

Cadwell IONM

Precision and reliability in every system



Powerful. Scalable. Proven.

For two decades, Cadwell has set the standard in intraoperative neurophysiological monitoring (IONM). Our specialized platforms—Cascade PRO®, Cadwell Guardian™, and Cascade® IOMAX®—are each purpose-built to deliver precise clinical insights for hospital programs and mobile service providers.

- **Clinician-centric design:** Scale your system to meet the specific requirements of any surgical procedure.
- **Intuitive software:** Access precise insights with Cascade Surgical Studio® software, continuously refined based on end-user feedback.
- **Flexible integration:** Cadwell IONM systems connect seamlessly with institutional PCs that meet minimum specifications, reducing IT overhead and deployment barriers.
- **Support for life:** Every system includes CadCare®, Cadwell's lifetime commitment to providing education, service, and support from clinical and technical experts.



Cascade PRO

Mobility without compromise

The Cascade PRO system is the most portable IONM solution in the Cadwell family. Its pod-based architecture provides a high-performance monitoring solution for space-constrained environments.

Designed for maneuverability

Delivering Cadwell's smallest IONM system footprint, Cascade PRO weighs just 6.8 kg (15 lbs), supporting ease of use in the OR.

Flexible configuration

Support 16 to 32 channels using up to two Cascade PRO amplifiers with touch-proof connectors. Patented input extender pods enable discrete placement and easily adapt to every surgical environment.

High-voltage transcranial motor stimulation

Deliver high-voltage transcranial motor stimulation with the TCS-1000 and TCS-4. The TCS-4 supports up to four single anode/cathode combinations, selectable via Cascade Surgical Studio software.

Electrical stimulation

The ES-IX Stimulator 2 offers high and low output stimulation, supporting up to 16 outputs for applications such as peripheral nerve stimulation and direct nerve stimulation.

Designed for:

- IONM teams in need of high mobility across surgical locations
- Outpatient or ambulatory surgical centers
- Mobile IONM providers
- Facilities with streamlined OR configurations



Cadwell Guardian

Next-generation design, built to scale

Our newest addition to the Cadwell IONM family—Cadwell Guardian—is purpose-built to scale from routine to complex surgical cases. This innovative solution combines a familiar pod-based design with advanced recording and stimulation capabilities, balancing scalability, portability, and power in a single system.

High-channel count recording

Capture 24 or 48 channels using Omni Amplifiers with detachable input extenders that disconnect at the system and patient ends.

Simplified bedside positioning

Daisy chain up to two ES-10™ stimulators for a total of 16 mid current and 4 low current outputs. Simplify device positioning at the patient bedside with daisy chain connection between one AVX stimulator and up to two ES-10 stimulators.

Enhanced EPs

Perform AEP and VEP testing with the AVX™ Stimulator and Glow Goggles® featuring 9 white LEDs and disposable foam.

Optimized MEPs

Utilize the TCS-9 Output Extender to provide nine software-configurable transcranial stimulator outputs.



Seamless stimulation and recording

Switch seamlessly between stimulation and recording with the SMX-32™ EEG amplifier with low current stimulation—a single solution for cortical and subcortical mapping.

Durable hardware

Components feature:

- Keyed cable connectors with recessed pins
- Drop-tested modules with high-impact bumpers and pods with overmolded connector protection
- Electrosurgical suppression
- Resistance to fluid ingress

Designed for:

- Surgical environments requiring robust neuromonitoring capabilities
- Research facilities
- Complex surgical cases



Cascade IOMAX

Our most durable system, built to perform in every environment

Cascade IOMAX is Cadwell's most rugged and versatile IONM system, engineered for advanced surgical monitoring. Delivering a modular design and the versatility to scale from 8 to 80 channels, Cascade IOMAX is adaptable from routine cases to complex procedures.

Modular design

Utilize the Cascade IOMAX 32-Channel Amplifier to record EEG and direct cortical SSEPs. This module can be added to any Cascade IOMAX configuration or connected directly to the Base Module.

Single cable setup

Streamline setup with SafeT[®] cables, featuring waterproof, color-coded, quick-release metal connectors. Cables are fully interchangeable between the Cortical Module, Limb Modules, 32-Channel Amplifier, and Base Module.

Direct cortical stimulation

Use the IOMAX Cortical Module alone, or combine it with up to four Limb Modules. The Cortical Module features 16 recording channels, nine transcranial MEP outputs with dynamic TCS-9 montaging, low current stimulation, auditory stimulation, and visual stimulation.

