

Advancing medical technology to help you, help others.





## The Cadwell Difference

### Experience The Cadwell Difference – Since 1979

The benefits of owning a Cadwell system are numerous. Our development team understands and delivers what you need. Everyone at Cadwell stands behind our products and we all have the same goal - to keep you as a loyal, devoted customer long into the future.

### Innovative Instruments for Neurophysiology

John Cadwell, BSEE, MD designed the first microprocessor controlled EMG instrument. In 1979 he and his brother Carl, DDS, formed Cadwell Laboratories, Inc. and began selling their device. Since then, Cadwell has been a leader in the development and manufacture of innovative and reliable instruments for neurophysiology. Many instruments have been providing decades of service to their owners.

Numerous patents are held by Cadwell, including those for magnetic stimulators, cable shielding designs, neural network analysis of EEG and database designs. Today, still located in Kennewick, Washington, John and Carl continue ownership of the company and work to develop and market products ranging from EMG to EEG to PSG to IONM instrumentation and more. Cadwell has a firm hold of its identity and a dedicated focus on neurophysiology.

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the Standard in IONM

### Setting the Standard in IONM.

The Cadwell Cascade is a powerful, multi-modality system capable of performing EP (including SEP, TceMP, BAEP, VEP), free-run EMG, stimulated EMG, EEG, and train of four tests simultaneously. The Cascade can also be used clinically for multi-channel evoked potential testing and other applications.

The Cascade was designed with portability as a priority. The base unit weighs only 4.25 lbs. The Cascade can be configured with a laptop computer for portability or as a desktop PC-based system.

**Come stand above the rest.**



Cascade 16-channel amplifier with one input extender attached.



## Features of the Cascade

### Amplifier

The Cascade amplifier utilizes Crosspoint Technology. This unique technology provides the flexibility of a referential amplifier with the super quiet qualities of a true differential amplifier.

- 16 channel/32 input configuration
- Dynamic montaging allows any combination of inputs be connected to a channel for unlimited channel utilization
- Each channel has independent gain, hi-cut and lo-cut filter controls
- Extensive shielding minimizes interference associated with long electrode cables

### Input Extenders

Input extenders effectively place the amplifier inputs closer to the electrode site. The patented shielding in our cable significantly reduces noise and allows the use of shorter electrode cable lengths. The main amplifier may be placed away from the operating table without any loss of signal fidelity or increase in interference.

- Each patented extender has eight inputs plus one ground with a molded shielded cable

### Electrical Stimulators

The Cascade has a variety of electrical stimulator options to suit a wide range of needs. Cascade stimulators display actual current delivered so you always know how much current is being delivered to the patient.

- ES-5-5: Four high current outputs (0-100 mA) and one 0-5 mA output
- ES-5-100: Five high current outputs
- ES-5-5V: Four high current outputs and one 0-5V output. This device does not provide current delivery information
- ES-16: 15 high current outputs and one 0-20 mA low current output
- ES-5-20: Four high current outputs and one 0-20 mA output

- TCS-1: A constant voltage, transcranial stimulator with programmable train stimulation, 800V and 1000 mA
- TCS-1000: A constant voltage, transcranial stimulator with programmable train stimulation, 1000V and 1000 mA
- ES-5: Four high current outputs and one 0-10 mA low current output, can be daisy chained with other ES-5. This device does not provide current delivery information.

### EP Stimulators

- Auditory click with insert earphones, shielded or lightweight headphones
- Visual with LED goggles or strobe flash



ES-16 Stimulator



ES-5-5 and ES-5-100 Stimulators

## Versatile System Configurations

The Cascade is available as a portable or cart-based system. For mobile users, the rugged hardware stands up to the rigors of being transported. All the components fit easily into our carry-on size rolling case for ease of travel. The case has smooth rolling wheels, a durable handle and looks professional. The optional laptop bag allows you to breeze through airport security and the optional accessories duffel bag is perfect for electrodes. Whether you're taking your Cascade across the hall, across town or across the country, be assured that it will perform flawlessly.



Cascade system on a narrow trolley cart.



