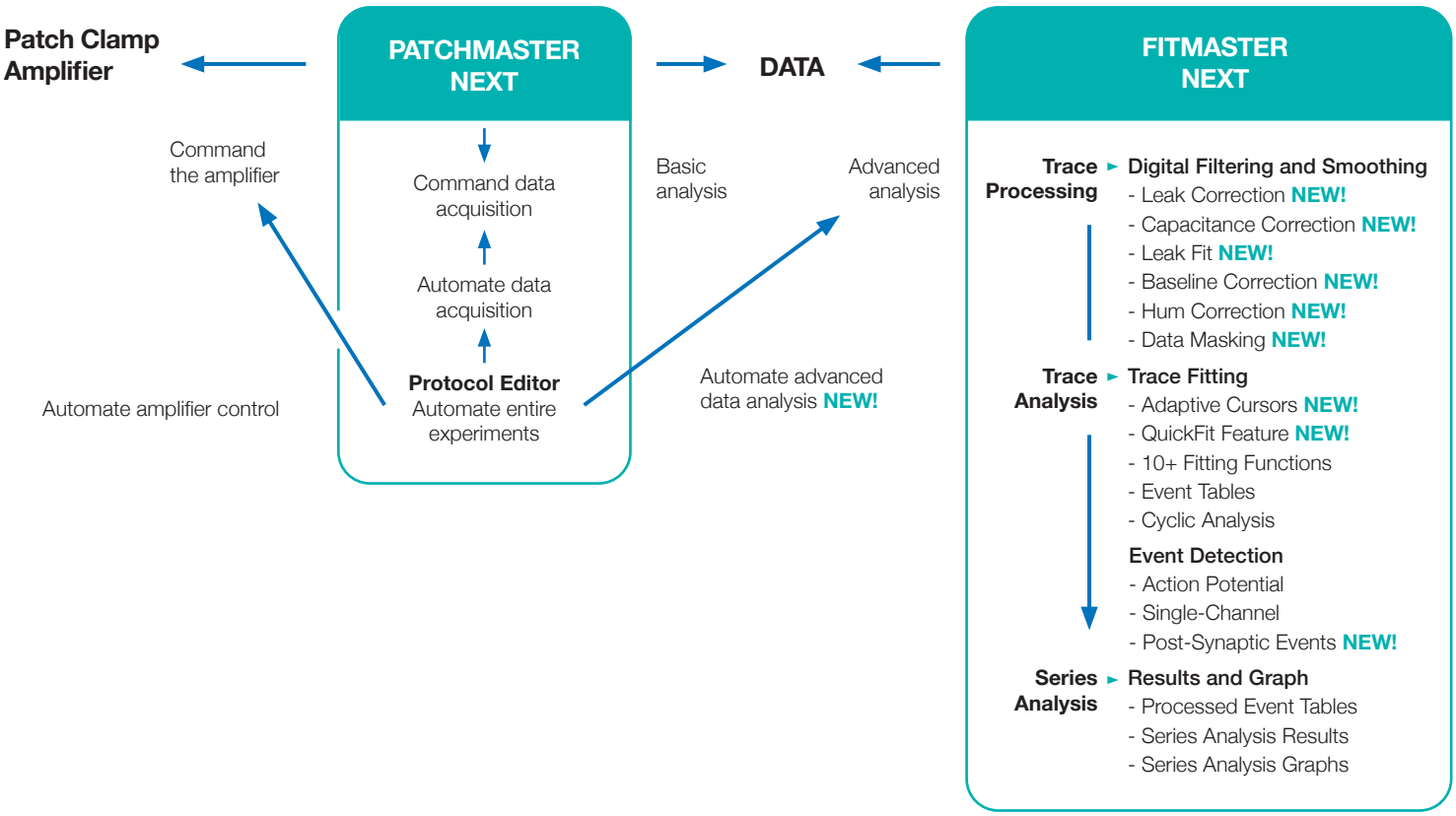
HEKA

An Affiliate of Harvard Bioscience, Inc.

We've pioneered Patch Clamp applications for biomedical research for nearly 40 years.

We integrate instrumentation (from amplifiers to all necessary accessories), software, and support services to provide single-sourced, complete Patch Clamp solutions that enable researchers to generate high-quality data for their publications.

