Capsule Neuron

The Capsule Neuron is a bedside device that enables the automatic collection of vital signs data. It features local data storage, and connects to the hospital network through a wired Ethernet or a standard 802.11 b/g/n wireless network, thereby eliminating additional network ports at the bedside. It is the core hardware component of Capsule’s DataCaptor Connectivity Suite.

Capsule Neuron Specifications

CPU
- Intel Atom™ Z510 CPU 1.1GHz FSB400MHz

Memory/Storage
- 4GB industrial flash memory (no hard drive)

Network Connectivity
- WLAN 802.11 b/g/n 2.4GHz
- Ethernet - 1 x 1000 base-T Gigabit LAN
  (Note: Physical connectivity goes through the Docking Station)

Security/Authentication
- Supports WPA2 Personal/PSK
- Advanced Encryption Standard (AES)/802.11i

Quality of Service
- 802.11e with 802.1q tagging

Cooling
- Passive cooling system (fan-less)

LCD Display & Touchscreen
- Display: 7” wide active matrix TFT, 1024 x 600
- Brightness: 375 cd/m²
- Contrast: 400 : 1

Power Adapter
- The Capsule Neuron is powered from the Docking Station (refer to Docking Station and Mini Dock Technical Specifications)

Battery
- Charging time: 4 hours (with new battery)
- Battery life: 3 hours for a new battery
- 80% of this capacity after 300 cycles with proper maintenance

Mechanical & Environmental
- Operating Temp: 0 ~ 40°C (32 ~ 104°F)
- Storage Humidity: 5 to 95% (non-condensing)
- Dimensions: L = 211mm x W = 30mm including Rubber Boots
- Gross Weight: < 1.4kg
- Vibration: 1G RMS, 5-500 Hz, random operation
- Crash Shock: 10G/peak (11m sec)
- Transit Drop: Over 122cm (4 feet) drop to wood

Atmospheric pressure
- Operating: 700hPa to 1060hPa
- Storage: 500hPa to 1060hPa

Certifications
- EN/IEC 60601-1, EN/IEC 60601-1-2
- FCC Part 15 (Class depends on docking station)
- CE regulations:
  - RoHs Compliant
  - Medical Devices Directive - 93/42/EEC
- Capsule’s DataCaptor Connectivity Suite holds FDA 510(k) Class II clearance as a medical device

Ordering Information
Capsule Neuron: #DC-NU-UMPC
Capsule Neuron Docking Station Specifications

In higher acuity environments, such as the ICU, the Capsule Neuron is typically mounted on the wall to collect vital signs continuously from multiple medical devices in the room. This configuration requires the Capsule Neuron to be mounted on a Capsule Neuron Docking Station.

Serial Connections
- 4 serial ports with RJ45 style connectors for medical devices (fully RS232 compliant port)
- Provides +/- 5V (10V peak) on RTS and CTS lines
- Automatic hardware (RTS/CTS) flow control
- Isolated power from serial ports to 1500VAC per EN 60601-1

USB Ports
- 2 USB 2.0 Type A ports with positive locking mechanism

Future Expansion
- Internal expansion slot for UHF Gen2 RFID reader module and external antenna port (left and right side) to support future RFID reader

Power Adapter (medical grade)
- External power adapter 60W, 20 VDC
- Power adapter locking connector, positive locking mechanism to prevent accidental disconnection

Network
- Physical connection via Ethernet port
- Ethernet controller on the Capsule Neuron

Mounting Hardware
- VESA 75/100 standard mounting bracket

LED Status Indicators
- Network connectivity— wired and WLAN
- Docking status
- Server connection status

Physical Security
- Positive locking mechanism to secure the Capsule Neuron to the Docking Station
- Hex key required to unlock device from Docking Stations

Mechanical & Environmental
- Operating Temp: 0 ~ 40°C (32º ~ 122ºF)
- Storage Humidity: 5 to 95% (non-condensing)
- Dimensions: L = 241.3mm x W = 99mm x H = 170mm
- Weight: < 1.59 kgs (3.5 lbs), 2.27 kgs (5.0 lbs) with AC power supply

Certifications
- EN/IEC 60601-1, EN/IEC 60601-1-2
- FCC Part 15 Class B
- CE regulations:
  - RoHS Compliant
  - Medical Devices Directive - 93/42/EEC

Ordering Information
Capsule Neuron Docking Station: #DC-NU-DS
Capsule Neuron™

Capsule Neuron Mini Dock Specifications

In lower acuity environments, such as med-surg and general wards, the Capsule Neuron is typically mounted on a roll stand with a vital signs monitor to enable the automatic collection, validation, and submission of vital signs from the bedside to the receiving information system. This configuration requires the Capsule Neuron to be mounted on a Capsule Neuron Mini Dock.

Serial Connections
- 1 serial port with RJ45 style connector for connecting medical devices (fully RS232 compliant)
- Isolated power from serial port to 1500VAC per EN/IEC 60601-1

USB Ports
- 3 USB 2.0 ports with positive locking mechanism

Power Adapter (medical grade)
- External power adapter 60W, 20 VDC
- Power adapter locking connector, positive locking mechanism to avoid accidental disconnection

Network
- Physical connection via Ethernet port
- Ethernet controller on the Capsule Neuron

Mounting Hardware
- VESA 75 standard mounting bracket

Physical Security
- Positive locking mechanism to secure the Capsule Neuron to the Mini Dock (using 2 screws)
- 4 screws to attach securely the Capsule Neuron and Mini Dock to the mounting pole
- Phillips screwdriver required to unlock the Capsule Neuron from the Mini Dock

Mechanical & Environmental
- Operating Temp: 0 ~ 40°C (32° ~ 104°F)
- Storage Humidity: 5 to 95% (non-condensing)
- Dimensions: L = 151mm x W = 68mm x H = 164mm
- Weight: 260 g

Certifications
- EN/IEC 60601-1, EN/IEC 60601-1-2
- FCC Part 15 Class A
- CE regulations:
  – RoHS Compliant
  – Medical Devices Directive - 93/42/EEC

Ordering Information
Capsule Neuron Mini Dock: #DC-NU-MD