Root®

Expandable, Acuity-Adaptable Patient Monitoring and Connectivity Hub

THE ROOT OF PATIENT CARE

Masimo

Patient Monitoring and Connectivity Platform

Streamline clinician workflows with **Root**, a versatile, acuity-adaptable, patient monitoring and connectivity platform that integrates noninvasive technologies usually requiring multiple devices.

Masimo rainbow SET™ Pulse CO-Oximetry

Monitor multiple key physiologic parameters continuously and noninvasively on a single device by integrating Masimo's innovative, industry-leading Pulse CO-Oximetry platform into Root.

Measurement Expansion through Masimo Open Connect® (MOC-9®)

Customize Root to fit each patient case, care area, or workflow using MOC-9 ports to integrate additional advanced patient monitoring technologies.

Iris® Platform for Advanced Connectivity and Interoperability

Integrate data from Root and third-party devices using Iris ports for automated charting into electronic medical records (EMR).

Med-Surg Solutions

Root facilitates patient-centric, quality care, and streamlined clinician workflows through flexible monitoring solutions that allow clinicians to adapt care to best suit each patient and advanced connectivity solutions that enable continuous supplemental remote monitoring and automated electronic charting.

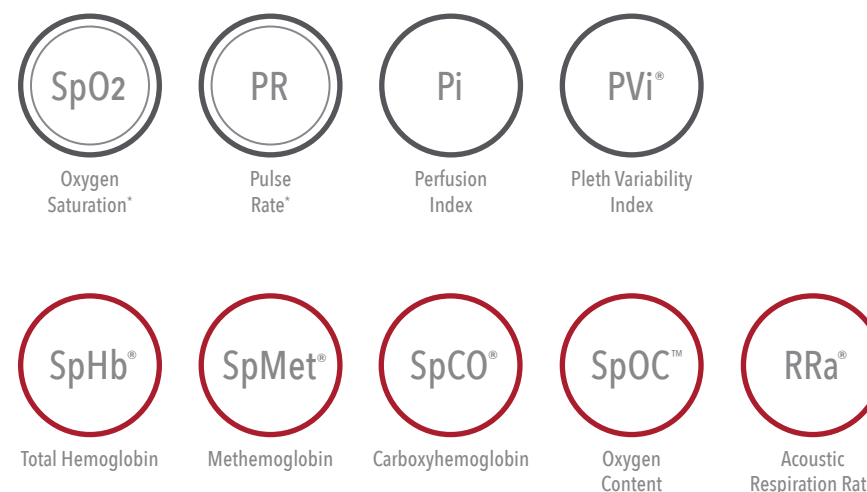## STREAMLINE AND AUTOMATE WORKFLOWS

Perioperative and Critical Care Solutions

Root serves as a versatile solution for managing high-risk patients and enables clinicians to provide efficient, high-quality care using advanced monitoring technologies — such as noninvasive hemoglobin and brain function monitoring — expanded supplemental displays, and automated integration of patient trends and events in the EMR.

Leading Patient Monitoring Technology

When connected to a **Radical-7®** or **Radius-7® Pulse CO-Oximeter®**, Root provides continuous monitoring using industry-leading Masimo SET® Measure-through Motion™* pulse oximetry. In addition, the platform can be upgraded to provide Masimo rainbow SET technology, allowing clinicians to noninvasively monitor multiple additional physiologic parameters.

SpO2
Oxygen Saturation*

PR
Pulse Rate*

Pi
Perfusion Index

PVi®
Pleth Variability Index

SpHb®
Total Hemoglobin

SpMet®
Methemoglobin

SpCO®
Carboxyhemoglobin

SpOC™
Oxygen Content

RRa®
Acoustic Respiration Rate

Flexibility in Monitoring

Radical-7 easily undocks from Root to seamlessly transition to standalone bedside or mobile monitoring

Tetherless Continuous Monitoring

Easily transition patients to the **Radius-7** wearable monitor for tetherless post-operative monitoring

*Masimo SET® Measure-through Motion technology includes SpO2 and PR.

All-in-one Vital Signs Monitoring

Root is adaptable to various vital signs monitoring needs, whether within continuous bedside monitoring or as part of a mobile spot-check workflow.

SpO2   PR   NIBP   TEMP   RRa®

When initiated by a clinician, Root automatically calculates **Early Warning Scores (EWS)** using measured values from Root and clinician-input values. EWS on Root can be customized to support established hospital protocols and configured with up to 14 contributors and relative scoring weights.