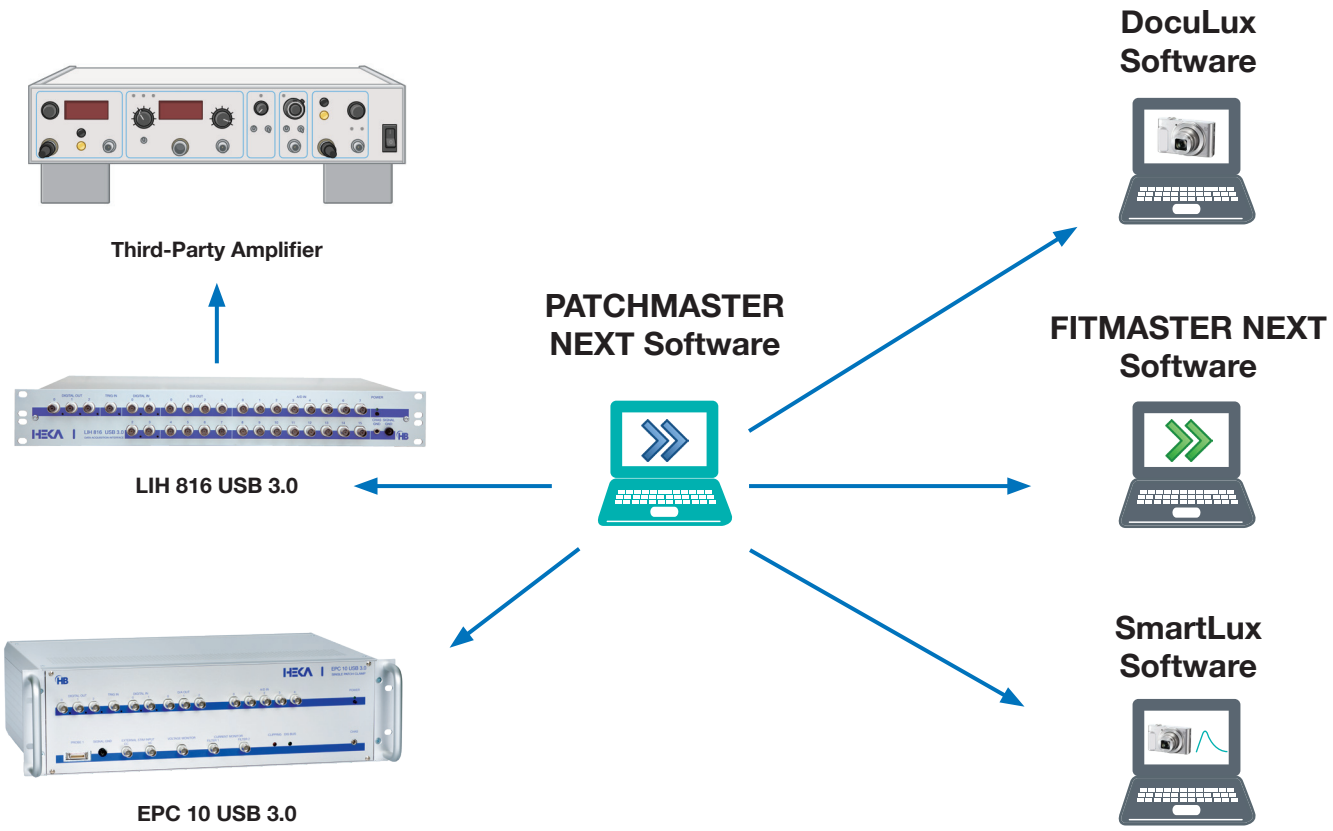
HEKA's data acquisition and analysis software suite streamlines electrophysiology research from the start of the experiment to publication-ready data analysis. Our software's core competencies deliver speed and accuracy based on a fully-automated, interactive data acquisition process, instant access to online data analysis, and quick and robust data fitting algorithms.



- PATCHMASTER NEXT is a multi-channel stimulation and acquisition software with remote control over the amplifier. It's a 3-in-1 software application that commands the amplifier, data acquisition, and analysis.
- The intuitive Protocol Editor enables complete automation of entire experiments and the creation of complex experimental arrangements by combining user-defined stimulus sequences with other operations.
- FITMASTER NEXT facilitates advanced analysis of electrophysiological data. The software's workflow permits trace processing to clean raw data, comprehensive trace analysis through measuring tools, trace fits, event detection, and series analysis of datasets.

