

**OEM**

# Pulse Oximetry

**one technology, limitless possibilities with NONIN**



*✓ Where People Make the Difference*

# the most flexible OEM

one technology, limitless possibilities

## one technology



### 4100 Bluetooth® Oximeter

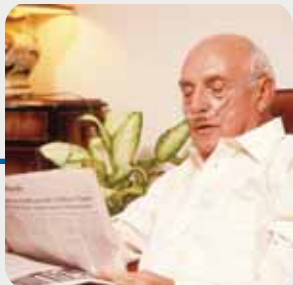
It's Wireless – Oximetry  
Unplugged®

wireless oximetry – uses Bluetooth  
protocol to transmit information  
wirelessly to host receiver



### OEM III Module Internal Pulse Oximetry At Its Best

internal oximetry – integrated inside  
a medical device



home care



intensive care



emergency



ambulatory



allergy

# family in the world™

with **NONIN**



**ipod® Oximeter**  
External Pulse Oximetry –  
It's In the Sensor

external oximetry – plugs into a medical device through an external port



**Xpod® Oximeter**  
External Pulse Oximetry –  
It's In the Cable

external oximetry – plugs into a medical device through an external port

## limitless possibilities



telemedicine



sleep studies



varied conditions



veterinary



the sky's the limit

# wireless oximetry



## **4100 Bluetooth® Oximeter** It's Wireless – Oximetry Unplugged™

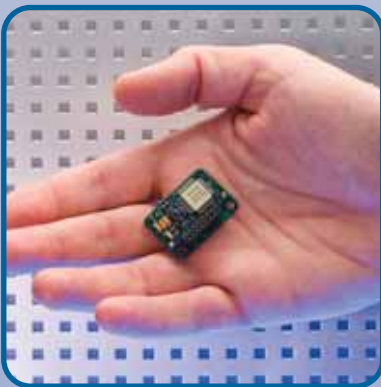
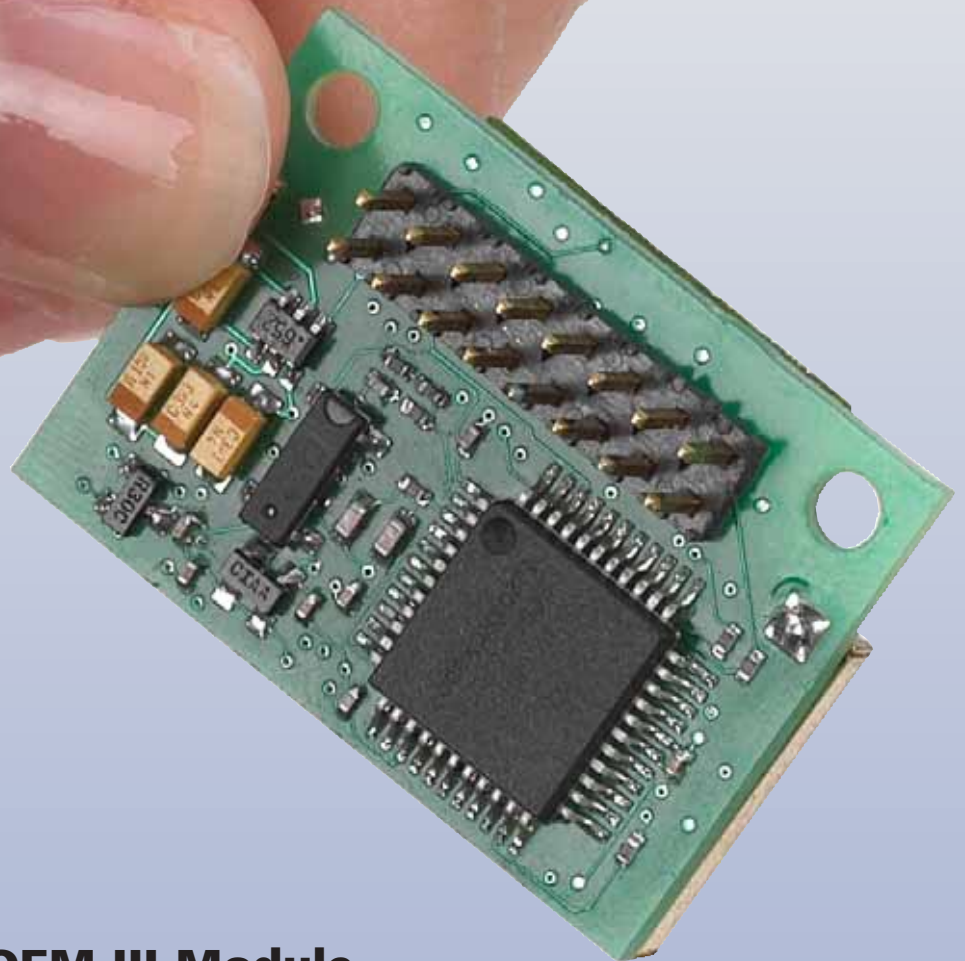
The 4100 Digital Pulse Oximeter eliminates the cable between the patient and the monitor. Untether your patients while collecting vital SpO<sub>2</sub> and pulse rate data with this exceptional performer.