TCS-1 Stimulator

## Easy Positioning

Whether you are the sole user at a single hospital, or on the move monitoring in multiple facilities, the Cascade is the most advanced, easy to use neuromonitoring instrument available today. The software is so intuitive and logical you'll be amazed at how much time is saved setting up before surgery and how easy it is to make changes during surgery. The small, compact design fits into the crowded OR and can be easily moved from one hospital to another. After all, more informed surgical teams lead to better patient care; and that's what matters most.



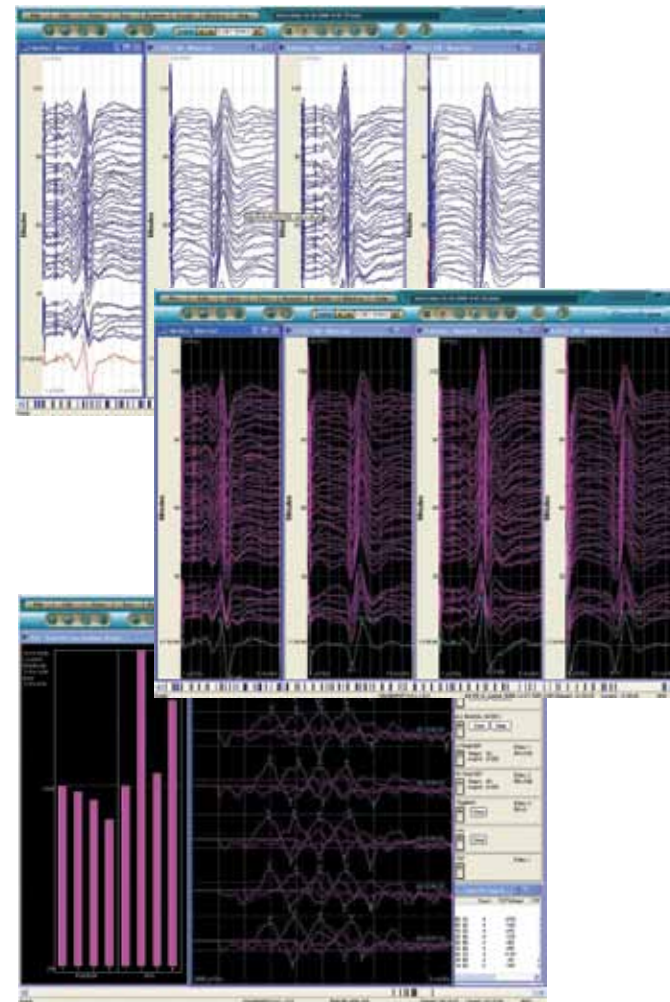


## Software options

The Cascade software offers sophisticated, powerful and easy to use features that allow you to provide superior care to your patients.

