

NEW!

DATA ACQUISITION SYSTEM WITH INCLUDED SUTTERPATCH® SOFTWARE ENSURES QUICK AND EASY SETUP

EIGHT ANALOG INPUTS

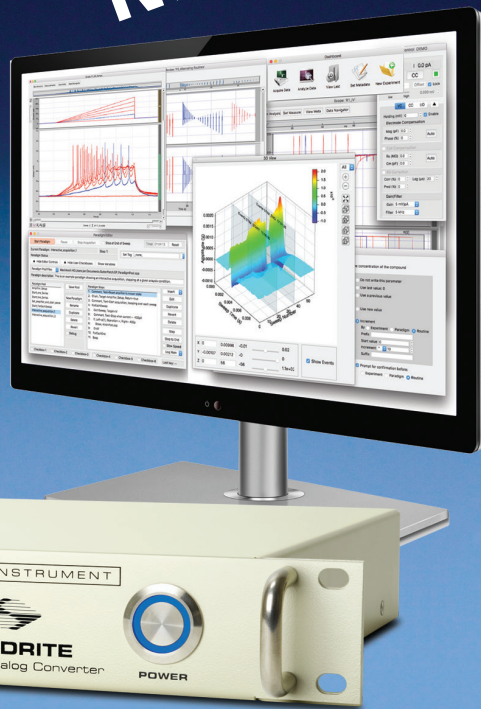
FOUR ANALOG OUTPUTS

EIGHT DIGITAL OUTPUTS

TRIGGER IN- AND OUTPUT

BUNDLED SUTTERPATCH® SOFTWARE EXCELS IN COMPREHENSIVE DATA MANAGEMENT, INTUITIVE NAVIGATION, AND STREAMLINED DATA ANALYSIS

LINE FREQUENCY REDUCTION IN SUTTERPATCH®



DENDRITE™ DATA ACQUISITION, MANAGEMENT AND ANALYSIS SYSTEM

The conventional architecture of an electrophysiology system follows a three-tier structure, consisting of an amplifier, a computer interface, and data acquisition software. Sutter Instrument's patch clamp amplifier systems, the **IPA®** Family and the **dPatch®** Amplifier systems combine these three tiers into convenient, fully integrated packages that include the increasingly popular **SutterPatch®** Data Acquisition, Management and Analysis Software. The **Dendrite™** system meets the needs of customers who want to combine an existing amplifier with the functionality of **SutterPatch** software.

Featuring eight analog input signals, four analog output lines and eight digital outputs, at a sampling rate of up to 50kHz, the **Dendrite** system covers the majority of electrophysiology applications. Independent 16-bit A-D and D-A converters constitute state-of-the-art technology that avoids crosstalk and provides adequate resolution for virtually all use case scenarios. Trigger in- and output lines enable coordination with other equipment.

Connection to the computer is conveniently established through a High Speed USB 2.0

connection, and the installation of drivers and **SutterPatch** software is typically done within minutes. The **Dendrite** system accepts input from the majority of patch clamp and other electrophysiology amplifiers that comply with the common standard of +/-10 V signal range. It also controls amplifiers and peripherals that accept analog or digital input according to common standards.

SutterPatch Software

The **Dendrite** and **SutterPatch** software system has been engineered to let the user add information about instrument settings, stimulus application and external experiment parameters and associate them in time with the raw data traces. This includes all acquisition settings, as well as timing and progress of the experiment. In addition, the experimenter can manually trigger tags to document events like stimulus application in instruments not connected to the **Dendrite** system.

Information about environmental parameters and a more detailed specification of sample properties can

be recorded and stored with the raw data. A total of over 600 metadata attributes are supported. Examples include: animal species, strain, genotype, date/time when a cell sample was prepared, recording solutions, pipette resistance, hardware properties, and detailed information about stimuli applied.

Data Visualization and Analysis

SutterPatch software has been designed to simplify the navigation and analysis of complex datasets. The scope window supports multiple view modes in both two-dimensional and an innovative three-dimensional display. The 3D view is particularly useful during assay development. Built on top of the latest version of the proven Igor Pro platform, the **SutterPatch** program combines native Igor Pro functionality with a wealth of features that are tailored to electrophysiology applications. Both the newcomer and the experienced user of patch clamp programs will feel comfortable using **SutterPatch** software.

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Back panel

Data Acquisition

- High-speed USB connection controls data acquisition
- Up to 8 analog input channels (± 10 V; 0.1–50 kHz sampling rate per channel)
- 4 analog output channels (± 10 V)
- 8 digital output channels (TTL)
- Up to 400 kHz aggregate sampling rate
- Complex command waveforms
- Data acquisition can be initiated by an onboard microsecond clock or external (TTL) trigger

SutterPatch[®] Software

- Built on the foundation of Igor Pro (WaveMetrics, Inc.)
- Paradigms and Routines provide complete experimental control
- Waveform Editor for easy creation of even the most complex stimulus patterns or user-defined templates
- Associated metadata stores all relevant information regarding your experiment
- Comprehensive data analysis routines and publication-quality graphics
- Rapid-response online line-frequency reduction
- Runs on Windows 7 or later (64-bit), or Macintosh OS X 10.11 (El Capitan)

Application modules provide focused functionality for particular applications.

- Event Detection Module: A deconvolution algorithm that excels at detecting miniature synaptic events even on a noisy background.
- Action Potential Analysis Module: Phase plane plot, timing and waveform statistics.
- Camera Module: An easy way to document the identity and condition of the recorded cell.
- Single-channel Analysis Module: All-points histogram, idealized trace, duration and amplitude distribution and scatter plot

