Next Generation SedLine®
Brain Function Monitor

More Complete Data, Now with an Enhanced Patient State Index (PSi)
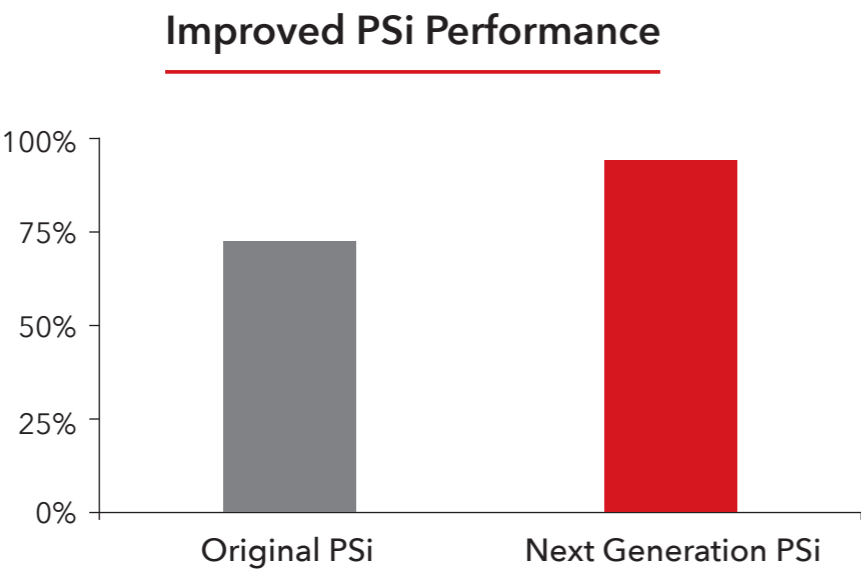

Next Generation SedLine features:

> An enhanced signal processing engine, which improves performance of the Patient State Index (PSi)

> A Multitaper Density Spectral Array (DSA), which may enhance visibility of EEG features

MASIMO

Improved Patient State Index (PSi)

Next Generation SedLine features an enhanced signal processing engine which provides an enhanced Patient Sate Index (PSi), a processed EEG parameter related to the effect of anesthetic agents.

Expert Scoring[1]

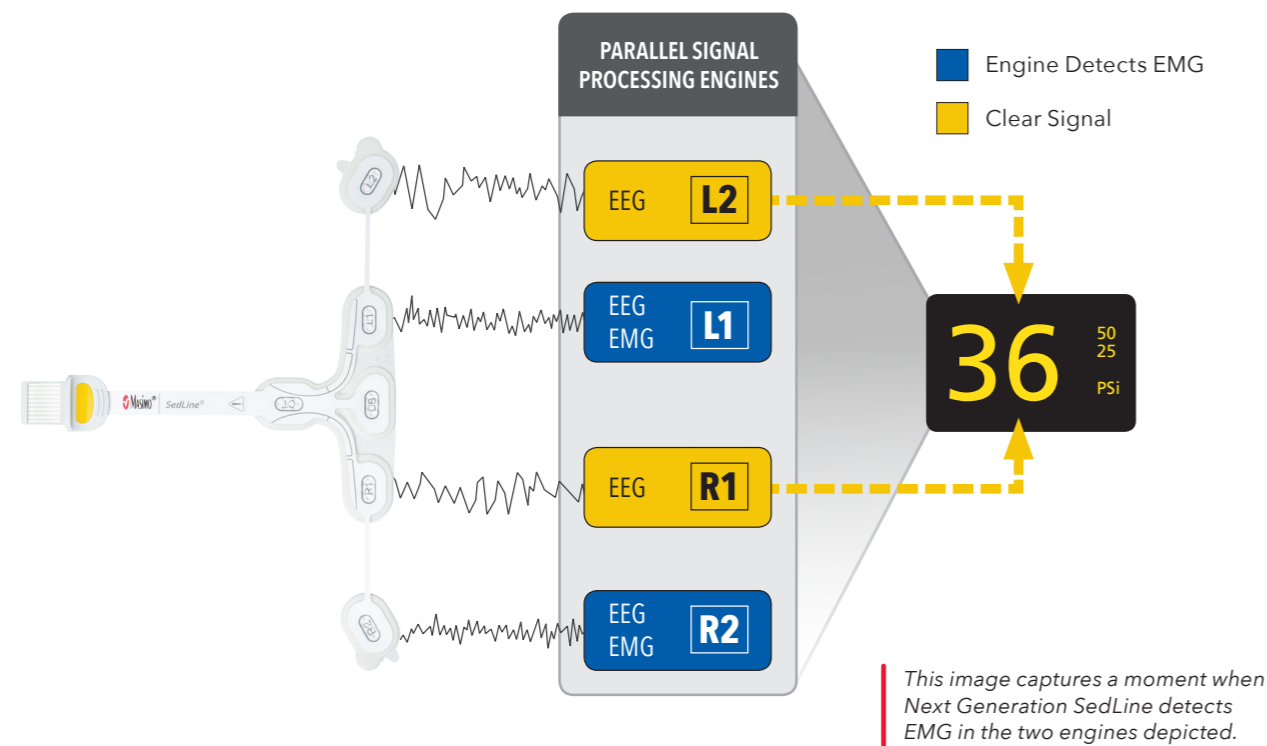EEG experts scored the improvement in PSi performance between SedLine PSi and Next Generation SedLine PSi.