Flexible modules for limb stimulation

Use one or two Cascade IOMAX Limb Modules independently, or combine one to four Limb Modules with the Cortical Module. Each Limb Module offers eight recording channels, five paired E-Stim outputs, SpO₂, and heart rate.

Comprehensive switch matrix

Simplify direct cortical stimulation with LCSwap[®], Cadwell's comprehensive switch matrix featuring 12 outputs independently assignable as anode or cathode, plus two paired outputs for handheld probes.

Engineered for maximum durability

Drop-tested and IP-67 waterproof components, plus rugged SafeT cables support reliability and durability in the operating room.

Designed for:

- Hospitals and service providers using a minimum of three modules, high-channel count, interchangeable cables, and extender pods
- Research facilities
- Complex surgical cases



Cascade Surgical Studio software

Developed in collaboration with physicians and techs, Cascade Surgical Studio delivers intuitive features that scale to your needs. Featuring customizable dark and light themes, streamlined workflows, and continuously added features, the software helps you make the most of your Cadwell IONM system.

Monitor all modalities

Monitor all modalities concurrently on a unified interface. Easily integrate somatosensory, auditory, and visual evoked potentials; EEG; EcoG; spontaneous and triggered EMG; transcranial MEPs and D-Wave; direct cortical and sub-cortical stimulation; and train-of-four analysis.

Access enhanced clinical insights

Spectral Entropy EEG Trends provides real-time quantitative data for anesthetic depth, displayed by quadrant, hemisphere, channel, or all cortical channel views. Easily set thresholds and trigger alerts to identify changes, and seamlessly incorporate spectral entropy data into reports.

Streamline troubleshooting

Gain real-time visibility into the health of your connected devices, the PC, and overall network performance with the System Status tool. A complete connectivity diagram with color-coded status indicators helps you easily identify and resolve issues—including disconnected devices or cabling problems.

Acquire quality data

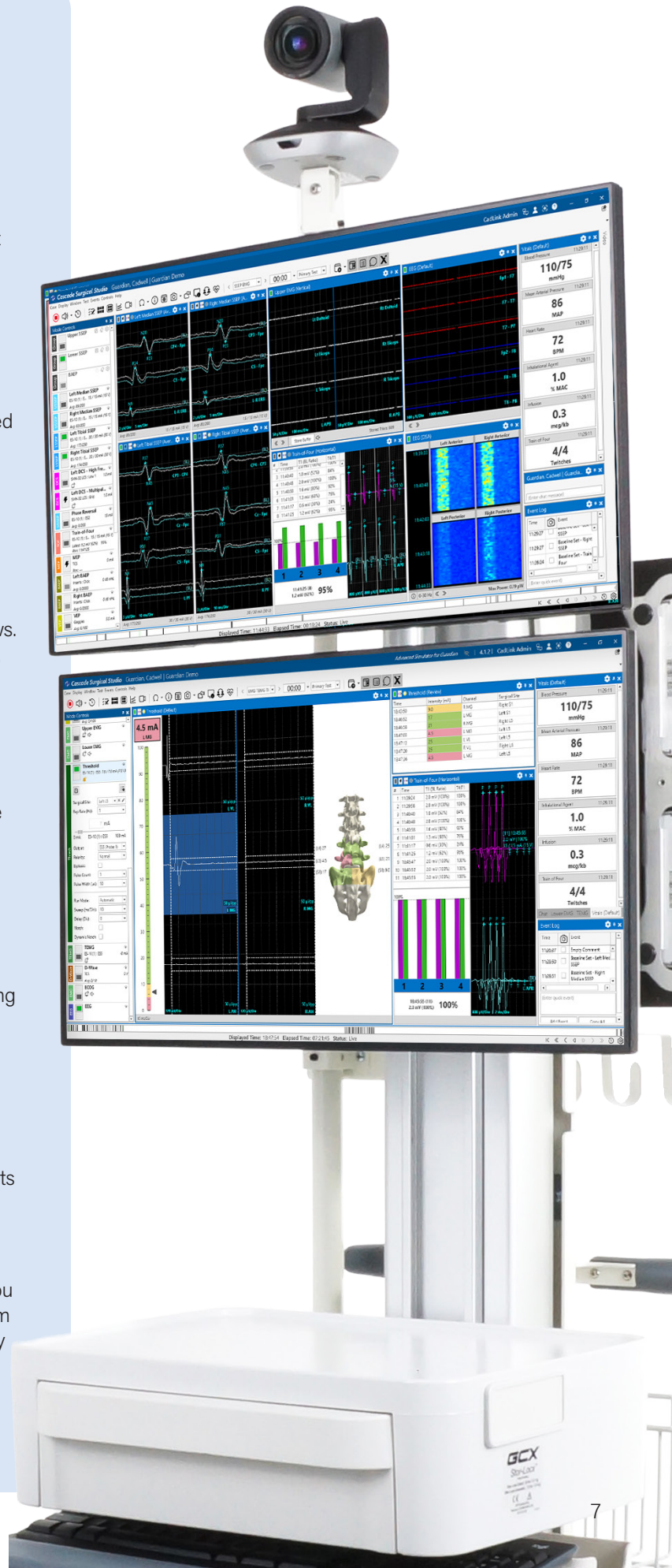
Automatically pause data acquisition and mute audio during ESU, quickly adjust noise specific reject thresholds, and filter harmonic noise.

