

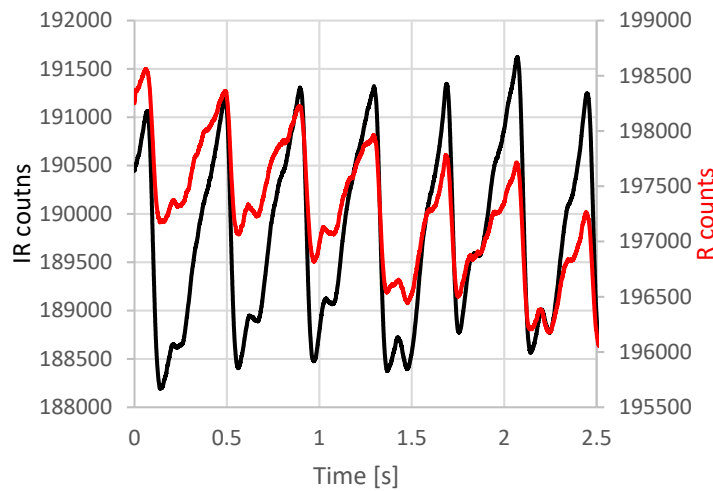
Recommended Use of Finger Holder during Reflective PPG Measurements

1. Overview

Reflective PPG is measured against the skin with an emitter and receiver on the same side. The light entering the skin gets diffused, absorbed, and reflected by the tissue and the blood. The reflected light is detected by the sensor.



The observed signal has a large static or DC component on which the small AC cardiovascular signal appears. The ratio of AC/DC is relative to the tissue perfusion and is used for blood oxygen saturation calculations.



For reliable measurements, the preference is for a low noise AC signal, a good AC to DC ratio, and a stable DC signal.

2. Good AC Signal

In order to get a good AC signal, illuminate as much tissue as possible. Lay the finger flat on the sensor / finger rest with the center of the fingerprint about on top of the sensor.

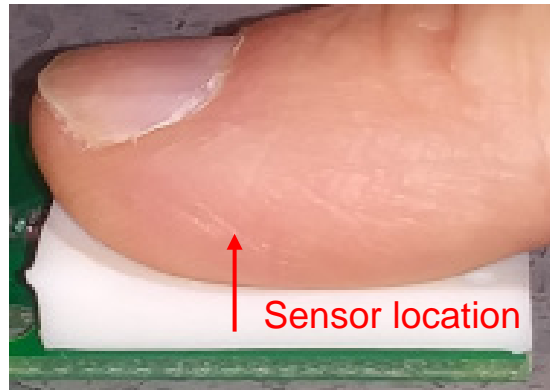


Figure 1. Recommended Finger Position Relative to Sensor

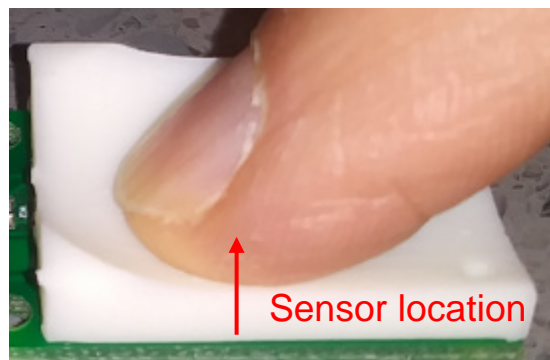


Figure 2. Not Recommended Finger Position Relative to Sensor

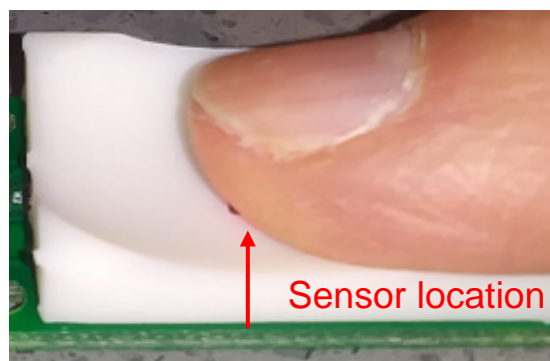


Figure 3. Not Recommended Finger Position Relative to Sensor

3. Stable DC Signal

Even slight finger movements or changes in the pressure between finger and finger rest can result in dramatic changes in the DC signal. In order to minimize movements:

- Place the sensor board on a firm surface.
- Rest your hand and elbow on that surface.



- Lay the finger flat on the finger rest and press down on it by about 1 mm to stabilize the finger position. This may also result in a better AC signal bringing the blood vessels closer to the sensor without restricting the blood flow.
- Avoid moving your body during the measurement.
- Avoid talking during the Respiration Rate measurement.

4. Revision History

Revision	Date	Description
1.0	Mar 15, 2021	Initial release.

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