Flexible Measurement Expansion through Masimo Open Connect (MOC-9)

MOC-9 "plug-and-play" modules expand Root's monitoring capabilities with additional measurement technologies, allowing clinicians to connect the most applicable solutions for each individual patient.

SedLine® brain function monitoring utilizes four simultaneous channels of EEG data to provide continuous information about the state of the brain under anesthesia

(PSi) (EMG) (SEFL) (SEFR) (ARTF)

O3® regional oximetry uses near-infrared spectroscopy (NIRS) to enable monitoring of tissue oxygen saturation (rSO_2) in the brain

(rSO_2) (Δbase) (AUC) ($ΔSpO_2$)

NomoLine® capnography provides sidestream CO_2 and gas monitoring with cost-effective consumables

ISA™ CO_2 Module

($EtCO_2$) (RR) ($FiCO_2$)

ISA AX+ Module

($EtCO_2$) (RR) ($FiCO_2$) (N_2O) (Agent ID)

ISA OR+ Module

($EtCO_2$) (RR) ($FiCO_2$) (N_2O) (O_2) (Agent ID)

Measurement expansion allows other companies to expand the Root platform with their own measurements, while following Masimo's established development and validation process.

Iris Connectivity

Iris ports in Root provide built-in integration with numerous third-party devices, including anesthesia machines, infusion pumps, ventilators, and beds. Further, the Iris connectivity platform automates electronic charting, improving clinician workflows through the reduction of manual data entry.

Ventilator*

Monitor*

Infusion pump*

Root's built-in Iris ports act as a connectivity hub for third-party device data and alarms

Data from Root and third-party devices are converted into **HL7**

Masimo Patient SafetyNet™† or Iris Gateway™

Device data and alarms are automatically charted to the **Electronic Medical Record (EMR)**

Third-party devices with appropriate networking capabilities can communicate directly with Patient SafetyNet or Iris Gateway.

†*The use of the trademark Patient SafetyNet is under license from University Health System Consortium.*

Customization Simplified

Root features an instantly interpretable, high-visibility display with intuitive multi-touch navigation for easy and adaptable use in hospital environments. Clinicians can customize the Root display to feature the most applicable data for the current patient or case.

Derive insights from plethysmographic, capnography, EEG, and acoustic respiration rate **waveforms**

Configure settings to easily switch between patient populations with up to eight custom **Profiles**

Customize the display to suit your clinical needs
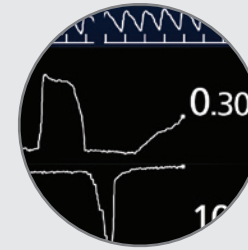
Review up to 96 hours of parametric data in Trend View

View pertinent data at a glance in Analog view

Move parameters from the well to the larger, main display using the multi-touch screen

Customize the display to expand visibility of data from MOC-9 modules

rainbow® measurements can be displayed on a docked Radical-7, allowing pertinent data from MOC-9 modules to be more easily viewed on the main Root screen

Dynamically resize and rearrange channel layout directly on the multi-touch screen by pressing at the top of any channel window

High-resolution, LCD, **multi-touch** display with multiple layout options to suit clinician workflow preferences

When a clinician enters the room, **MyView™** recognizes him or her and displays that clinician's preferred view

Session management allows clinicians to associate parametric data with specific patients and export session information without connecting to an EMR system
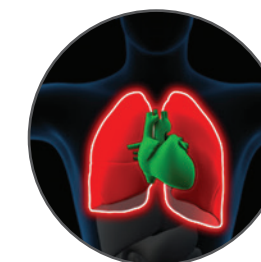
Alarm Status Visualizer provides a three-dimensional, anatomical image that associates device measurements with alarm status
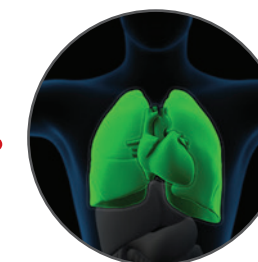
No Alarm
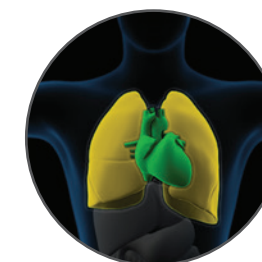
Approaching Alarm

Alarm State

Advanced Parameters Provide Greater Visibility into a Patient's Physiologic Status

SpHb

Noninvasive and Continuous Total Hemoglobin monitoring, **SpHb**, provides real-time visibility to changes, or lack of changes, in hemoglobin between invasive blood samples.

