

AvidHRT Sense

basic testing model

1. Product Description

AvidHRT is a Bluetooth Low Energy enabled device which measures EKG, Pulse Oximetry and Skin Temperature. AvidHRT has low power requirements, it is small (cylindrical with 53 mm diameter, 20 mm height) and low-cost device. It consists of a device (the main control unit) and three sensors EKG, pulse oximetry and skin temperature measurement (Figure 1).

AvidHRT first reads the voltage signal generated by the test subject, then filters out the background noise and amplifies the signal to a manageable level. After that, it converts this analog signal to digital bits and transmits this signal over Bluetooth. Finally, these transmitted data are displayed graphically and numerically on the smartphone device and saved for future reference within the application or can be uploaded to a cloud server.

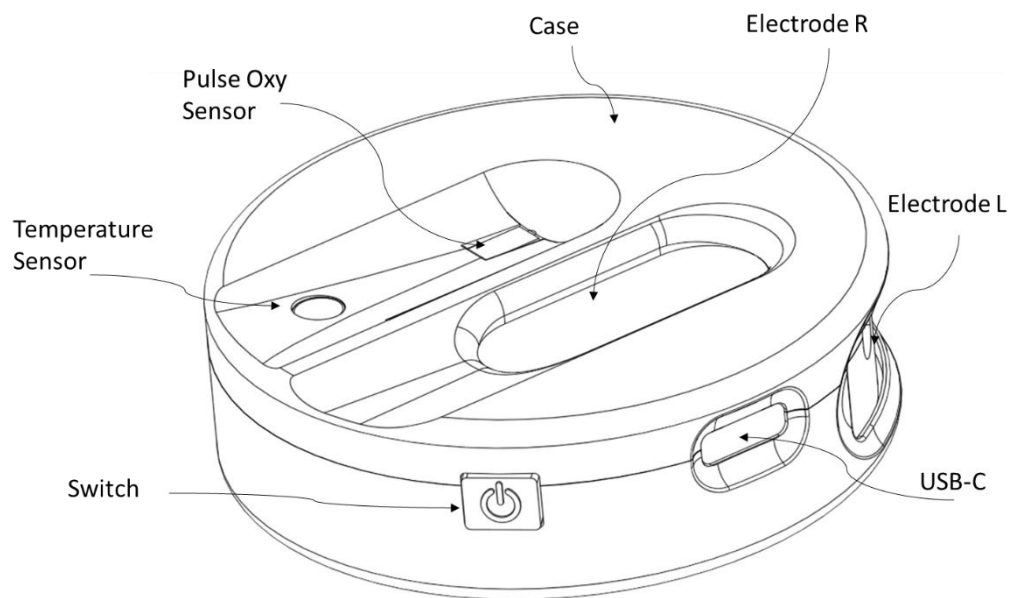


Figure 1. Device and Sensors

The handheld unit includes the hardware to accomplish the main device functions. The handheld unit consists of a disc-shaped housing (“case”), which encloses electronic components. Figure 1. provides an exterior view of the handheld unit, depicting the case and external features. The

handheld unit is a cylindrical shape device with 55 mm diameter and 20 mm height. The user will keep right hand middle finger (Electrode) and index finger (Pulse oximetry, Temperature sensor) on top of the device and keep the left-hand index finger on the side (Electrode L) of the device to take a reading.

Pulse oxy sensor on the right index finger measures the oxygen saturation in the blood. Two electrodes, Electrode R on the top and Electrode L on the side reads the ECG measurement. Contactless Temperature sensor is used for skin and environment temperature. The switch on the device helps to connect the device with the mobile application. USB-C charging port is used to charge the battery of the device.

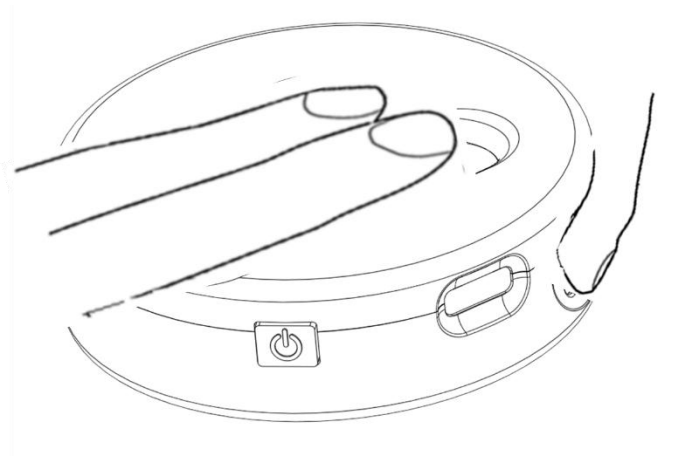


Figure 2. Handheld unit

As shown in Figure 2. above, the handheld unit external features are the following:

- Pulse Oximetry Sensor - the portion of the pulse oximetry sensor accessible for fingerpress
- Electrode L - the portion of the left electrocardiography (ECG) electrode accessible for fingerpress
- Electrode R - the portion of the right ECG electrode accessible for fingerpress
- Temperature Sensor - the portion of the temperature sensor accessible for fingerpress
- USB-C Port - a female USB-C port, internally hardwired to the battery (and associated electronic components), intended to connect to the male micro-USB end of the charger for charging
- Switch - a pushbutton switch for performing device functions

The circuit board, battery, sensors (including the ECG electrodes), and software are described in more detail in the subsections below.

2. Specifications

Parameter	Specification
Device	
Physical Specs: Dimensions Weight	Cylindrical: 53 mm diameter, 20 mm height 100 grams
Memory	Practically Unlimited due to real-time transmission to mobile phone memory
Power Supply Battery Battery Life	Li-Po Battery: 3.7 V, 300 mAh 100 hours operational, rechargeable
Data Upload	Bluetooth Low Energy
Software Interface	ios based platform Android based platform Web based platform
Environmental	
Temperature Ranges	Operating: Storage:
Relative Humidity (non-condensing) Ranges	Operating: Storage:
Barometric Pressure Ranges	Operating: Storage:
Shelf Life	Operating: Storage:
ECG	
ECG Channel	Single Channel - Lead I
Heart Rate Accuracy	± 5 bpm
Frequency Response	0.5 Hz to 40 Hz
A/D Sampling Rate	360 samples/second
Resolution	10 bit
Electrodes	Integrated into device
Skin Contact	Any part of the finger (left to right)
Material	Silver

Parameter	Specification
SpO₂	
SpO ₂ Type	Reflective
SpO ₂ Accuracy	± 2%
Pulse Rate Accuracy	± 5 bpm
Frequency Response	0.5 Hz to 40 Hz
A/D Sampling Rate	100 samples/second
Resolution	16 bit
SpO ₂ sensor	Integrated into device
Skin Contact	Any finger, typically right index finger
Material	Acrylic Glass
Temperature	
Temperature Sensor Type	IR Temperature Sensor - MLX90615
Temperature Accuracy	0.5 °C
A/D Sampling Rate	1 samples/second
Resolution	16 bit
Temperature sensor	Integrated into device
Skin Contact	Contactless. Pointed towards the finger.
Material	Acrylic Glass
Battery	
Model	602030
Standard Capacity	300 mAh
Standard Voltage	3.7 V
Charge Voltage	4.20 ± 0.03 V
Charge Time	About 2 hours
Discharge Cutoff Voltage	2.7V
Physical Specs: Dimensions Weight	6.5mm thickness, 20mm width, 30mm length 6.8 grams
Connector and PCM	Protect circuit module board(PCM) inside, with red(+) and black(-) wire lead out

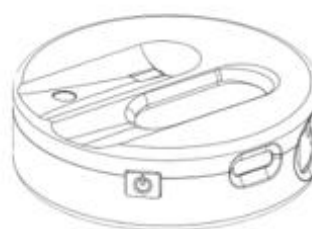
USER MANUAL

AvidCor is a mobile, clinical-quality electrocardiogram (EKG or ECG), pulse oximetry (SpO2), and temperature recorder. The duration of the recording is established by the AvidCor phone app and handheld device with a default setting of 30 seconds. The AvidCor phone app may extend recordings to a maximum time of 5 minutes. The software application can store thousands of recordings on your smartphone or tablet and these recordings are also accessible to authorized users on AvidCor servers (www.avidcor.com).

Patients with known or suspected heart conditions and health-conscious individuals can use AvidCor Mobile to record an ECG, SpO2 and Temperature daily or whenever they are feeling symptoms, and share their recordings with their physician. Medical professionals can quickly assess rate and rhythm, screen for arrhythmias, and remotely monitor and manage patients who use AvidCor.

The AvidCor product consists of:

- AvidCor handheld device
- AvidCor mobile app
- A user-supplied compatible smartphone or tablet



Download the AvidCor App



Turn the device on



Press the power button on the device

Open the app and connect



Press the connect button on the app.