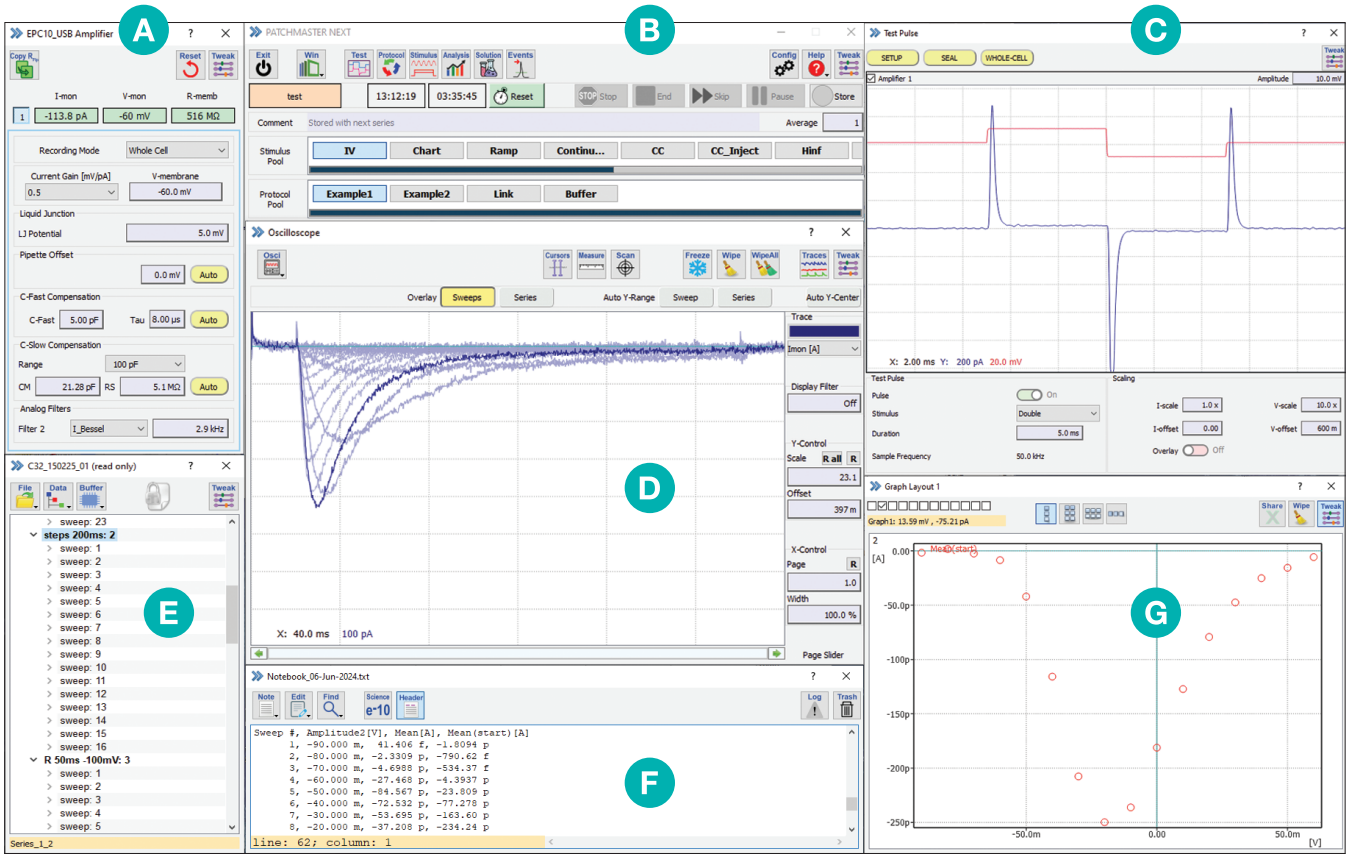
Key Benefits

- **Improved interface –** The modern graphical user interface, the highly intuitive workflow, and the logical structure of the procedures ensure that users (novice or experienced electrophysiologists) can quickly become familiar with the software operation, features, and functionalities.
    - Multiple user profiles and pre-configured settings for specific applications help increase functionality and ease of use.
- **Full software control of the experiment –** The PATCHMASTER NEXT software allows complete remote command of the data acquisition and experimental proceedings, resulting in a high degree of automation, versatility, and reproducibility.
- **Advanced and automated data analysis routines –** FITMASTER NEXT is equipped with an extensive data analysis toolkit to facilitate trace processing, cyclic and series analysis, mathematical function fitting, and data reporting. Save time by automating data analysis routines with full flexibility in data arrangement.
- **Seamless compatibility –** The PATCHMASTER NEXT and FITMASTER NEXT software are supported on Microsoft Windows and Mac OS, suiting users' preferences and supporting compliance with institutional IT security protocols.
    - Export data to compatible third-party software, such as Igor Pro, or in wide range of data formats, such as ASCII.
