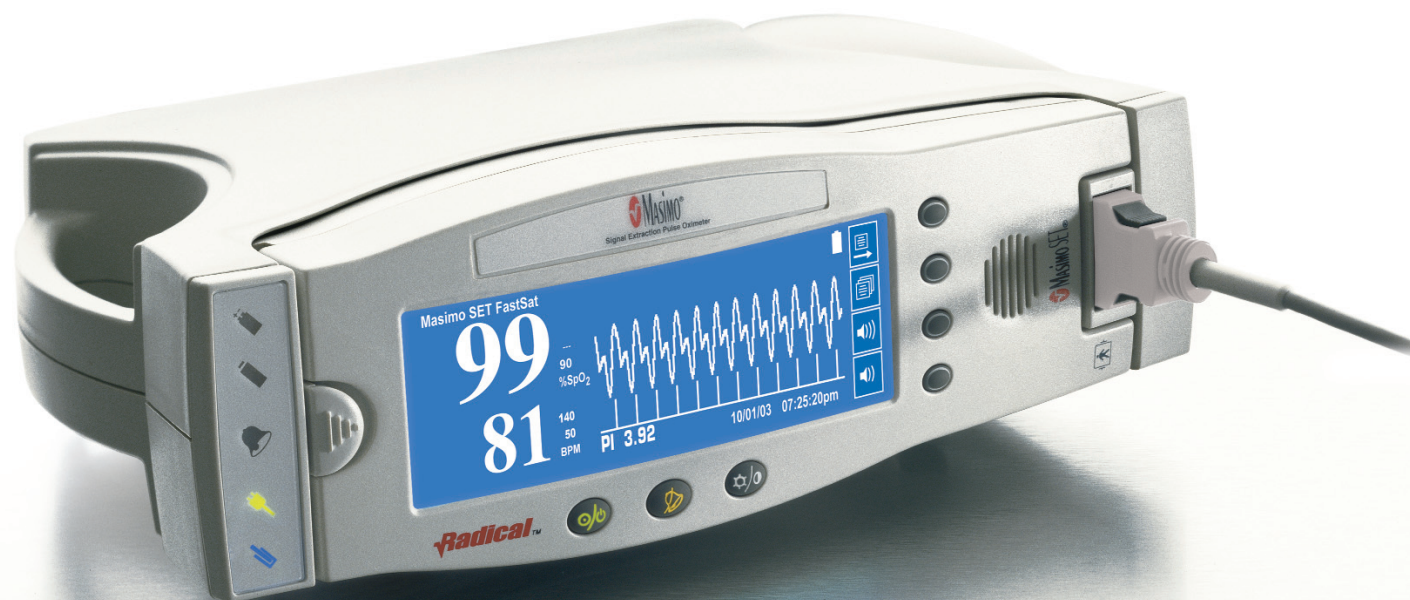


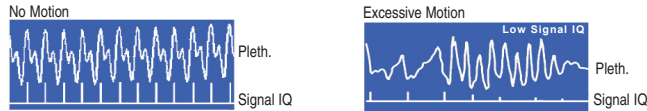
Radical[®]

signal extraction pulse oximeter[™]

The proof is in the performance[™]

- Masimo SET[®] pulse oximetry: the original and best read through-motion and low perfusion pulse oximeter.^{1,2} Clinically proven in over 100 independent clinical studies.
- Masimo SET's unprecedented sensitivity in detecting true alarms and unparalleled specificity in rejecting false alarms improves response time to patient distress.^{1,2,3}
- The accuracy of Masimo SET oximetry has been linked to improved care and reduced medical errors.³





As the plethysmograph waveform gets corrupted with excessive motion, the Signal IQ[®] indicator shows the location of the pulse, while the height of the vertical bar indicates the quality of the values displayed. When the signal quality is compromised, a "Low Signal IQ" message is displayed.

