NeuroWave

HARNESSING THE POWER OF EEG

Introducing: NeuroSENSE® Monitor

With WAVcns Bilateral Indices

Because **monitoring**
the brain **matters**

Our Mission

Develop, manufacture, and market patient monitoring products using advanced signal processing of brain waves for Neurology, Critical Care, Anesthesia and Emergency Medicine clinical applications, to improve patient outcome and quality of life.

NeuroWave is proud to introduce the NeuroSENSE® NS-701 Monitor - the next generation brain function monitor for assessing the adequacy of anesthesia and sedation in the operating room, intensive care unit, and emergency room. The system offers clinicians a quantitative guide to aid in better titration of anesthetic or sedative drugs according to patient-specific needs.

Powered by leading-edge technologies in signal acquisition and processing of non-invasive electroencephalogram (EEG) signals, the NeuroSENSE provides accurate responses to changes in patient state – immediately, without delay.

The NeuroSENSE is a unique bilateral brain function monitor for anesthesia and intensive care that simultaneously provides independent indices of brain activity for each hemisphere. This offers clinicians greater reliability and insight to assist them in detecting brain asymmetry (due to, for example, unilateral pathology) and in making decisions for safer and improved patient care.

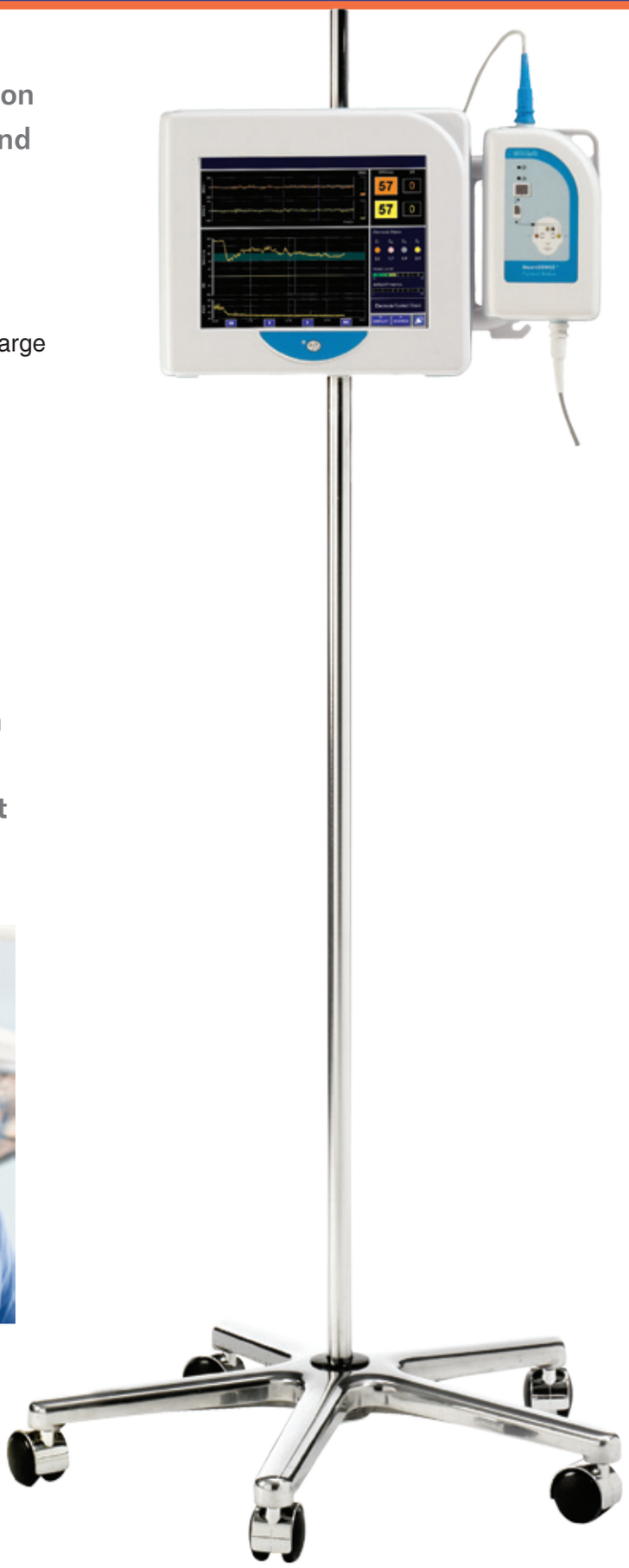
Improved patient outcomes

Known Benefits of Brain Function Monitoring

- Accurate patient-specific drug administration allows for adequate anesthesia/sedation and may lead to the following benefits

  - **Improved outcomes — patients can:**
    - Wake up faster and more predictably
    - Recover faster and be eligible for earlier discharge
    - Have decreased post-surgical nausea and vomiting
  - **Reduced likelihood of excessive depth of anesthesia or under-sedation**
  - **Reduced drug consumption and associated costs**

- Clinical quality EEG provides the user with continuous information about the patient's brain function to guide clinical decisions at the bedside



NeuroSENSE® Product Highlights