    - **NEW!** HEKA's microscopy image acquisition software, DocuLUX and SmartLUX, can also be integrated with PATCHMASTER NEXT.



PATCHMASTER NEXT

PATCHMASTER NEXT controls all the amplifier features, manages data acquisition and the integration of third-party devices for parallel data collection, and integrates online data analysis capabilities.



- A multi-window mode improves the visualization of experimental information, such as the amplifier settings, stimulation sequences, data traces, and online results, empowering users to observe experimental parameters in real time through flexible customization adjustments.

A) Amplifier Window - Maintain complete control over your amplifier and observe real-time information on current, voltage, and resistance values.

B) Control Window - The control center of PATCHMASTER NEXT. You can command your experiments and access all Windows and software settings here.

C) Test Pulse Window - Dedicated test pulse oscilloscope for visualization and management of patch procedures. Monitor and detect changes in Patch Clamp conditions during ongoing experiments.

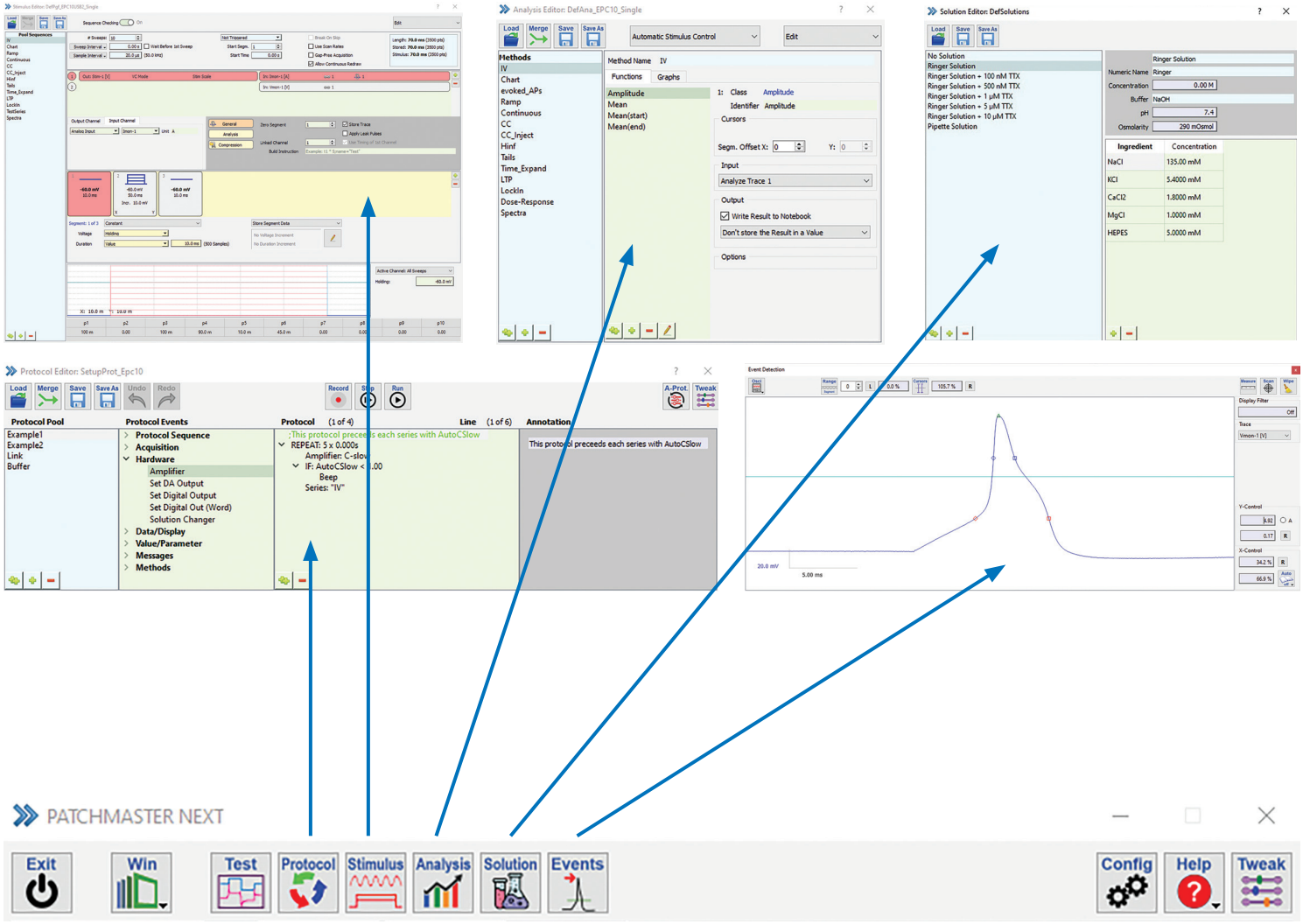
D) Oscilloscope Window - Observe live recordings and replayed data traces. Perform preliminary analysis using improved features and display parameters.