Radical displays SpO₂, pulse rate, pleth, perfusion index and Signal IQ waveform (above left), or shows the SpO₂ and pulse rate as large numbers with pulse indicator (above right).



Radical's versatility facilitates standardization on Masimo SET oximetry throughout the department or hospital. Radical Handheld easily detaches from the Docking Station facilitating both hospital transport and spot check applications.

Features

- Clinically proven as the highest sensitivity and specificity pulse oximeter in the world¹
- Signal IQ[®] waveform for signal identification and quality indication during excessive motion and low signal to noise situations
- FastSat[®] tracks rapid changes in arterial O₂ with high fidelity unlike any other pulse oximeter
- FastStart™ allows for rapid measurement from the time the instrument is first turned on
- APOD™ (Adaptive Probe Off Detection) offers the best probe off detection of Masimo's three sensitivity modes - APOD, Normal and MAX sensitivity
- ClearVue™ technology delivers the highest resolution display available
- SmartTone™ beeps in sync with pulse, and with tonal changes for every 1% drop in saturation, even under most patient motion conditions
- SatShare[®] interface connection to existing multiparameter monitor (models RDS-1/1B only)
- RS-232, analog output, and nurse call interfaces (models RDS-1/1B and RDS-3 only)
- User configurability maximizes operation for all applications
- Facilitates economical sensor standardization throughout the hospital
- SpO₂, pulse rate, alarm, trending, perfusion index, Signal IQ and plethysmographic waveform display
- Automatic screen rotation provides upright display for vertical or horizontal monitor positioning (not available on the RDS-2 model)
- Remote alarming interface
- Designed for hospital, transport and home use
- Up to thirty days of trending

performance measurement range

| | |
|--------------------|----------------|
| SpO ₂ : | 1 - 100% |
| Pulse Rate: | 25 - 240 (bpm) |
| Perfusion: | 0.02% - 20% |

saturation accuracy

| | |
|-------------|-------------|
| saturation: | 70% to 100% |
|-------------|-------------|

No Motion

| | |
|---------------------|-----------|
| Adults, Pediatrics: | ±2 digits |
| Neonates: | ±3 digits |

Motion⁴

| | |
|---------------------|-----------|
| Adults, Pediatrics: | ±3 digits |
| Neonates: | ±3 digits |

Low Perfusion⁵

| | |
|---------------------|-----------|
| Adults, Pediatrics: | ±2 digits |
| Neonates: | ±3 digits |

pulse rate accuracy

| | |
|-------------|--------------|
| pulse rate: | 25 - 240 bpm |
|-------------|--------------|

No Motion

| | |
|-------------------------------|-----------|
| Adults, Pediatrics, Neonates: | ±3 digits |
|-------------------------------|-----------|

Motion²

| | |
|-------------------------------|-----------|
| Adults, Pediatrics, Neonates: | ±5 digits |
|-------------------------------|-----------|

Low Perfusion

| | |
|-------------------------------|-----------|
| Adults, Pediatrics, Neonates: | ±3 digits |
|-------------------------------|-----------|

resolution

| | |
|----------------------------------|-------|
| Saturation (%SpO ₂): | 1% |
| Pulse Rate (bpm): | 1 bpm |

electrical

standalone

| | |
|------------------------|--|
| AC Power requirements: | 100 - 240 VAC, 47 - 63 Hz |
| Power consumption: | 55 VA |
| Fuses: | 1 Amp, Fast Acting, Metric, (5 x 20mm), 250V |

batteries

Handheld

| | |
|----------------|----------------------|
| Type: | NIMH |
| Capacity: | 6 hours ⁶ |
| Charging time: | 3 hours |