Improved PSi Performance

100%	
75%	
50%	
25%	
0%	
Original PSi	Next Generation PSi

*Experts found an overall **17% improvement in Next Generation PSi performance**.*

Next Generation SedLine Brain Function ❯ Monitoring helps clinicians monitor the state of the brain under anesthesia with bilateral data acquisition and processing of four leads of electroencephalogram (EEG) signals.
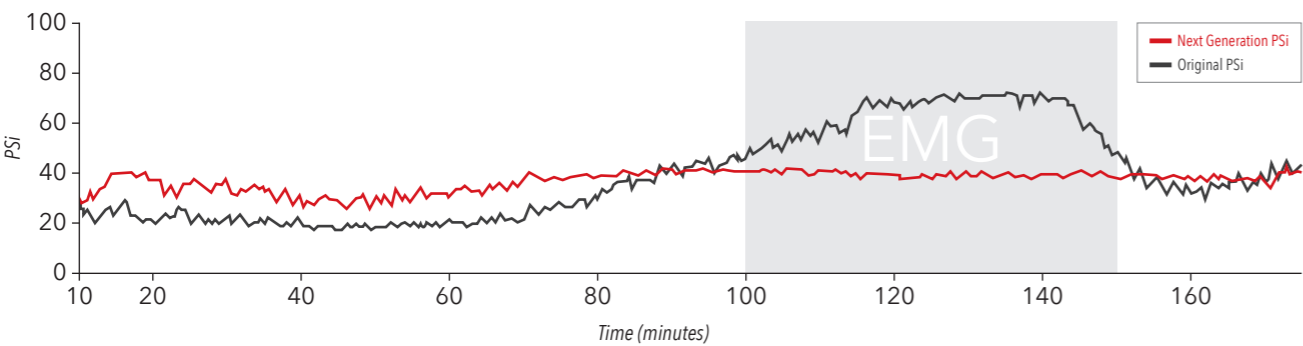
Parallel Signal Processing Engines