E) Data Tree Window - Access and view all the acquired data in the currently loaded data file. The tree-like structure enables easy data selection, storage, and organization with fast access to data-related functions.

F) Notebook Window - Collect data analysis results, logs, and all relevant software information. Write experiment notes for record-keeping purposes.

G) Graph Layout Window - Visualize plots of analyzed results online or offline. Customize graph display and export options.

Easy-to-access editors facilitate working under reproducible experimental conditions, tracking study settings and analysis routines, and optimize automated data analysis both online and offline.



Protocol Editor Window - Fully automate entire experiments with straightforward protocol creation to command the amplifier, direct data acquisition, and execute automatic data analysis.

Stimulus Editor Window - Define complex stimulation sequences via an intuitive interface that enhances workflow.

Analysis Editor Window - Create analysis methods effortlessly. Analysis features and functions are methodically sorted to increase usability.

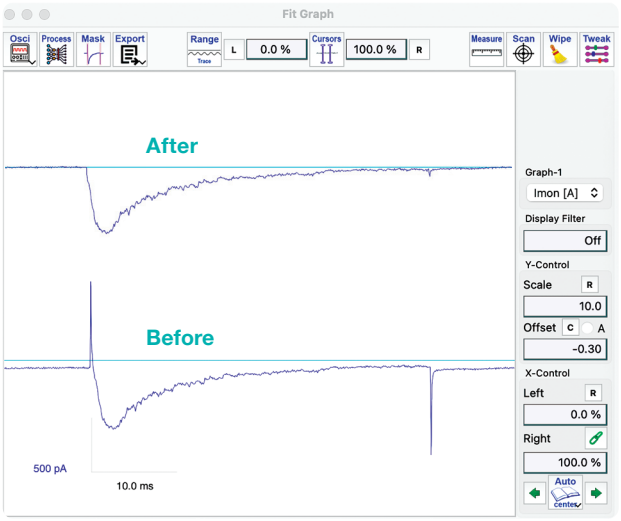
Solution Editor Window - Manage and organize the pipette and bathing solutions used in your experiments.

Event Detection Window - Analyze spontaneous or triggered events and define parameters for event detection and analysis.

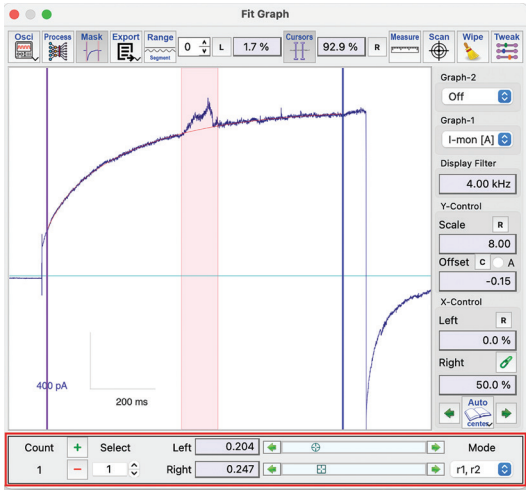
FITMASTER NEXT

FITMASTER NEXT supports routine and automated data analysis of electrophysiological data while providing full flexibility for exploratory data analysis and the handling of non-ideal datasets.