Standalone (model RDS-1B only)

| | |
|----------------|-----------------------|
| Type: | NIMH |
| Capacity: | 12 hours ⁶ |
| Charging time: | 6 hours |

environmental

| | |
|------------------------|---|
| Operating Temperature: | 41°F to 104°F (5°C to 40°C) |
| Storage Temperature: | -40°F to 158°F (-40°C to +70°C) |
| Operating Humidity: | 5% to 95%, non-condensing |
| Operating Altitude: | 1060 mbar to 500 mbar pressure, -1000 ft to 18,000 ft (-304 m to 5,486 m) |

physical characteristics

dimensions

| | |
|-------------|---|
| Handheld: | 8.9" x 3.3" x 2.1" (22.6 cm x 8.4 cm x 5.3 cm) |
| Standalone: | 3.5" x 10.5" x 7.7" (8.9 cm x 26.7 cm x 19.6 cm) |

weight

| | |
|---|-------------------|
| Handheld: | 1.3 lbs (0.59 kg) |
| Docking Station (models RDS-1, RDS-2, and RDS-3): | 2.5 lbs (1.14 kg) |
| (model RDS-1B): | 3.1 lbs (1.41 kg) |
| Standalone (models RDS-1, RDS-2, and RDS-3): | 3.8 lbs (1.73 kg) |
| (model RDS-1B): | 4.4 lbs (2.00 kg) |

trending

User configurable resolution (2 - 10 seconds) provides a minimum of 72 hours and up to 30 days of trending, output to printer or other serial and analog recording devices. Due to the ability to trend Perfusion Index, handheld devices with software version 5.1.0.2 or greater provides trending up to 18 days.

modes

| | |
|-----------------|--|
| Averaging mode: | 2, 4, 8, 10, 12, 14 or 16 seconds ⁷ |
| Sensitivity: | Normal, APOD and Maximum ⁸ |

alarms

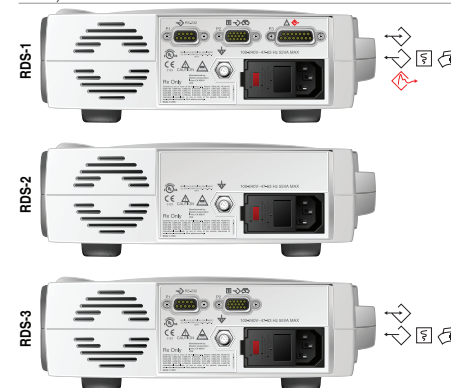
Audible and visual alarms for high and low saturation (1% to 100%), pulse rate (25 - 240 bpm), sensor condition, system failure and low battery

display/indicators

| | |
|----------------|--|
| Data display: | %SpO ₂ , pulse rate, pleth waveform, perfusion index, alarm status, trends, sensitivity, FastSat, Signal IQ |
| Display Color: | Blue |
| Type: | Backlit LCD |
| Pixels: | 480 x 160 dots |
| Dot Pitch: | 0.25 mm |

output interface

Philips Vuelink, Spacelabs Universal Flexport, RadNet™, (models RDS-1/1B, RDS-3)



References:

- Hay WW, Rodden DJ, Collins SM, Melera DL, Hale KA, Fashaw LM. Reliability of conventional and new oximetry in neonatal patients. *Journal of Perinatology*. 2002; 22:360-366.
- Barker SJ. "Motion-resistant" pulse oximetry: a comparison of new and old models. *Anesthesia Analgesia* 2002; 95:967-72.
- Durbin CG, Rostow SK. More reliable oximetry reduces the frequency of arterial blood gas analysis and hastens oxygen weaning following cardiac surgery: a prospective randomized trial of the clinical impact of a new technology. *Critical Care Med*. 2002;30:1735-40
- Continuous rubbing and tapping motions at 2 to 4 Hz at an amplitude of 1 to 2 cm and continuous random frequency motion between 1 to 5 Hz at an amplitude of 2 to 3 cm
- Perfusion Index >0.02% and % Transmission > 5%
- When using a new, fully charged battery
- With FastSat the averaging time is dependent on the input signal
- Maximum Sensitivity mode disables APOD, but maximizes measuring ability

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