PVi

Pleth Variability Index, **PVi**, is an automatic measure of the dynamic change in Pi that occurs during the respiratory cycle.

Streamlined design allows simultaneous application of SedLine and O3 sensors
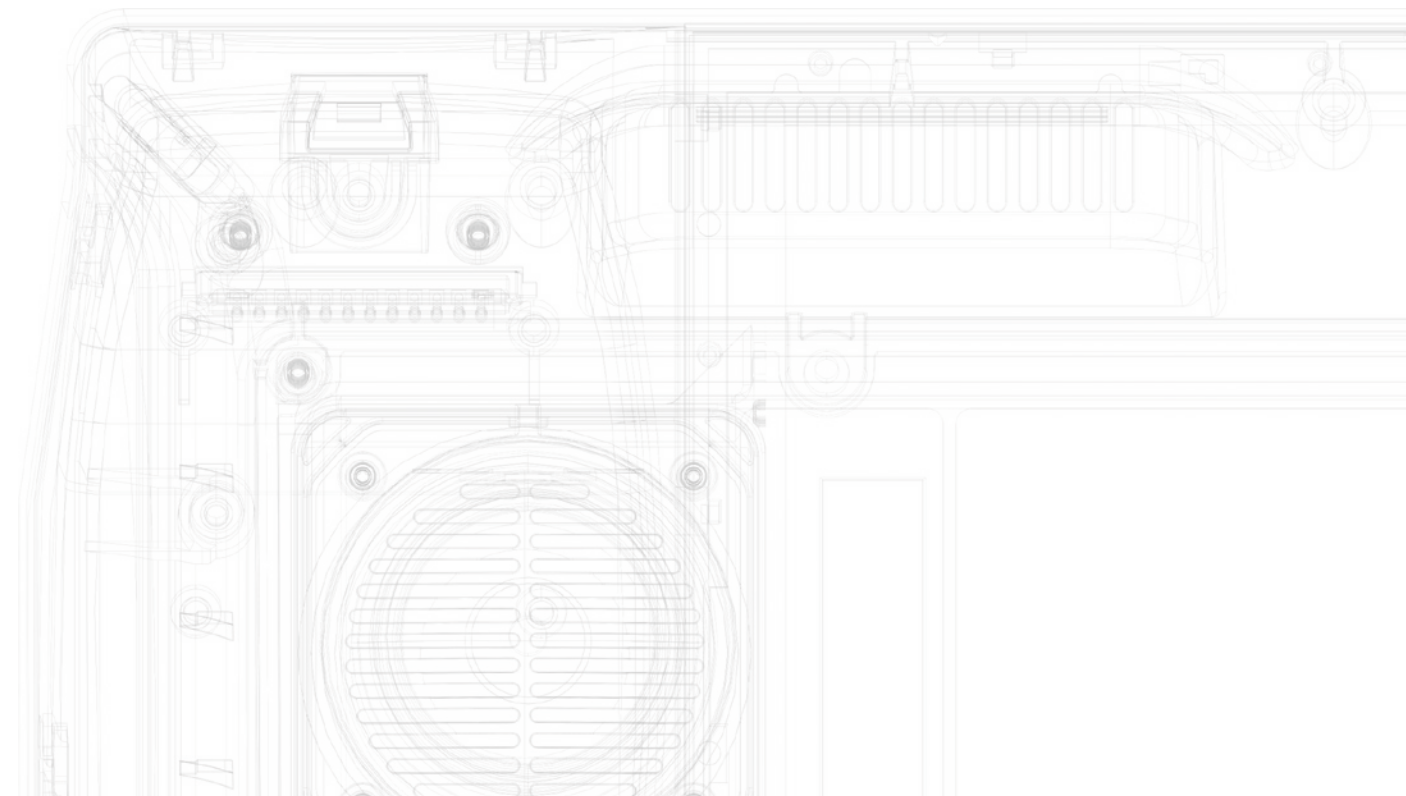
A More Complete Brain Monitoring Solution

Root with **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, enabling continuous assessment of both sides of the brain. Next Generation SedLine features an enhanced signal processed EEG index (PSi), a processed EEG parameter related to the effect of anesthetic agents, as well as an enhanced Multitaper Density Spectral Array (DSA).