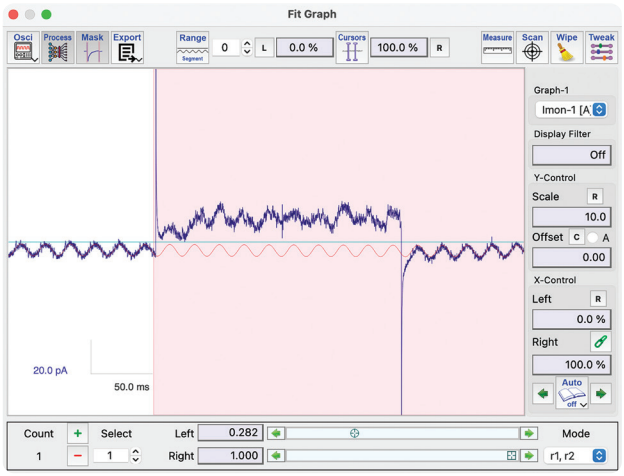
Trace Processing



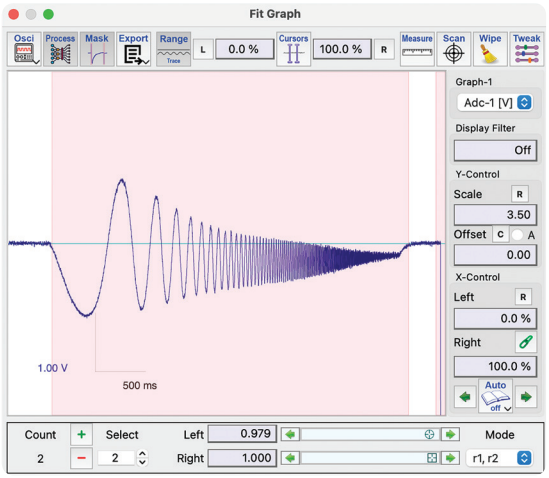
Leak Subtraction & Capacitive Transient Correction



Data Masking



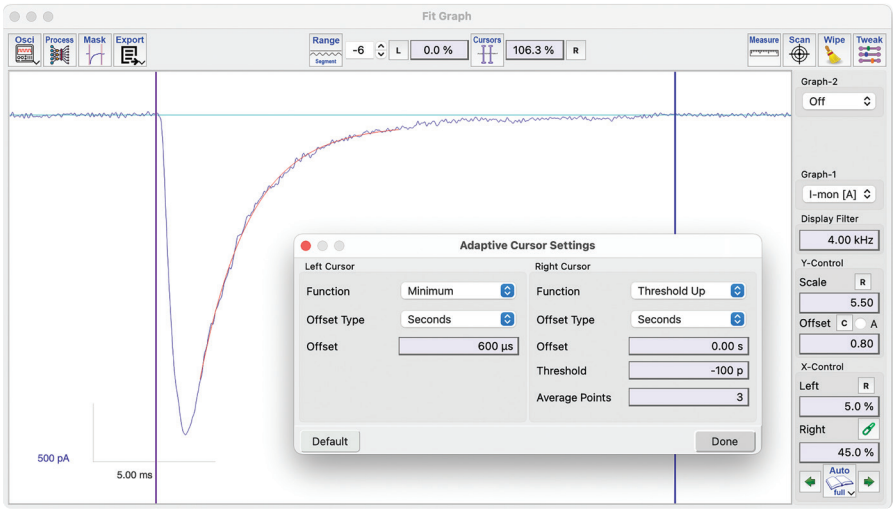
Hum Subtraction



Baseline Subtraction & Normalization

- Manage challenging datasets and eliminate data artefacts with advanced trace processing features that improve traces representation and data quantification. Digital filtering and smoothing options include leak subtraction and fit, capacitive transient correction, data masking, baseline subtraction and normalization, and hum correction.
- Get immediate insights into your dataset through QuickFit features to help decide the best data analysis methods and algorithms.