Next Generation SedLine utilizes Masimo's Parallel Signal Processing Engines to extract a clearer EEG signal for computing PSi.
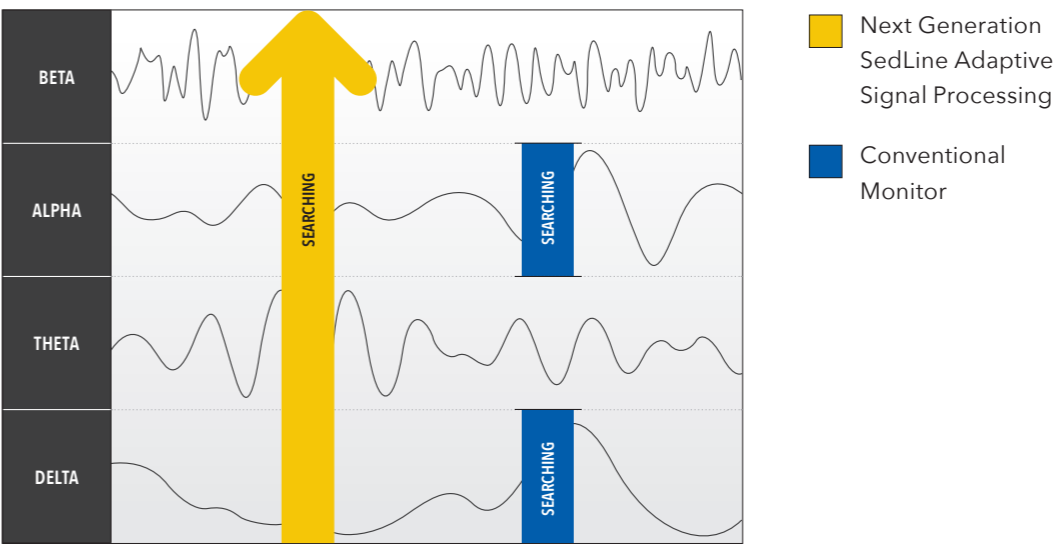

PARALLEL SIGNAL PROCESSING ENGINES

EEG **L2**
EEG EMG **L1**
EEG **R1**
EEG EMG **R2**

36 50 25 **PSi**

■ Engine Detects EMG
■ Clear Signal

This image captures a moment when Next Generation SedLine detects EMG in the two engines depicted.

The case below demonstrates Next Generation SedLine's improvement to PSi.[1]

— Next Generation PSi
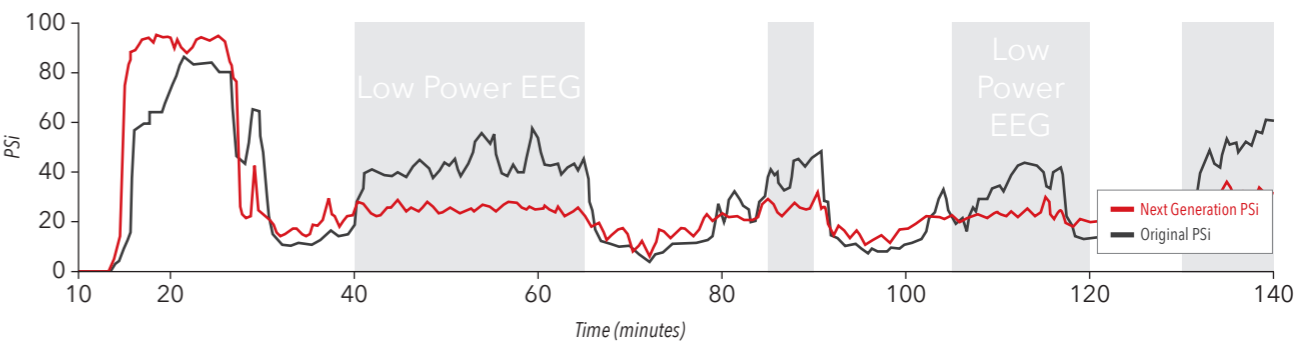— Original PSi

EMG

PSi / Time (minutes)

EMG is a common confounding factor that can interfere with EEG signals used in brain function monitoring.[2]

Adaptive Signal Processing with Band-Independent Features

When computing PSi, Next Generation SedLine uses adaptive signal processing with band-independent features to search for EEG features across many frequency bands.