Root with **O3 regional oximetry** uses near-infrared spectroscopy (NIRS) and reflectance pulse oximetry to enable monitoring of tissue oxygen saturation (rSO2) in the brain, helping clinicians monitor cerebral oxygenation in situations in which pulse oximetry alone may not be fully indicative of the oxygen in the brain.

When used together on Root, SedLine and O3 provide a more complete picture of the brain on an instantly interpretable, integrated display.

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

Density Spectral Array (DSA) display contains left and right spectrograms representing the power of the EEG on both sides of the brain

rSO2 provides tissue oxygen saturation

Expanded Visibility of Patient Data

Kite* expands visibility by providing a supplemental display of patient data from Root with the ability to configure the layout differently from Root.

By allowing customization of what can be displayed, Kite allows clinicians to focus on the most pertinent data for each stage of a patient's journey, empowering them to make more informed decisions.
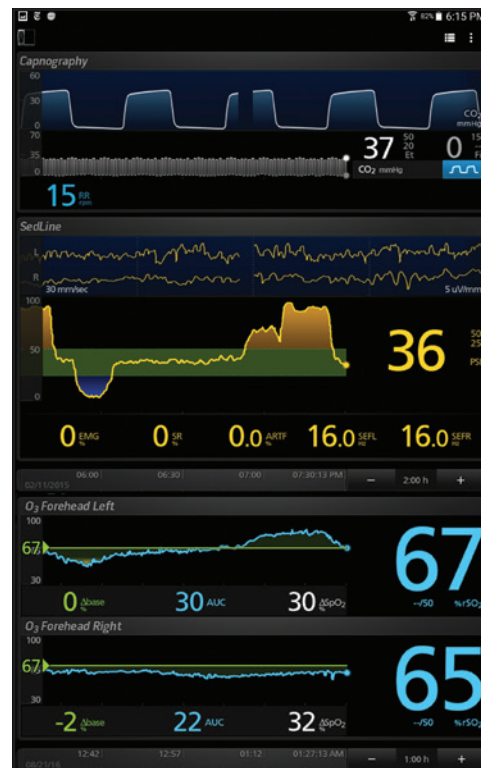
Kite displays data from modules connected through MOC-9 ports to Root, such as SedLine, O3, and NomoLine

Kite displays visual alarms from the patient monitor, providing quick notification of changes in a patient's physiologic status

Continuous, Supplemental Remote Monitoring

Patient SafetyNet is a supplemental remote monitoring and clinician notification system which displays near real-time data from any connected Masimo or third-party device, such as Root, at a central view station and allows for alarms and alerts from bedside devices to be sent directly to clinicians. In addition, through Patient SafetyNet, the **Replica™** mobile application allows clinicians to view real-time, continuous monitoring data for multiple patients, as well as view and escalate alarms and alerts, from their smart phone, regardless of location.

Supplemental remote monitoring at a customizable, central view station, where clinicians can investigate patient alarms and trends

Actionable patient alarms sent directly to assigned clinicians for immediate patient assistance

Data and alarms sent to Patient SafetyNet are automatically charted in the EMR

Automating Clinician Workflows

Bedside Patient and Clinician Association via ADT

Quickly associate clinicians with spot-check sessions and patients with their data on Root using a drop-down list or barcode scanning, pulling from hospital Admit Discharge Transfer (ADT) systems for positive patient association.

Immediate Electronic Charting at the Bedside

To simplify documentation workflows, Root serves as a single point for the documentation and validation of multiple sources of patient data, allowing clinicians to send Root-measured values, EWS, and up to 30 additional manually entered measurements directly to the EMR.

## Seamless, Integrated Vital Signs Workflow

Vital Signs Check, an integrated device mode on Root, automates vital signs data collection and electronic charting, helping streamline workflows and optimize patient data management.

Tetherless Post-Operative Monitoring

Radius-7 is a small, lightweight, wearable Pulse CO-Oximeter designed to promote patient comfort and ambulation.

