



## SM-PM03 Vital Signs Monitor (7 inches)

### Technical Data Sheet - Release V2.1

The F3 vital signs monitor is engineered for the mobile, precise and fast recording of vital signs data at clinics, hospitals and outpatient treatments. Ergonomical design and highly developed technology resulting in reliable measurement results and time efficiency.

**12V DC** power supply for ambulance use

An optional **HDMI output** eases observation from a long distance.

## Features

### Core

- Newly advanced A8 main board with Linux OS, calculating speed is 4 times faster than traditional products
- Support **storage** of 2160 hours trend table and graph review, 2 hours waveform review, 2000 groups NIBP review and 2000 alarm events review

### Body

- 7 inch high-brightness TFT LED
- Standard **touch screen** configuration
- Optional **HDMI** output



### Printer

- USB External high-speed 50mm thermal printer (Brand: SEIKO, Japan)

### Central System

- Optional **Build-in wireless network module**, supporting wired or wireless connection to the central monitoring station.
- Optional Support HL7 (Health Level Seven)

### Alarm

- Three-level acousto-optic alarm
- Sensor-off alarm
- Paper out alarm
- Support alarm review

### Interface

- Support alarm pause

### Linux OS

- **Multi-display mode** to meet different clinical requirement

- **NIBP self-test mode**: including overpressure test, static pressure test and air leakage test.

- **Generate ID** automatically when register a new patient
- Support **medical history search** by patient ID, name and mobile number

- Optional **infrared thermometry** allows clinicians to obtain patient's temperature using non-invasive infrared technology that detects heat from the skin's surface

- 18 types of **Arrhythmia analysis** and real-time S-T segment analysis and **pacemaker detection**

- **Drug calculation** and **titration table**

- Support **multi-language** display

- Support **online software upgrading** by net/USB

- Suitable for monitoring adult, pediatric and neonatal patient.

### Transducer socket

- SPO2

- NIBP
- TEMP I
- Mainstream EtCO<sub>2</sub>



### LAN / Central monitor system interface

- The LAN port is for connecting the monitor to a central monitor system network.

- Infrared thermometry

### Input device interface

- This optional interface provides an USB ports to enable the monitor to be connected to off-the-shelf input devices:



- Mouse: any specified trackball or USB mouse may be used for navigation and data entry.
- Computer keyboard: an USB computer keyboard can be used for data entry instead of the on-screen pop-up keyboard.

*[Remark: user has to restart the machine after plug and unplug the mouse / computer keyboard.]*

- Suntech NIBP module



- Nellcor SpO<sub>2</sub> module

- Touch screen (Standard)

*[Remark: Touch screen can not be used simultaneously with mouse / computer keyboard.]*



- Masimo SpO<sub>2</sub> module

### Service Features

- The Support Tool helps technical personnel to
  - carry out configuration, upgrades and troubleshooting on an individual monitor.
  - back up the monitor settings.
- The Service Mode is password-protected and ensures that only trained staff can access service tests and tasks. It includes Skin Type, Brightness Setting, Clear Data, NIBP Calibration and Touch Screen Calibration.
- The Support Tool uses the USB interface of the monitor for software upgrading.

### Related Product

## Dimension and Weight

- Dimension: 210mm\*130mm\*75mm
- Weight: 1kg (excluding accessories)

- IEC60601-1 Approved, CE marking according to MDD93/42/EEC

- With reference to RoHS Directive 2011/65/EU recasting

## Power Supply

- Voltage: AC100 ~ 240V, 50/60HZ
- Adapter: Output 9VDC, 5A

## Trend & Reviewing

- Trend: 2160 hours
- ARR events: 128 groups of ARR events and associated waveform
- NIBP measurement reviewing: 2000 groups
- Waveform review: 2 hours
- Alarm event: 2000 groups of parameter alarms events and associated parameter

## Display

- 7" color TFT LED
- Resolution: 800\*480 pixels

## Heart Rate

- Measure range:

Adult: 0bpm; 10 ~ 300 bpm

Neo/Ped: 0bpm; 10 ~ 350 bpm

- Resolution: 1 bpm

- Accuracy:  $\pm 1\%$  or  $\pm 1\text{bpm}$ , whichever is greater

## Battery

- Type: Rechargeable lithium battery 7.4V/2200mAh
- Charge Cycle:  $\geq 500$  times
- Working time: 2-3 hours (optional larger battery for 4-5 hours)

## NIBP

- Method: Oscillometric
- Measure mode: Manual, Auto, STAT
- Measure Interval in AUTO Mode 1~480 min
- STAT mode cycle time: Keep 5 minutes, at 5 seconds interval
- Measure and Alarm Range:

Adult: SYS: 30 ~ 270 mmHg

DIA: 10 ~ 220 mmHg

MEAN: 20 ~ 235 mmHg

Pediatric: SYS: 40 ~ 235 mmHg

DIA: 10 ~ 220 mmHg

MEAN: 20 ~ 225 mmHg

Neonate: SYS: 30 ~ 135 mmHg

DIA: 10 ~ 110 mmHg

MEAN: 20 ~ 125 mmHg

- Static pressure accuracy:  $\pm 3\text{mmHg}$

- Resolution: 1mmHg

- Accuracy: Maximum Mean error  $\pm 5\text{mmHg}$

Maximum Standard deviation  $\leq 8\text{mmHg}$

- Over pressure Protection: Dual protection via software & hardware

## SpO2 (Digital Technic)

- Measurement Range: 0 ~ 100 %

- Resolution: 1 %

- Accuracy:  $\pm 2\%$  (70% ~ 100%)

$\pm 3\%$  (35% ~ 69%)

Unspecified (0 ~ 34%)

- Support Pitch tone and multi-level volume

## Pulse Rate

- Measuring and Alarm Range: 25~250bpm

- Accuracy:  $\pm 1\%$  or  $\pm 1\text{ bpm}$ , whichever is greater

- Resolution: 1bpm

## System Output & Extensible Interface

- Ethernet Network: 1 standard RJ45 socket
- USB Port: 1
- Video Output: 1 HDMI port (option)

## Operating Environment

- Temperature: 5 ~ 40 °C
- Humidity: 15% ~ 80% (non-condensing)
- Atmosphere pressure: 86 KPa ~ 110 KPa

## Transportation and Storage Environment

- Temperature: -20 ~ 50 °C
- Humidity: 10% ~ 90% (non-condensing)
- Atmosphere pressure: 86 KPa ~ 110 KPa

## Nellcor-SpO2 (Option)

- Measurement Range: 0 ~ 100 %
- Resolution: 1 %
- Accuracy: 70% ~ 100%,  $\pm 2$  % (adult)  
70% ~ 100%,  $\pm 3$  % (Neonate)  
70% ~ 100%,  $\pm 2$  % (Low Perfusion)  
0% ~ 69%, unspecified

### Pulse Rate

- Measurement range: 20 ~ 300 bpm
- Resolution: 1 bpm
- Accuracy:
  - $\pm 3$  bpm (20 ~ 250 bpm)
  - unspecified (251~300 bpm)

## Masimo SpO2

- Measurement Range: 0 ~ 100 %
- Resolution: 1 %
- Accuracy:
  - 70% ~ 100%,  $\pm 2$  % (adult/ pediatric, non-motion conditions)
  - 70% ~ 100%,  $\pm 3$  % (neonate, non-motion conditions)
  - 70% ~ 100%,  $\pm 3$  % (motion conditions)
  - 0% ~ 69% unspecified

### Pulse Rate

- Measurement range: 25 ~ 240 bpm
- Resolution: 1 bpm
- Accuracy:  $\pm 3$  bpm (non-motion condition)

*\* Specifications subject to change without prior notice*

## Model Configuration

Standard Config.	With 7' LED, Touch Screen
Config. A	SpO2, Pulse Rate
Config. B	SpO2, Pulse Rate, NIBP
Config. C	SpO2, Pulse Rate, NIBP,Temp
Optional Config.	Nellcor SpO2, Masimo SpO2, Suntech NIBP, Infrared thermometry
Optional Accessories:	Printer, HDMI Output, Wall-mounting, Trolley, Bed Hanger
	Central Monitoring Station
	Neo/Ped Accessories