- ✓ Wireless communication
- ✓ 2.4 Gh, 32-bit encryption
- ✓ 120 hrs. battery life



# internal oximetry



## **OEM III Module**

**Internal Pulse Oximetry At Its Best**

The OEM III Module provides a simple way to incorporate exceptional pulse oximetry. Its compact design, power-efficiency and expanded output capabilities provide maximum flexibility in our smallest module yet.

- ✓ Low power draw (29mW)
- ✓ Small footprint (24.1mm x 34.5mm)
- ✓ Cost-effective

# external oximetry



## ipod® Oximeter

External Pulse Oximetry – It's In the Sensor

The NONIN ipod® combines the oximeter and sensor in one self-contained unit. This external option provides a simple, elegant solution for spot-checking your adult patient population – optional SpO<sub>2</sub> made easy!

- ✓ Single piece (oximeter and sensor)
- ✓ Low power draw (60mW)
- ✓ Can be used interchangeably with Xpod®



# external oximetry



## Xpod® Oximeter

External Pulse Oximetry – It's In the Cable

The Xpod® provides an easy way to add pulse oximetry as an optional parameter to your new or existing medical device. The Xpod saves space inside your monitor housing by attaching the oximeter externally, allowing you to choose a sensor for any patient application.

- ✓ Low power draw (60 mW)
- ✓ 3 wire interface
- ✓ Reduced time to market



The Xpod® is a complete OEM oximeter contained in this tiny housing.

# function

## Reliability

With over 800,000 oximeters in operation and more than 20 years of proven clinical performance, NONIN's digital pulse oximetry is trusted by clinicians worldwide. Many manufacturers have come to rely on NONIN's digital technology to successfully integrate superior pulse oximetry into their products.

## Performance

NONIN PureSAT® signal processing technology offers the highest quality pulse oximetry on the market today delivering accurate performance in challenging monitoring environments.

## Power

NONIN's OEM solutions ensure full performance oximetry with very low power consumption (as low as 29mW), thus providing an energy-efficient solution for longer run time.

## Data Formats

NONIN's OEM oximetry solutions offer multiple serial data formats:

### For Data Logging – Serial Data Format #1

SpO<sub>2</sub>, heart rate, out of track, marginal perfusion, low perfusion, artifact, and sensor alarm. There are 3 bytes of data sent once per second.

### For Real-Time Monitoring – Serial Data Formats #2 & #7

Multiple SpO<sub>2</sub> and heart rate outputs, out of track, artifact, pulse indication, sensor disconnected, sensor alarm, software firmware revision level, and plethysmographic pulse waveform. There are 5 bytes of data sent 75 times per second.

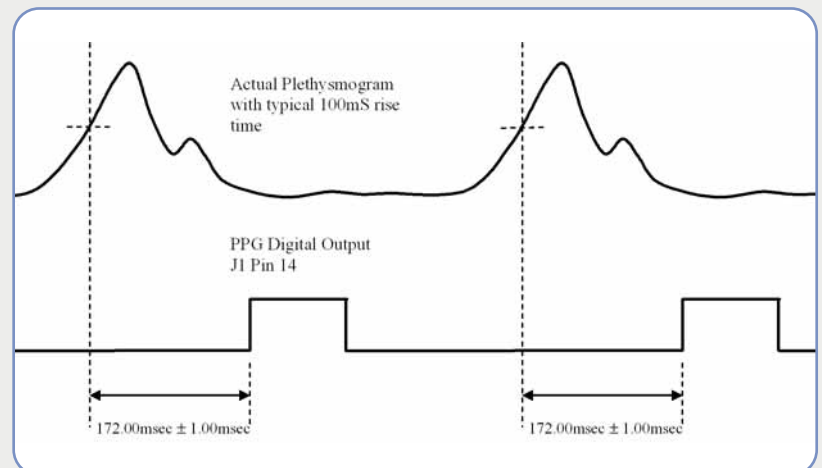
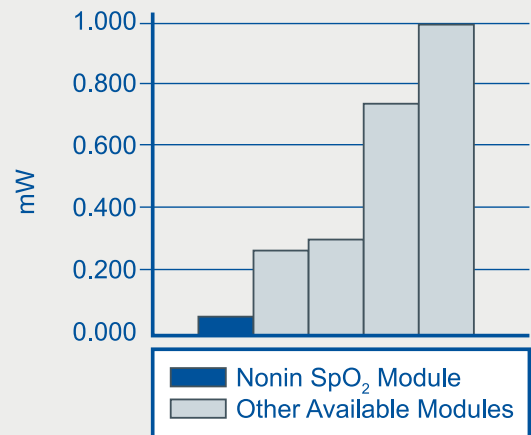
## PPG Digital Output Feature (OEM III Module)

The Photo Plethysmogram (PPG) Digital Output is typically used in conjunction with an ECG signal to measure Pulse Transit Time (PTT) from the heart to the SpO<sub>2</sub> measurement site.

The PPG Digital Output is a 100msec wide signal indicating pulse detection. The PPG output occurs 172msec ± 1msec after the middle of the pulse inrush.

*Available in the OEM III Module.*

**Power Draw Comparison**



## PureLight<sup>®</sup> Sensors – Adult to Neonate Sizes

NONIN has long recognized that accurate and dependable SpO<sub>2</sub> readings start with accurate and dependable sensors. PureLight technology boasts pure red and infrared LEDs to create unparalleled accuracy – even at critical SpO<sub>2</sub> levels. NONIN's PureLight LEDs hold a steady calibration curve even at SpO<sub>2</sub> levels below 80 percent.

## Reusable Flex SpO<sub>2</sub> Sensors with FlexiWrap<sup>®</sup>



8000J Adult Flex Sensor

+



8000JFW Adult FlexiWrap

=



Adult Flex System  
(> 20 kg / >44 lbs)

- ✓ Proven high-intensity LEDs for accuracy at critical SpO<sub>2</sub> levels
- ✓ Durability for repeated use
- ✓ Preferred choice in ambulatory settings
- ✓ Cost-effective and convenient
- ✓ Simple cleaning for ease-of-use
- ✓ Trim shape for comfort and contoured fit

## Reusable SpO<sub>2</sub> Sensors



8000AP Pediatric Finger Clip  
(10 - 40 kg / 22 - 88 lbs)



8000AA Adult Finger Clip  
(> 30 kg / > 66 lbs)