Maintain clinical compliance

Set and manage deadlines for diagnostic tests directly within the software. Schedule reminder notifications and access the history of tests run on each machine. Test results are automatically linked to clinical records or case files.

Strengthen documentation and reporting

Standardize reporting with intuitive controls that enable you to enter comments directly within the software, use custom Microsoft Word-based report templates, and automatically document remote reviewer connections.



CadX Surgical Simulator

Risk-free preparation

Refine clinical skills and build confidence outside the operating room with CadX® Surgical Simulator. CadX enables surgical teams to replicate real-world IONM scenarios using the same workflows found in live cases.

Train your way—risk-free

Trainees can independently explore how manipulating parameters impacts monitoring data, or educators can take full control of the session, customizing the clinical scenario for individuals or groups.

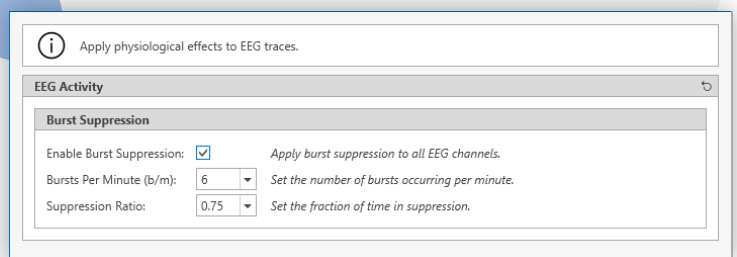
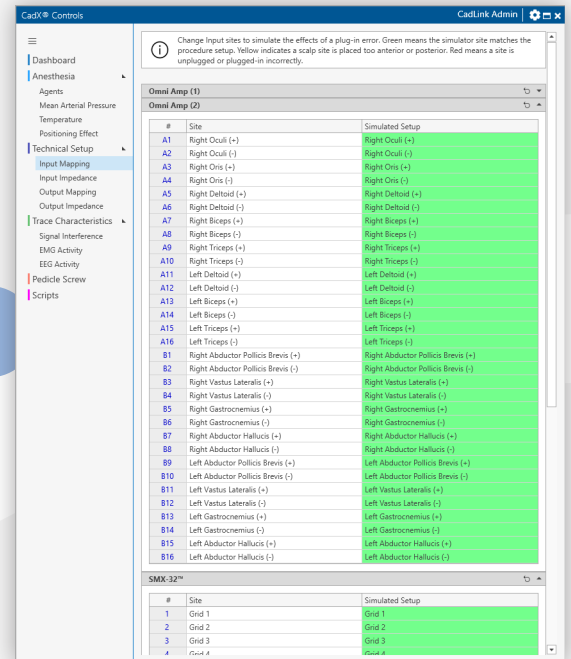
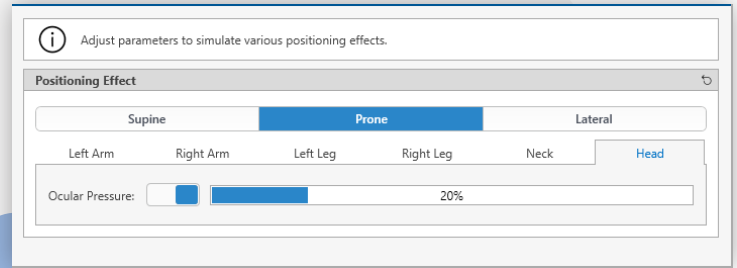
Customize and control every scenario

Use the in-app control panel to introduce variables like anesthesia effects, technical setup errors, physiological artifacts, or pedicle screw simulation. Adjust parameters and instantly view waveform responses, giving trainees immediate and actionable feedback.

Integrate advanced simulation features

Access comprehensive training across modalities, with advanced features like EEG burst suppression and VEP simulation.