Radius-7 communicates via Bluetooth® to Root for continuous monitoring when in close proximity. In addition, Wi-Fi enables hospital-wide continuous monitoring and remote clinician alarm notification via Patient SafetyNet – even when the patient is not in close proximity to Root.
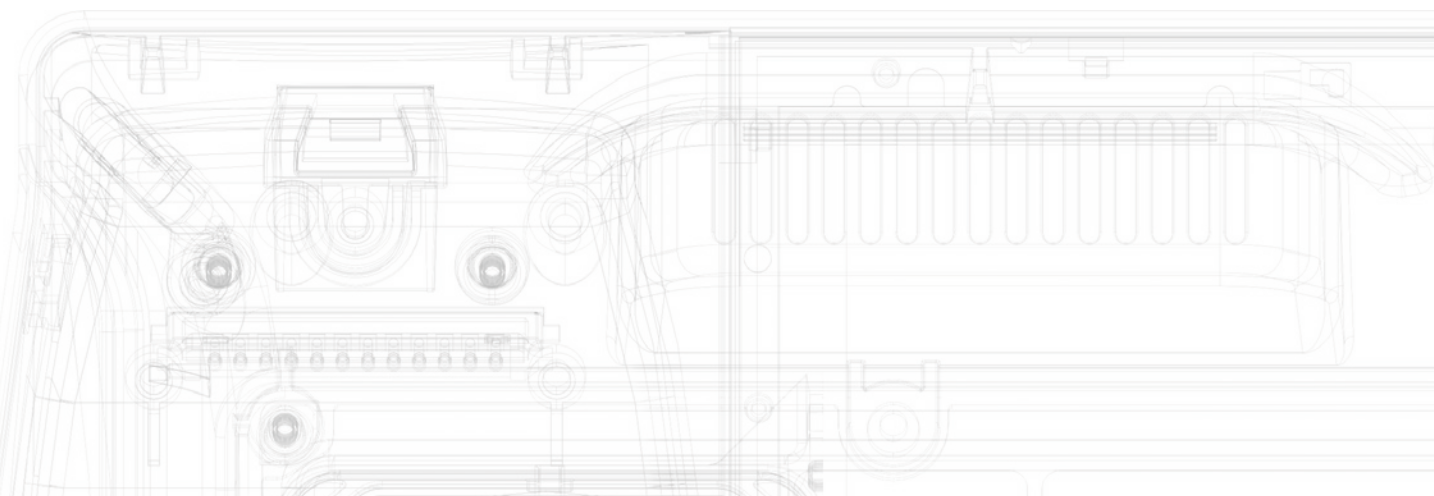
Expandable Ventilation and Respiration Monitoring Solutions

Root provides multiple options for monitoring a patient's respiratory status, offering clinicians the flexibility to choose the most applicable monitoring method for each patient.
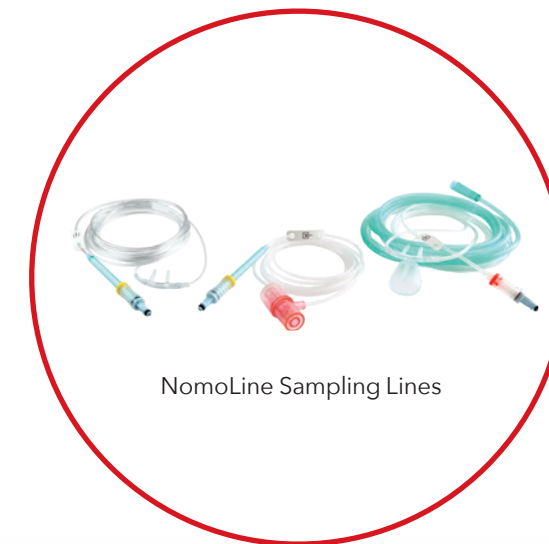
NomoLine Sampling Lines

The **ISA Capnography** module can be connected to Root through MOC-9 for sidestream CO_2 and gas monitoring with cost-effective NomoLine sampling lines.

Respiratory Acoustic Sensor, RAS-45

Acoustic Respiration Rate (RRa) provides noninvasive and continuous monitoring of respiration rate, utilising an adhesive respiratory acoustic sensor (RAS) to detect the vibrations associated with respiration.

SpHb monitoring with Root is not intended to replace laboratory blood testing. Blood samples should be analyzed by laboratory instruments prior to clinical decision making.

Radius-7 with Wi-Fi is not licensed for sale in Canada.

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.

Masimo U.S.
Tel: 1 877 4 Masimo
info-america@masimo.com

Masimo International
Tel: +41 32 720 1111
info-international@masimo.com