- ✓ Proven high-intensity LEDs for accuracy at critical SpO<sub>2</sub> levels
- ✓ Comfortable, self-aligning grips to assure proper placement
- ✓ Quick and easy application
- ✓ Easy-to-clean for convenience and reliability
- ✓ Finger, earlobe and forehead sensors for various monitoring applications
- ✓ Cost-effective and durable, backed with our warranty

## Disposable SpO<sub>2</sub> Sensors



7000A Adult Flexi-Form II  
(> 30 kg / > 66 lb)



7000N Neonatal Flexi-Form II  
(< 2 kg / < 4 lbs)

- ✓ Proven high-intensity LEDs for accuracy at critical SpO<sub>2</sub> levels
- ✓ Self-adhesive for extended monitoring and security
- ✓ Easy to apply by clinicians or patients
- ✓ Trim shape for comfort and contoured fit
- ✓ Assortment pack (7000D) includes 4 adult, 2 pediatric, 2 infant, and 2 neonate

to see the complete line of PureLight sensors please visit our web site at  
[www.nonin.com/products/sensors.asp](http://www.nonin.com/products/sensors.asp)

# our technology

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**NONIN PureSAT® signal processing technology** offers the highest quality pulse oximetry on the market today. PureSAT technology analyzes the entire plethysmographic waveform, locating the onset of a pulse, which results in the **extremely precise pulse detection**. Compare NONIN technology to other pulse oximetry technology and discover why our pulse detection capabilities are so precise. We identify the best and most reliable pulse signals on a **pulse-by-pulse** basis which results in an extremely quick response time to physiologic changes. With PureSAT technology built into every device, NONIN delivers **accurate performance** in challenging monitoring environments.

# our company

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## **NONIN – Where People Make the Difference**

NONIN Medical, Inc. combines over 20 years of clinical experience, technological leadership, precision manufacturing and uncompromised customer support to bring quality physiological monitoring devices, sensors, software and accessories to healthcare professionals worldwide. With over **800,000** oximeters in use around the world, NONIN is truly a leader in noninvasive monitoring.

**This leadership and innovation carries over into our OEM business.** NONIN provides the most cost-effective OEM solutions to easily integrate pulse oximetry into your device. From standard board configuration to wireless solutions, trust the most flexible OEM family in the world™ – we have a product that will fit your needs.

**NONIN provides SpO<sub>2</sub> to more than 90% of all sleep diagnostic manufacturers.** NONIN leads the industry in providing small, lightweight, portable pulse oximeters for spot checking, transport and continuous monitoring applications. Our products are currently used all over the world in homecare, hospitals, clinics, EMS, sleep labs, military, veterinary and many more settings. Trust NONIN's PureSAT signal processing technology to take your product to the next level. But don't take our word for it, ask some of our **more than 60 OEM partners** from around the world.

**PHILIPS • RESMED • GE • MEDCARE  
VIASYS • RESPIRONICS**

visit us online at [www.nonin.com/products/oem/partners.asp](http://www.nonin.com/products/oem/partners.asp)

# benefits

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- ✓ Low Power Draw
- ✓ PureSAT® Signal Processing Technology
- ✓ Expanded Output Capabilities
- ✓ Compatible with all PureLight® Sensors
- ✓ Motion & Low Perfusion Performance
- ✓ Small Size
- ✓ Simple Integration
- ✓ Cost-Effective
- ✓ Extreme Durability
- ✓ Proven Track Record

# development kits

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## **Quickly evaluate how each product will work for you.**

Each development kit includes the oximeter of your choice, a complete specification, a set of demonstration software, and all the interface cables required to run the oximeter from a standard PC.