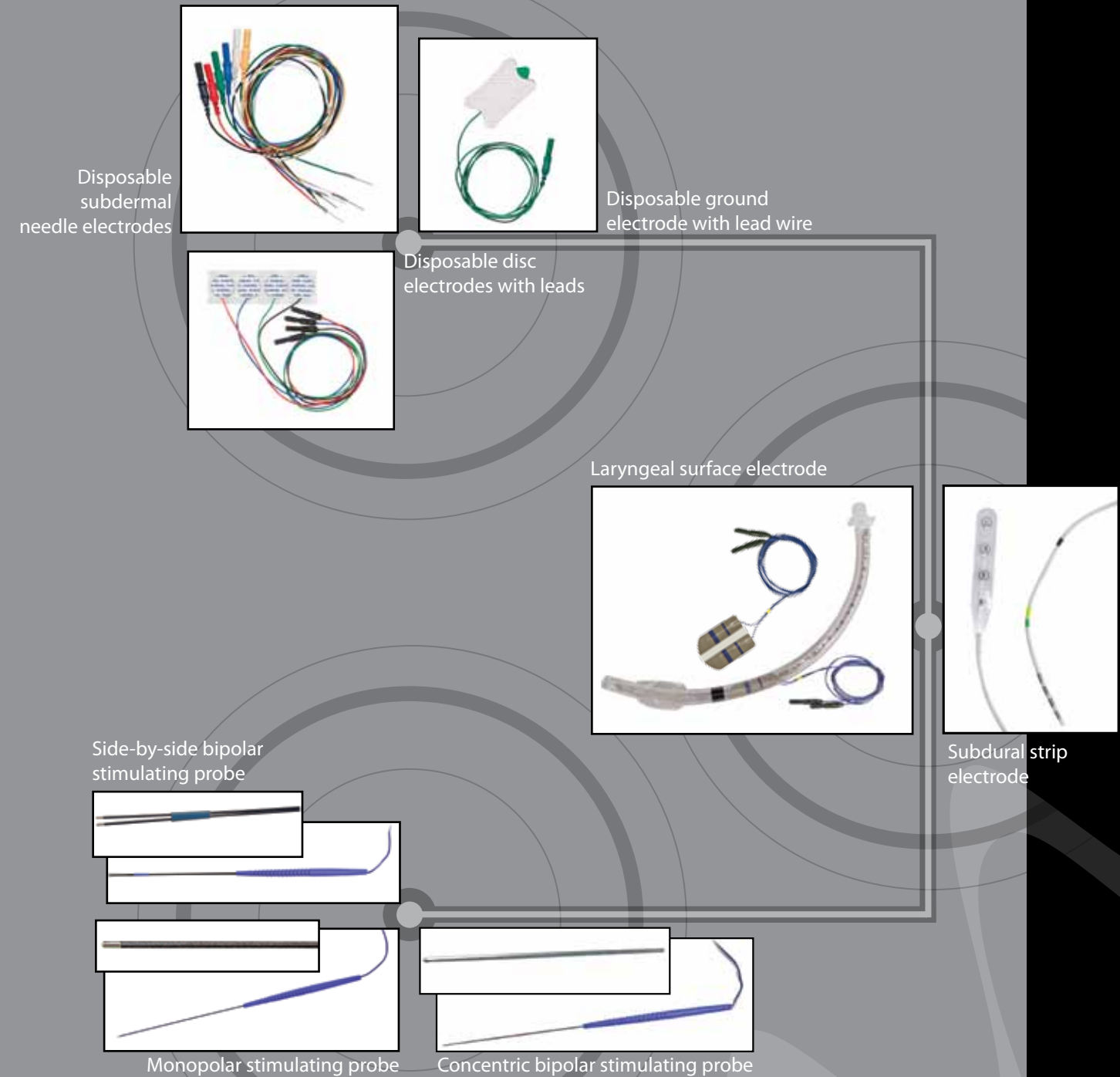
- Logical and intuitive keystrokes and mouse clicks using our Windows® XP software interface.
- Flexible data views give you the data you need when you need it.
- Unique procedure setup makes it easy to build and edit a test.
- True interleaving of multiple stimuli or manual control of each modality.
- Reporting features you've come to expect from Cadwell, such as traces, tables, predefined paragraphs, automatic sentence generation and more.
- Resize, move, maximize, or minimize any data window any time with a single mouse click.
- Detect electrosurgical devices and automatically pause acquisition and mute audio during their use.
- NerveGuard™ automated EMG and threshold detection software reduces testing time.
- Files and event lists can be easily transferred to other Cascades, saving time in facilities with multiple systems.
- Auto Place Cursors feature accurately marks peaks for you.
- Stimulus Delivery Tone feature lets you and the surgeon know when the stimulus probe touches the patient.
- Pre-defined or "on the fly" comments can be added to the event record along with averages and related video images.
- Unique user interface allows you to improve signal quality by quickly setting individual reject threshold levels for each channel.
- Review stored EEG and watch live EEG at the same time.
- EMG threshold detection with auto capture, auto store and selectable sound presentation (beeps, words, muscle name, etc.).
- Custom trace labels give you instant access to critical information.

- Flexible trending displays give you important data at a glance.
- Window for surgical microscope or other video views.
- Built-in impedance testing for all amplifier inputs.
- Review cases on other compatible PCs.
- Review the record exactly as recorded anytime throughout the procedure.
- Extensive help files explain every component of the system.
- Copy and paste windows, screens or event lists into other outside applications.
- Built-in amp calibration and self diagnostics.
- Train of Four modality.
- CSA, DSA and trending.
- FFT and digital filter package.



## Supplies and Accessories

Cadwell has a complete range of quality, reliable supplies as well. From subdermal needles; disposable and reusable surface electrodes and a wide variety of stimulus probes. We are your one-stop source for everything neurophysiology related.





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