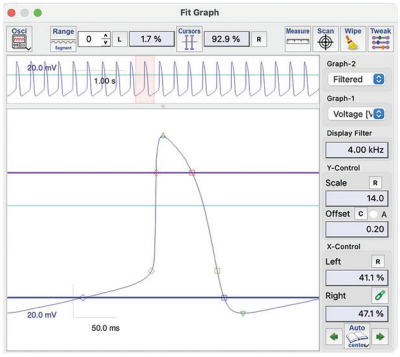
Trace Analysis



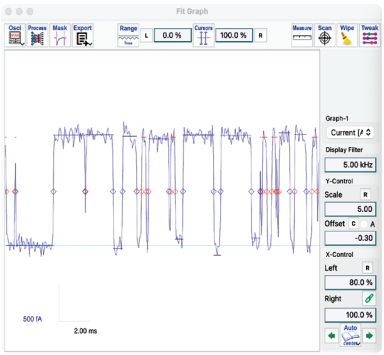
Adaptive Cursors

- Adaptive cursors permit dynamic, automatic data analysis alongside advanced trace fit calculations with linked fit parameters. Select the best fit for the data from various tailored functions, such as exponentials, Gaussian, Boltzmann, Hodgkin-Huxley, and dose-response, among others.

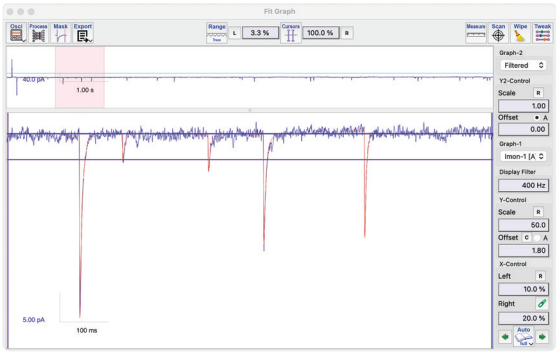
Event Detection



Action Potentials



Single Channel

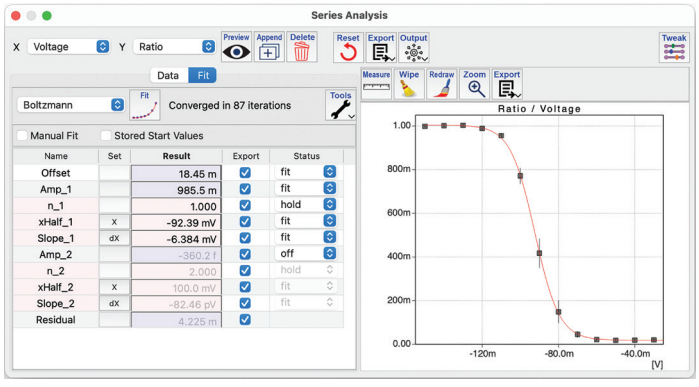


Postsynaptic Currents

- The Event Detection module expedites the analysis of spontaneous or triggered events, such as action potentials, single-channel activity, or post-synaptic events, and automatically derives analysis parameters from those traces.

Series Analysis

- Fit and graph series analysis saves data interpretation time and provides descriptive statistical graphs and tables for the visualization of multiple analyses.



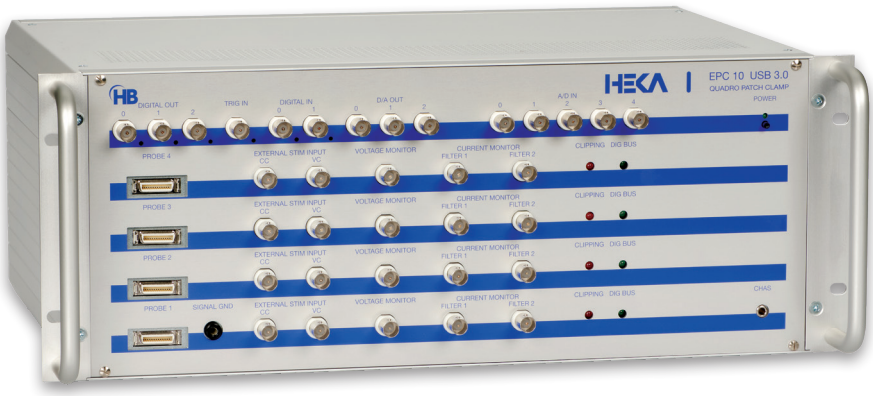
Series Fit & Analysis

Ready to get started?

Reach out to speak with a sales representative and start building your Patch Clamp rig today.

Contact HEKA online

Scan to request more information or get a quote



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