- ✓ Internal or external solutions
- ✓ Flexible connectivity and wireless options
- ✓ Pure performance from NONIN

**call your NONIN OEM sales representative today for complete details,  
or visit us online at [www.nonin.com/products/oem](http://www.nonin.com/products/oem)**

# specifications

## 4100 Bluetooth® Oximeter



Oxygen Saturation Range	0 to 100%
Pulse Rate Range	18 to 300 pulses per minute
Accuracy*	±2 digits for adults using the Finger Clip Sensor. Model 8000AA-WO ±3 digits for adults using Flex Sensor. Model 8000J-WO
SpO <sub>2</sub> (70-100%) (±1 SD)†	±3% ±1 digit
Heart Rate	120 hours continuous operation
Battery Life	3" x 2.74" x 1.34" (without wrist strap)
Dimensions	125 g (with batteries installed)
Weight	

## OEM III Module



Oxygen Saturation Range	0 to 100%
Pulse Rate Range	18 to 300 pulses per minute
Accuracy*	No Motion Adults, Pediatrics ±2 digits Neonates ±3 digits
SpO <sub>2</sub> (70-100%) (±1 SD)†	Motion Adults, Pediatrics ±2 digits Neonates ±3 digits
Heart Rate	Low Perfusion Adults, Pediatrics ±2 digits Neonates ±3 digits
Power Draw	No Motion (18-300 BPM) Adults, Pediatrics, Neonates ±3 digits
Dimensions	Motion (40-240 BPM) Adults, Pediatrics, Neonates ±5 digits
Weight	Low Perfusion (40-240 BPM) Adults, Pediatrics, Neonates ±3 digits 29 mW typical operation @ 3.3VDC input voltage 1.35" x 0.95" x 0.245" (34.5 x 24.1 x 6.2 mm) 6.6 g (with shield)

## ipod®



Oxygen Saturation Range	0 to 100%
Pulse Rate Range	18 to 300 pulses per minute
Accuracy*	No Motion Adults ±2 digits Motion Adults ±3 digits Low Perfusion Adults ±3 digits
SpO <sub>2</sub> (70-100%) (±1 SD)†	Heart Rate No Motion (18-300 BPM) Adults ±3 digits Motion (40-240 BPM) Adults ±5 digits Low Perfusion (40-240 BPM) Adults ±3 digits
Power Draw	60 mW typical operation
Dimensions	1.26" x 1.25" x 2" (32 x 32 x 51 mm)
Weight	100 g (including 1m cable and connector)

## Xpod®



Oxygen Saturation Range	0 to 100%
Pulse Rate Range	18 to 300 pulses per minute
Accuracy*	No Motion Adults, Pediatrics ±2 digits Neonates ±3 digits
SpO <sub>2</sub> (70-100%) (±1 SD)†	Motion Adults, Pediatrics ±2 digits Neonates ±3 digits
Heart Rate	Low Perfusion Adults, Pediatrics ±2 digits Neonates ±3 digits
Power Draw	No Motion (18-300 BPM) Adults, Pediatrics, Neonates ±3 digits
Dimensions	Motion (40-240 BPM) Adults, Pediatrics, Neonates ±5 digits
Weight	Low Perfusion (40-240 BPM) Adults, Pediatrics, Neonates ±3 digits 60 mW typical operation 2.1" x 0.8" x 0.6" (53 x 20 x 15 mm) 75 g (including 6' cable and connector)

\* All accuracy specifications are results determined by induced Hypoxia studies on healthy adult volunteers using the 8000AA Finger Clip Sensor.

† Standard Deviation (SD) is a statistical measure: up to 32% of the readings may fall outside these limits.

**for detailed product specifications, please visit our website at [www.nonin.com/products/oem](http://www.nonin.com/products/oem)**

## Your Partner of Choice



With over 20 years of experience and dedication to the design and support of noninvasive monitoring devices, NONIN has helped many medical professionals meet clinical and economic objectives. Trusted by clinicians worldwide, countless tests are performed every day on thousands of NONIN pulse oximeters in more than 125 countries. NONIN's dedication to technological leadership, precision manufacturing and uncompromised customer support ensures quality products and service you expect.



[www.nonin.com](http://www.nonin.com)

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