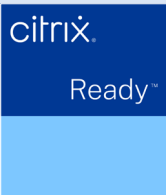
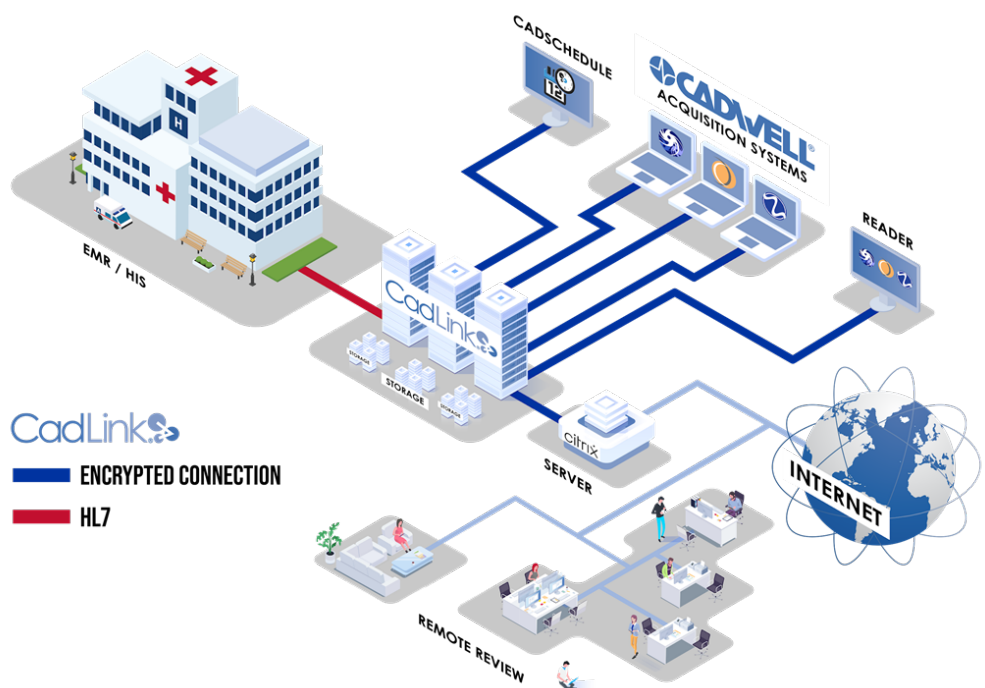
» Explore how CadX Surgical Studio can help prepare your surgical team.
cadwell.com/cadx



Access, manage, and secure patient data, anywhere in your network

Organize, manage, and secure your patient files and customize user settings with CadLink®, Cadwell's enterprise-level patient information and database management system for IONM, EEG, and EMG.

- **Enterprise-level security:** Ensure safe and HIPAA-compliant transfer of encrypted data.
- **CadSchedule®:** Eliminate redundancy and error by scheduling tests, visits, patients, rooms, and providers from any CadLink PC.
- **Flexible EMR integration:** Import patient information from the HIS/EMR, and export results and reports back to the EMR with HL7 support.
- **Save storage space:** Save data automatically according to pre-defined criteria with Auto-Archiving, ensuring short-term storage never gets full.
- **Direct Connect:** View cases in real-time, even if a server issue arises.
- **Scalable performance:** Compatible with concurrent user systems (Citrix, RDP, and VMWare), Citrix XenApp, XenDesktop, and PVS 7.6 LSTR and 7.15 LSTR.



Flexible work stations

C1 Cart

For Cascade PRO.

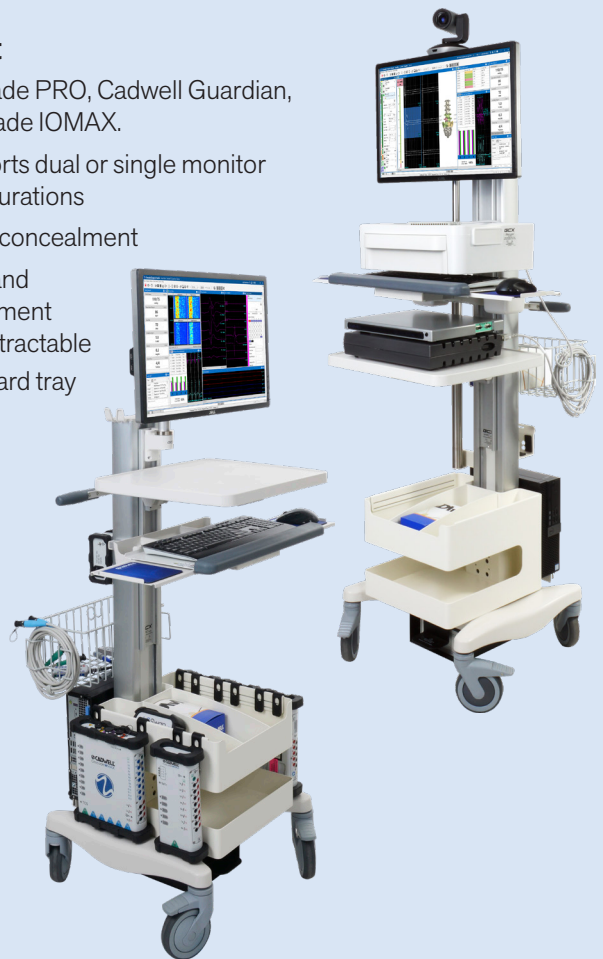
- Height adjustability
- Isolation transformer
- Storage basket
- Hardware bin
- Storage bin
- Optional telescopic cameras