BETA
ALPHA
THETA
DELTA

SEARCHING

■ Next Generation SedLine Adaptive Signal Processing
■ Conventional Monitor

The case below demonstrates Next Generation SedLine's improvement to PSi.[1]

Low Power EEG

Low Power EEG

— Next Generation PSi
— Original PSi

PSi / Time (minutes)

Power across all frequency bands decreases with age.[3]
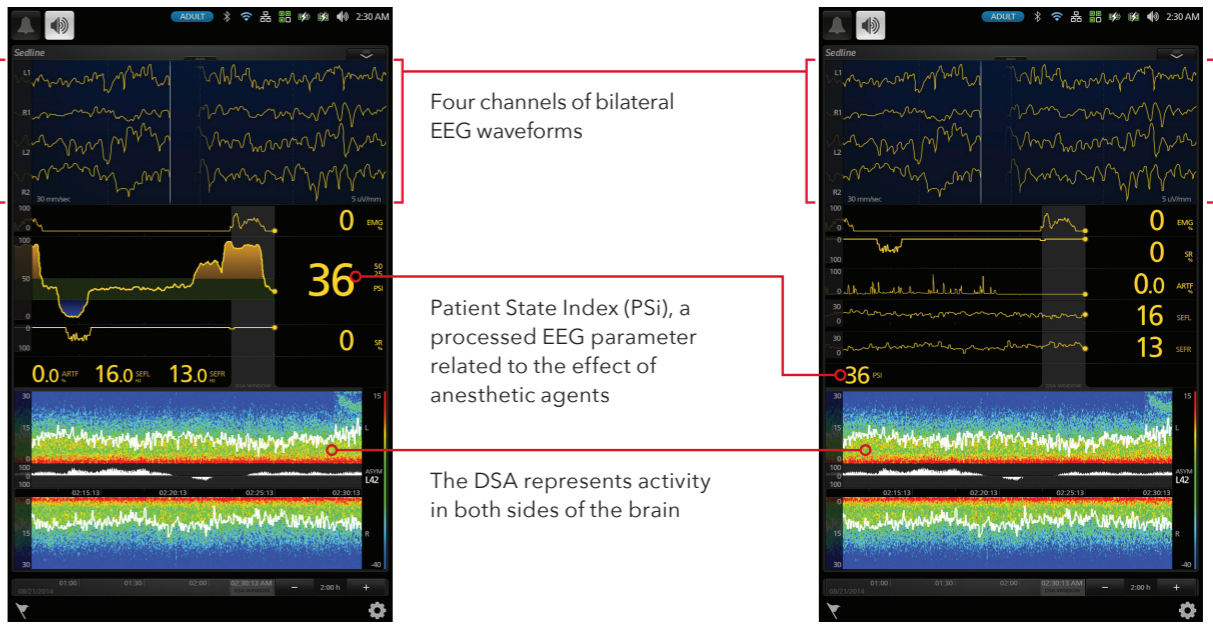
Multitaper Density Spectral Array (DSA)

Next Generation SedLine offers clinicians the flexibility of choosing to display either an enhanced Multitaper Density Spectral Array (DSA) or a standard Hanning DSA. The DSA contains left and right spectrograms representing the power of the EEG on both sides of the brain.