The NeuroSENSE Model NS-701 quantifies cortical activity. It acquires and displays two frontal EEG signals, and calculates a number of processed EEG parameters including the bilateral WAVcns indices — wavelet-based quantifiers of brain activity.

► Patented delay-free tracking of patient state via low-noise WAVcns bilateral indices [1]

- WAVcns (Wavelet Anesthetic Value for Central Nervous System) indices react instantaneously to changes in patient state
- Automatic trending facilitates immediate response without increasing the index noise

► True bilateral monitoring with great inter-hemispheric reproducibility [2]

- Increased reliability due to redundancy
  - Asymmetry due to underlying pathologies or unrecognized artifacts can be easily detected

- **Superior discrimination between consciousness and unconsciousness [3]**
  - Accurately determines patient state to support clinical decision
- **Linear response to increasing EEG suppression [4]**
  - More accurate quantification of deeper anesthetic states
- **Robust hardware and software with excellent signal quality:**
  - Advanced automated artifact detection and removal
  - Electro-surgical interference detection and filtering
  - Cardiac defibrillation-proof
  - Continuous measurement of electrode-skin contacts
- **Compliant with the guidelines of International Federation of Clinical Neurophysiology (IFCN) and American Clinical Neurophysiology Society (ACNS)**
  - High-resolution clinical EEG tracings suitable for interpretation by EEG clinicians
- **Raw EEG data is available for review**
- **Transparent and biologically understood, published algorithm [1]**
  - WAVcns is based on the gamma-band of the normalized EEG signal, linked to conscious processing and awareness.

Quality of Care

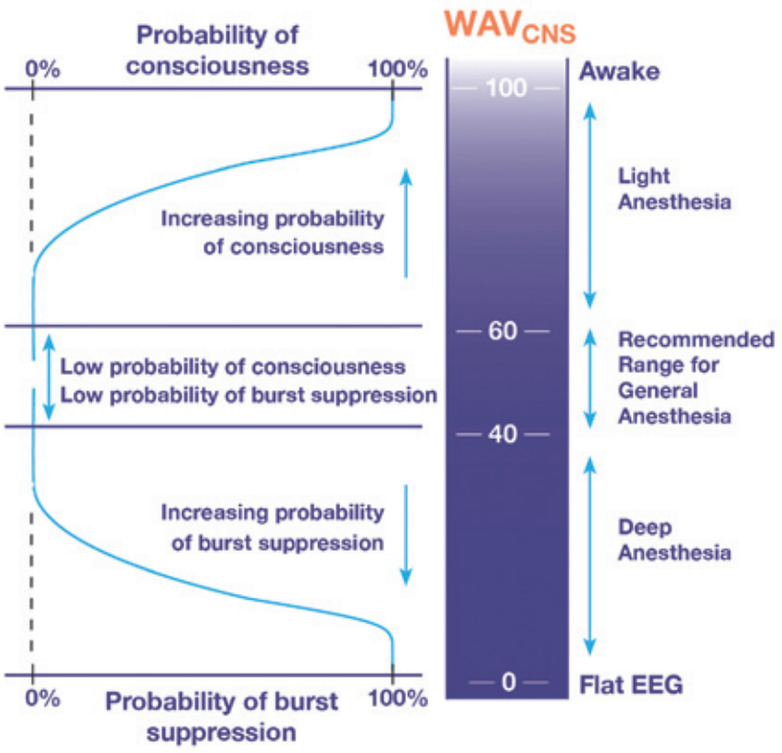
The NeuroSENSE® is an easy-to-use complement to the standard of care during anesthesia or sedation and may be used as an aid in monitoring the effects of anesthetics on the brain. The software is intuitive; including a simple, eloquent user interface with touchscreen capability. The customer can easily and quickly install software updates supplied by the manufacturer. In addition, the EasyPrep™ disposable electrodes require only minor patient preparation, and are affordably priced.

