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Your life   With care   Anywhere

The market leaders in communications-enabled vital signs monitoring

Overview

An advanced multi-parameter vital signs monitor

Providing a wide range of features in a highly robust package

Integrated voice link and video camera

Usability

Control Interface
- User interface is provided by a touch screen, jog wheel and simple graphically labelled buttons

Alarms
- Full user configurable visual and audible alarms

Display
- Full colour 6.5" VGA screen
- Daylight readable display using transflective technology
- Device can be set to an appropriate viewing angle with the integral foot
- Rear of the **Tempus IC Professional**™ houses the **RapidPak**™ which enables easy deployment and storage of sensors and cables

Accessory Case
- All parts are packaged within a high quality case for simple, consistent layout

Non-Invasive Blood Pressure (NIBP)

Adult / Large Adult Cuff Ratings
- Range: 20 - 260mmHg
- Accuracy: ± 3mmHg or ± 2% (whichever is greater)

Child Cuff Ratings
- Range: 20 - 160mmHg
- Accuracy: ± 3mmHg or ± 2% (whichever is greater)

Pulse Oximeter

SpO_2
- Range: 50% - 100%
- Accuracy: ±2% at 70% - 100%
- Perfusion Index range: 1% - 20%
- Signal strength indicator
- Employs patented SAC technology, Nellcor compatible
- Uses comfortable, waterproof soft-tip sensor

Pulse Rate
- Range: 25 - 300 bpm
- Accuracy: ± 1bpm

3 Lead ECG Monitor

- 4 wire monitoring via standard snap-on electrodes
- Input impedance: >100MΩ
- Dynamic range: ±6mVac
- Accuracy: ±4%
- DC offset: ±300mV DC
- Frequency response: 0.05Hz to 175Hz ±3dB
- Sample rate: 1000Hz
- Common mode rejection: -60dB minimum, additional filters include mains, muscle, low and high pass and adaptive baseline zeroing

12 Lead ECG Recorder

- 12 lead ECG using pre-set electrode apron for quick usage or standard snap-on electrodes
- Transmits 10 seconds of all 12 leads
- Full back-end measurement tools

Capnometer

Respiration Rate
- Range: 2 - 150 BPM
- Accuracy: ± 1 BPM

Sidestream $ETCO_2$
- Range: 0 - 150mmHg
- Accuracy: ±2% - ±10%
- Delay time: <3 seconds

Thermometer[5]

- Hand-held, Bluetooth® enabled infra-red tympanic thermometer for spot-checking
- Measurement range: 34°C - 42.2ºC (target) (93.2°F - 108°F)
- Resolution: 0.1ºC (0.2°F)
- Accuracy: ±0.2ºC (36-39°C) ±0.3°C (<36°C & >39°C) [±0.36ºF (96.8-102.2°F) ±0.54ºF (<96.8°F & >102.2°F)]
- Display convertible to °F
- Bluetooth® communications range 0 – 10m (0 – 32' 9")

Integral Digital Camera

- Full colour VGA camera
- Aperture size F1:2.8, focal length 2.54mm (0.1inch)

- Takes still pictures or moving video using the H264 algorithm (high bandwidth satcoms channels only for video)
- Images can be annotated with text, colours, shapes and graphics which can be sent back to the **Tempus IC Professional**™ by the hospital

Power

- Single, external, user replaceable lithium-ion battery
- Integral battery strength indicator
- Battery life: 7 hours[2] approx
- Nominal 7.4V 8.7Ah / 64.4Wh
- Approximately 80% of capacity after 12 months in storage[2] this equates to over $5\frac{1}{2}$ hours of use
- Charge time: $5\frac{1}{2}$ hours[2] approx

Charger
- External charger, charges the battery separately from the **Tempus IC Professional**™
- Charger PSU rated 100-250V, 50-60Hz
- Charge time: $5\frac{1}{2}$ hours[2] approx

Power Supply
- External power supply provided
- PSU rated 100-250V, 50-60Hz
- Battery may optionally be charged by the **Tempus IC Professional**™ when running on mains power[3]

Compliance

Aviation Standards
- EMC emissions: RTCA DO160E Section 21 Cat M

Environmental Standards

- Temperature**: DO160E Sec 4, Para 4.5.1 – 4.5.3
- Altitude**: DO160E Sec 4, Para 4.6.1 and 4.6.2
- Rapid Decompression DO160E Sec 4.6.2, 8000-51000 ft in 1 second
- Temperature Variation: DO160E Sec 5 Cat C: 2℃/min
- Humidity: DO160E Sec 6 Cat A
- Operational Shocks: DO160E Sec 7.2 Cat B
- Crash Safety: DO160E Sec 7.2 Type F 20g all directions
- Vibration: DO160E Sec 8 Para 8.5.2 Cat R & U2 Procedure: Fig 8.1 Curve B3, Fig 8.7 Curve F
- Approved to IP66 according IEC60529
- Exceeds requirements of MIL 810F (1.2m (3' 11") foot drop all corners, edges and faces)
- Enclosure withstands a 500g (1.1lb) steel ball dropped from 1.3m (4' 3")[7]

Medical Safety and Performance Standards

- IEC60601-1: electrical safety
- IEC60601-1-2: EMC
- IEC60601-1-8: Alarms
- IEC 60601-2-25: ECG recorders
- IEC60601-2-27: ECG monitors
- IEC 60601-2-30: blood pressure monitors
- IEC 60601-2-49: vital signs monitors
- EN21647: gas monitors
- ISO 9919: pulse oximeters
- EN 12470-5: thermometers

Environmental

- Operating temperature range: 0ºC to 40ºC (32ºF to 104ºF)
- Relative humidity: 15%-95% (non-condensing) operating and storage
- Altitude: 0-4500m (0-14750ft) (can be used at higher physical altitudes provided the local atmosphere is no higher than 4500m (14750ft), e.g. in a pressurised aircraft cabin)
- Storage temperature range: -20ºC to +60ºC (-4ºF to +140ºF)

Physical Dimensions

- Standalone size: 255mm (10.04") wide x 203mm (7.99") high x 101mm (3.98") deep
- Standalone weight: 2.7kg (5.9lb) nominal including battery and **RapidPak**™

Communications

Bluetooth®

- Used for communication with the device's accessories
- Version: V1.2
- Range:100m (328ft) (free field), class I

Voice Communications

- Voice communication is provided over a 10m (32' 9") range by a Bluetooth® headset[1]
- Voice channel is full duplex
- The headset's battery is topped up by the main system battery
- Range 10m (32' 9") (free field)

Ethernet

- Compatible with BGAN, SwiftBroadband, Swift 64, FleetBroadband, Fleet F77, Maritime B and VSAT systems[4]
- Low bandwidth compatible (15kbps)
- LAN interface: 10Base-T X
- Connected via an RJ-45 plug

Integral WiFi

- 802.11b
- Range: up to 100m (328ft) (free field)
- Uses 128bit encryption, WPA2 and WEP standards to ensure security

FIPS 140-2 Level Encryption[6]

- All voice, data and video communications of the Tempus IC Professional are transmitted using an NSA compliant FIPS 140-2 security encryption algorithm to ensure all communications meet the needs of military users.

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1. A wired headset is also provided.
2. Subject to conditions of storage and use.
3. Internal charging can be restricted if required.
4. Limitations apply and contract required.
5. Optional feature.
6. FIPS security encryption is an optional extra
7. Display withstands a 500g (1.1lb) steel ball dropped from at least 0.5m (1' 8").