When using a Multitaper DSA, EEG data are transformed into the frequency domain, which may provide a better display of EEG features.
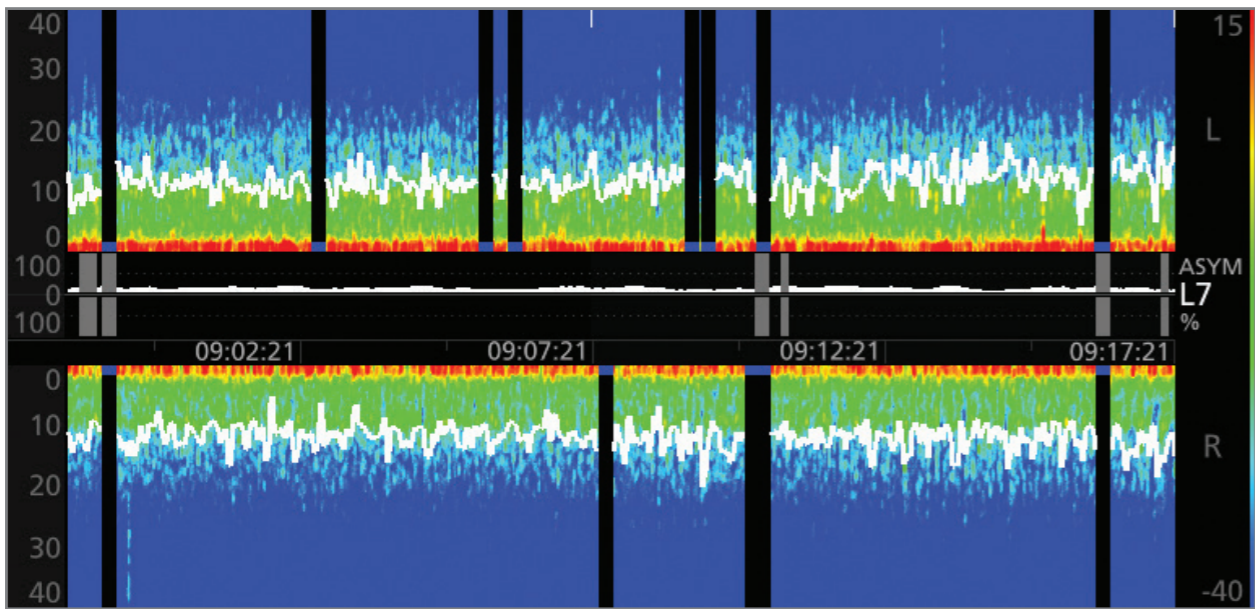
Next Generation SedLine on Root®

The Next Generation SedLine module easily plugs into the Root patient monitoring platform via Masimo Open Connect® (MOC-9®) ports. Root's customizable, easily-interpretable display offers multiple views of brain monitoring information expanding visibility in the operating room and intensive care unit.

Four channels of bilateral EEG waveforms

Patient State Index (PSi), a processed EEG parameter related to the effect of anesthetic agents

The DSA represents activity in both sides of the brain

❮ **Next Generation SedLine** can be used simultaneously with O3® Regional Oximetry on the Root platform for a more complete picture of the brain.

RD SedLine™ EEG Sensor

> **>** Four active EEG leads collect data in the frontal lobe
> **>** Soft foam pads improve patient comfort
> **>** Allows simultaneous application of SedLine and O3 Regional Oximetry sensors

SedLine Specifications

PHYSICAL CHARACTERISTICS

Module Physical Dimensions
Width . . . . 1.3 in (3.3 cm)
Length . . . . 4.0 in (10.2 cm)
Thickness . . . . .0.8 in (2.0 cm)

ENVIRONMENTAL

Module Operating Conditions
Operating Temperature. . . . . 41–104°F (5–40°C)
Operational Humidity . . . . 15–95%, non-condensing

Module Storage Conditions
Storage Temperature. . . . .-40–158°F (-40–70°C)
Storage Humidity . . . . 15–95%, non-condensing
Exposure to Pressure . . . . .500–1060 mbar

Sensor Specifications

Patient Weight . . . . > 30 kg
Application Site . . . . .Forehead
Active Channels 4
Active Electrodes . . . . L1, L2, R1, and R2

Ground Electrode. . . . . CB
Reference Electrode . . . . CT
Duration of Use . . . . .Maximum of 24 hours
Latex Content . . . . Does not contain natural rubber latex

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[1] Retrospective analysis of clinical data on file. [2] Purdon P et al. *Brit J of Anaesth*. 10.1093 46-57. [3] Lobo, Francisco A., and Stefan Schraag. Limitations of anaesthesia depth monitoring. *Current Opinion in Anesthesiology.* 24, no. 6 (2011): 657-664.

Caution: Federal (USA) law restricts this device to sale by or on the order of a physician. See instructions for use for full prescribing information, including indications, contraindications, warnings, and precautions.

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