EasyPrep™ Electrode Kit Specifications:

- **Contains 4 pre-gelled adhesive Ag-AgCl electrodes and a skin prep pad**
- **Single patient use**
- **Maximum usage time: 24 hours**
- **Shaped and color-coded for fast and easy placement**
- **Ordering information:**
  - **Part Number: 000-5107-PRD**
  - **Description: EasyPrep™ Electrode Kit (EK-701)**
  - **Quantity: boxes of 25**

NeuroSENSE® Clinical Guidelines

The recommended WAVcns range for general anesthesia is between 40 and 60 as within this range there is a very low probability of a patient being either awake or in a deep anesthetic state as characterized by the presence of burst suppression [5]. In the absence of unilateral brain pathology and with good signal quality, the level of agreement between the WAVcns bilateral indices for the left and right cerebral hemispheres is typically within ±8 units with a negligible bias [2].



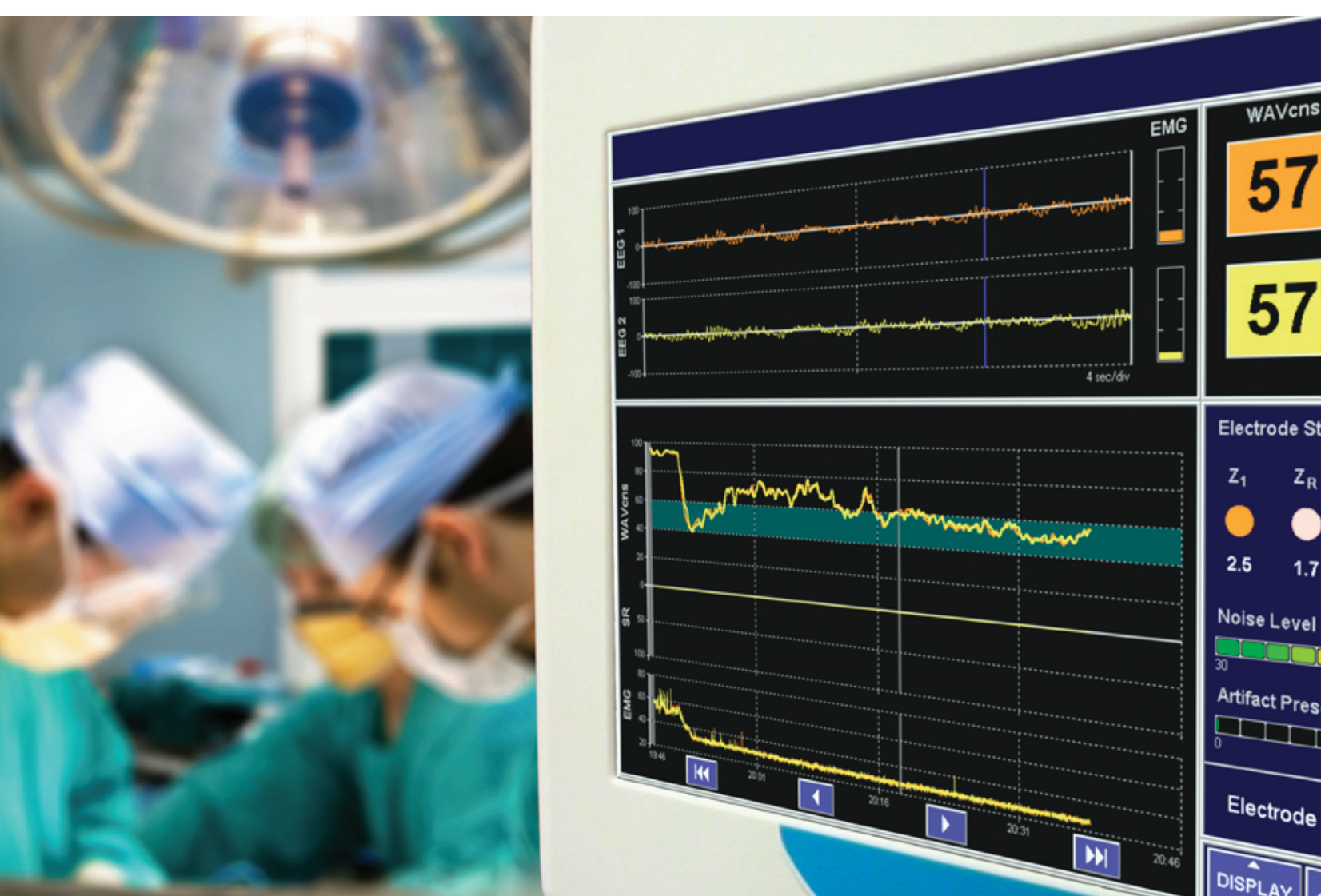
NeuroSENSE® Selected References

1. IEEE Transactions on Biomedical Engineering, 2006; 53(4): 617-632
2. Proceedings of the 2010 Annual Meeting of the American Society of Anesthesiologists, 2010; A1363
3. Anesthesiology, 2006; 105:A1030
4. Proceedings of the 2010 Annual Meeting of the American Society of Anesthesiologists, 2010; A1348
5. Proceedings of the 2010 Annual Meeting of the American Society of Anesthesiologists, 2010; A1347