Press the record button



Reading will start automatically

Hold the device



Right hand middle finger and index finger on top of the device.
Left hand index finger is on the side.

Get Results



Hold the device firmly until the timer stops (45 second by default). The record will be saved at this point.

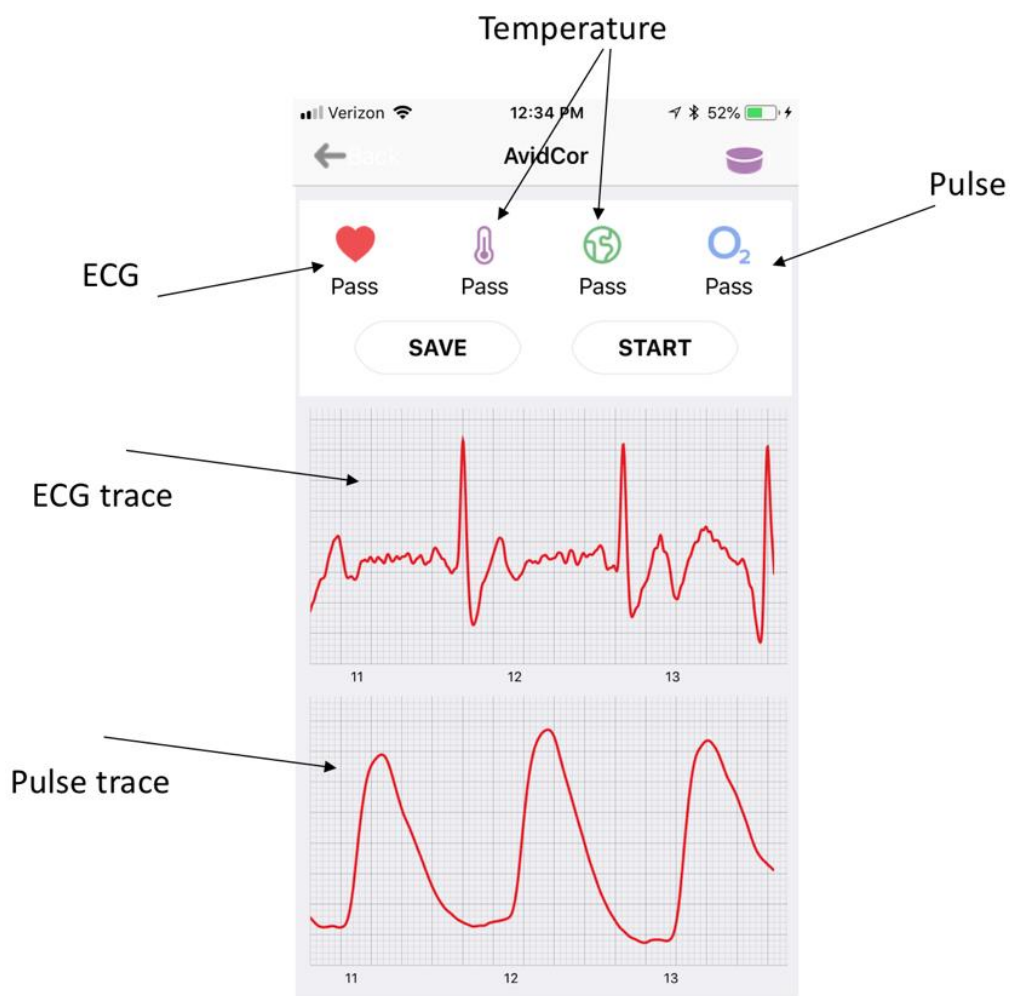
Device Information

1. Press the switch once to activate the AvidCor handheld device. The LED will blink in red to indicate that the device is ready for a connection.
2. Make sure your handheld device has enough battery charge. When you press the switch, if the LED doesn't blink, then change the device battery. LED modulates slowly bright to dim when it's charging. Solid LED for fully charged.
3. To reduce muscle noise, rest your arms on a flat surface to increase stability while you are recording.
4. When the mobile app is closed the device will be go to sleep; the LED will go off automatically.

For support, please email support@avidcor.com or visit www.avidcor.com

3. Principal Operation

- Install the AvidCor Testflight app on iPhone 7 (we will help you to install this app)
- Press the button on device and open the app and connect the device with app (See user-manual in additional help for more help)
- Press the record button, hold the device on hand as instructed in the manual and you will see the reading.
- Based on the results update the testing sheet. Please make sure ECG and pulse traces have similar pattern as on the picture



FCC ID: 2AQ2K-BASIC

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter