Claims

1. A reflection-type pulse rate detection device against motion interference ~~is characterized~~comprising:

~~, which includes~~a reflection-type pulse detection module ~~(1),~~ ;

a circuit driving module ~~(2),~~ ;

a signal conditioning module ~~(3),~~ ;

an ultra-low power wireless transceiver module ~~(4)~~, a microprocessor control module ~~(5),~~ ;

a display module ~~(6)~~ and

a remote terminal ~~(7);~~ ,

wherein the reflection type pulse rate detection module ~~(1) consists of~~ comprises a first LED light tube ~~(101)~~, a second LED light tube ~~(103)~~ and a photoelectric receiving tube ~~(102);~~ ,

and wherein the circuit driving module ~~(2)~~, the signal conditioning module ~~(3)~~, the ultra-low power wireless transceiver module ~~(4)~~ and the display module ~~(6)~~ are all connected to the microprocessor control module ~~(5)~~; and the ultra-low power wireless transceiver module is connected to the remote terminal ~~(7)~~ over ~~the~~a wireless link.

2. The reflection-type pulse rate detection device against motion interference ~~as described in~~ of claim 1, wherein~~,~~ the signal conditioning module ~~(3) consists of~~ comprises a detection circuit ~~(301)~~, a filter circuit ~~(302)~~ and a subtraction circuit ~~(303)~~,

wherein the detection circuit ~~(301)~~, the filter circuit ~~(302)~~ and the subtraction circuit ~~(303)~~ are connected to the microprocessor control module ~~(5) in turn~~.

3. The reflection-type pulse rate detection device against motion interference ~~as described in~~of claim 1, wherein~~,~~ the signal conditioning module ~~(3)~~ uses a dual-path detection circuit,

wherein one path of ~~which is a~~the detecting circuit ~~for~~ detects a pulse rate signal with the superimposition of motion noise, while the other path of the ~~is a~~ detecting circuit ~~for the~~detects motion noise~~; processed with the appropriate algorithm, the ability of motion interference reduction is improved; the front-end analog circuitcan acquire the pulse wave signal with a higher SNR~~.

4. The reflection-type pulse rate detection device against motion interference ~~as described in~~of claim 1, wherein ~~, the combination manner of~~ the first LED luminous tube ~~(101)~~ and the second LED luminous tube ~~(103) is emitting~~emit monochromatic or double color light with different wavelengths~~; a typical application is the first LED luminous tube (101) and the second LED luminous tube (103) are both Red/Green double color LED~~.

5. The reflection-type pulse rate detection device against motion interference ~~as described in~~of claim ~~1~~4, wherein ~~,~~the ~~first LED luminous tube (101) and the second LED luminous tube (103), which emit two types of lights with~~ different wavelengths comprise~~,~~ a first wavelength and a second wavelength, ~~, are controlled by the circuit driving module (2) to adjust the light intensity;~~ wherein the first wavelength is used for detecting pulse wave analog signal, and the second wavelength is mainly used for following the motion interference signal~~; the pulse wave analog~~

~~signal is preprocessedby the detection circuit(301), the filter circuit(302) and the subtraction circuit(303), and enters into the microprocessor control module (5); the common mode noise is suppressed; the pulse rate signal can be displayed locally on the display module (6) ,or can also be transferred to the remote terminal (7) for display through the ultra-low power wireless transceiver module(4)~~.

6. The reflection-type pulse rate detection device against motion interference of claim 5, wherein the intensity of the light emitted from the first LED luminous tube and the second LED luminous tube is controlled by the circuit driving module.

7. The reflection-type pulse rate detection device against motion interference of claim 4, wherein the first LED luminous tube and the second LED luminous tube are both Red/Green double color LED.

8. The reflection-type pulse rate detection device against motion interference of claim 5, wherein the detection circuit, the filter circuit and the subtraction circuit preprocess a pulse wave analog signal, which is then received by the microprocessor control module.

9. The reflection-type pulse rate detection device against motion interference of claim 8, wherein the processed pulse wave signal is capable of being displayed on a local display module or a remote terminal for display through the ultra-low power wireless transceiver module.