NeuroSENSE® Technical Specifications

NeuroSENSE® Technical Specifications

- 2 EEG channels (4 electrodes) for bilateral monitoring
- Processed Variables (per hemisphere):
  - WAVcns index (Wavelet-based Anesthetic Value for Central Nervous System)
  - Electromyographic (EMG) power (70-110 Hz)
  - Suppression ratio (SR)
  - Electrode-skin contact impedances
  - Density spectral array, Spectral powers, MEF, SEF
- Bandwidth: 0.125-300 Hz
- Noise: < 2µVpp (0.125 - 100 Hz)
- Sampling frequency: 900 S/s per channel
- CMRR: > 100 dB @ 60 Hz
- Continuous measurement of electrode-skin contacts
- Display Specifications:
  - Weight: 7lb 12oz
  - Size: 11.5” x 9.75” x 3.0”
  - Resolution: 1024 x 768
  - 10.4” resistive touch screen
  - Integrated pole mount
- Touch screen interface
- Compact patient module with pole mount
- Protected against water ingress (IPX3)



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For more information, visit www.neurowavesystems.com

ISO International Organization for Standardization

NeuroSENSE® is compliant with the following standards/regulations for medical devices:
UL60601-1, CAN/CSA 601.1, IEC 60601-1,
IEC 60601-2-26, IEC 60601-1-2, IEC 60601-1-4, CE Mark

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Available for Sale in Canada, Europe and other markets where CE Mark is recognized