CLAIMS

1. A physiological monitoring system comprising:

a wearable comprising:

at least one sensor for measuring a physiological parameter of a user;

an acoustic sensor for receiving an acoustic signal;

a pre-processor operable to receive data from the at least one sensor and the acoustic sensor, the pre-processor performing a basic screening algorithm on original signals from the at least one sensor and the acoustic sensor to detect an event of interest as a screened signal, the basic screening algorithm eliminating a portion of the original signals from the at least one sensor and the acoustic sensor that fail to meet predetermined criteria for detecting the event of interest, the screened signal being the original signals with the portion removed therefrom;

a buffer/memory for storing the screened signal after being processed by the pre-processor; and

a main processor having a main processor algorithm operable to periodically process, based on a memory count or a period of time, the screened signals to verify that the screened signals include the event of interest, the main processor algorithm operating at greater accuracy for detecting the event of interest than the basic screening algorithm,

wherein the wearable performs continuous monitoring for the event of interest measured in whole days.

2. The system of claim 1, wherein the pre-processor operates at a first power consumption level and the main processor operates at a second power consumption level, greater than the first power consumption level.

3. The system of claim 1, wherein the at least one sensor, the acoustic sensor, the buffer/memory and the pre-processor are integrated into a single wearable device.

4. The system of claim 1, further comprising a main memory for storing a processed signal after being processed by the main processor.

5. The system of claim 1, wherein the acoustic signals are detected and recorded directly from a surface of the user between a waist and a base of a neck of the user.

6. The system of claim 2, wherein the at least one sensor comprises a motion sensor.

7. The system of claim 3, wherein the acoustic sensor is embedded in a protective layer that facilitates sound transfer through a housing of the wearable device.

8. The system of claim 7, wherein the housing includes one or more regions having a reduced thickness as compared to the remainder of the housing to permit flexing thereof when attached to the user.

9. The system of claim 1, wherein the signals from the at least one sensor and the acoustic sensor that fail to meet predetermined criteria for detecting the event of interest are those that have less than 50% to 80% resemblance to sensor data that is relevant for detecting the event of interest.

10. The system of claim 1, wherein the basic screening algorithm of the pre-processor and the main processor algorithm are provided by one of a plurality of user selected algorithms, the one of the plurality of user selected algorithms detecting a user-selected event of interest, depending on a selected one of the plurality of selected algorithms.