C2 Cart

For Cascade PRO, Cadwell Guardian, and Cascade IOMAX.

- Supports dual or single monitor configurations
- Cable concealment
- Sit/stand adjustment and retractable keyboard tray



C3 Cart

For Cascade PRO, Cadwell Guardian, and Cascade IOMAX.

- Supports single or dual monitors in stacked or clamshell configuration
- Lockable storage cabinet
- Removable drawer
- Recessed storage shelf
- Slide out shelves
- Rear mast door for cable management



Travel cases

Durable carry case options available for Cadwell IONM systems, featuring 360° spinner wheels and TSA-approved locks.



Electrodes, supplies, and accessories

Everything you need to run an IONM study.

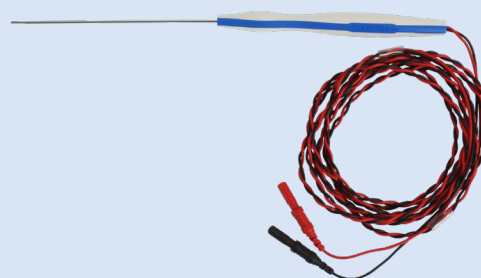
Subdermal needle electrodes

Featuring disposable, parallel-paired, corkscrew, bent, twisted pair, single, and ENT needles.



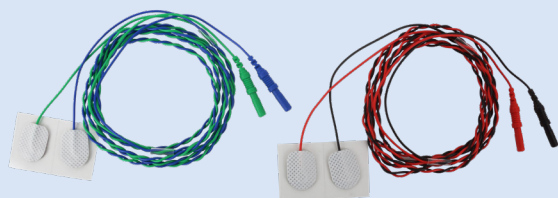
IONM probes

Including disposable monopolar, flush tip, ball-tip, concentric, side-by-side bipolar, bipolar cortical stim ball-tip, double and triple hook, double ball-tip, and suction stimulator.



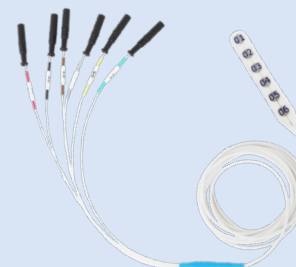
Adhesive electrodes

Disposable surface silver/silver chloride gelled electrodes for recording muscle activity or nerve signals.



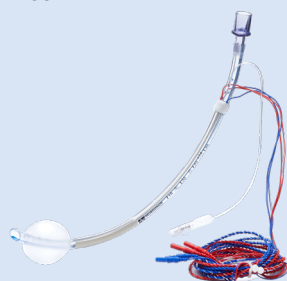
IONM subdural strip and grid electrodes

Sterile, single-use electrodes with integrated leads and touch-proof connectors for stimulation and brain mapping.



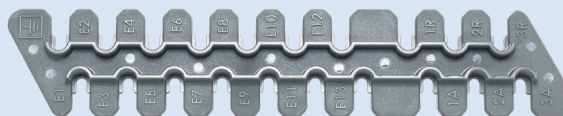
Endotracheal tube (ET) electrodes

Robust electrodes for impedance optimization, durability. High volume, low pressure cuff. Color-coded wires.



Quick adapts

Reusable accessory that enables streamlined organization, insertion, and removal of an entire pod's electrodes at once.



» Shop the Cadwell online store today.
estore.cadwell.com



We are always here for you

When you purchase your equipment from Cadwell, you become part of the Cadwell family, where a lifetime of care is guaranteed.

Education and training

Credentialed learning pathways led by industry-leading clinical specialists.

Service and support

Extended service maintenance plans and comprehensive support that help your systems stay up and running.

Financial solutions

Flexible financing and rental options to scale your equipment fleet.



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» info@cadwell.com » www.cadwell.com