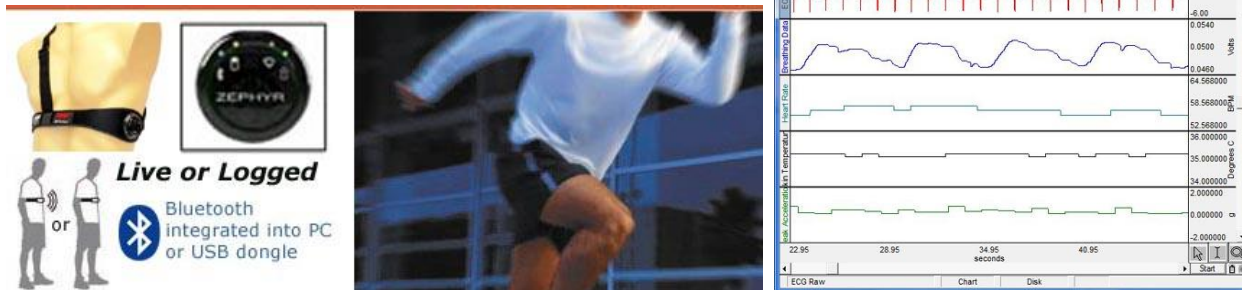


## BIOHARNESS WITH ACQKNOWLEDGE

BioHarness Data Logger and Telemetry Physiology Monitoring System

BioHarness-5 Data Logger and Telemetry Physiology Monitoring System (five-system package)

- Go to [www.biopac.com](http://www.biopac.com) for a video of BioHarness in use
- Complete [BioHarness Users Guide](#) is online



BioHarness™ with AcqKnowledge® software is a state-of-the-art lightweight portable biological data logger and telemetry system. It monitors, analyzes and records a variety of physiological parameters including ECG, respiration, temperature, posture, and acceleration. The BioHarness operates in RF (Radio Frequency) transmitting mode for live viewing of data or data logging mode. In the data logging mode, the BioHarness logs the data for later download to the AcqKnowledge software using the USB docking and charging cradle that comes with the system. BioHarness applications include physiology, psychology, psychophysiology, exercise physiology, ergonomics, human factors, and more.

### BioHarness-5

This five-system BioHarness solution is ideal for small group studies.

### BioHarness Data Channels

- ECG – Raw
- Breathing
- RR Interval
- Heart Rate
- Respiration Rate
- Posture
- Vector Magnitude
- Peak Acceleration
- Breathing Wave Amplitude
- X axis acceleration min
- X axis acceleration peak
- Y axis acceleration min
- Y axis acceleration peak
- Z axis acceleration peak
- Z axis acceleration min

Live data viewing features include a variety of selectable waveforms and trend data including:

- ECG
- Heart Rate
- RR values
- Respiration
- Tri-axial accelerometer (X, Y & Z)
- Activity level
- Posture (attitude of device in degrees from vertical)

BioHarness™ is a trademark of Zephyr Technology Limited.

## Specifications

- Acceleration** Highpass 0; Low pass limited to 10.5 Hz, and sampled at 18 Hz. The maximum and minimum measured in each second are reported.
- Posture** Highpass 0. Based on the accelerometer with a 6.5 Hz low pass filter to limit the noise resulting from movement and provide a stable reading.
- Activity** Requires the magnitude of the AC components of each axis; uses a digital 0.1 Hz highpass filter and a 10.5 Hz lowpass hardware filter. Sampled at 18 Hz and accumulated for 1 second reporting.
- Respiration** Detect breathing rates from 3 BPM to 70 BPM (0.05 Hz to 1.166 Hz)
- ECG** In hardware, the signal is filtered with a highpass filter at 15 Hz and a low pass filter at 78 Hz. The low end filter cut-off enables heart rate measurement under vigorous activity (high resistance to motion artifact). The sample frequency is 250 Hz.

## Smart Fabric Strap

- Chest Strap: Adjustable, Velcro® fastening  
Material: Elasticized webbing incorporating Zephyr Smart Fabric sensors  
Width: 50 mm  
Weight: 50 grams  
Size: BioHarness ships with a small-to-medium strap  
Additional straps are available:  
RXBHSTRAP-S-M (small to medium size frames, 69-84 cm; 27-33")  
RXBHSTRAP-M-XL (medium to extra-large size frames, 84-104 cm; 33-41")

## BioHarness Transmitter/Logger

- BioHarness or BioHarness 5 (five bundled systems for small group studies)  
Frequency: Bluetooth 2.4 to 2.835 GHz  
Sample Rate: 250 Hz Max.  
Memory Capacity: ~480 hours  
Transmit Range: Up to 100 m, environment and antenna dependent  
Weight: 18 grams  
Size: 28 mm (diameter) x 7 mm

## Battery Life

- ~ 12-28 hours transmitting
  - ~ 35 hours logging
- Charging is intelligent - the device cannot be overcharged
- Quick Charge (90%): 1 hour from fully discharged
  - Full charge (100%): 3 hours from fully discharged

## Connectivity

- USB (either built-in chip or USB Bluetooth dongle)

## Compliance

- 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.
  2. This device must accept any interference received, including interference that may cause undesired operation.