

Claims

1. A wearable physiological device comprising:
- 5 (a) a first housing assembly comprising:
- a first housing body;
- a first circuit assembly removably coupled to the first housing body;
- a user interface assembly communicatively connected to the first circuit assembly; and
- 10 (b) a second housing assembly removably coupled to the first housing assembly, the second housing assembly comprising:
- a second housing body;
- a second circuit assembly removably coupled to the second housing body, the second circuit assembly comprising a set of
- 15 physiological sensors;
- a removable battery disposed on the second circuit assembly;
- and
- a flexible connector communicatively connecting the second circuit assembly to the first circuit assembly,
- 20 wherein the set of physiological sensors are configured for measuring physiological signals from a user wearing the wearable physiological device, the physiological signals communicable to the user interface assembly.
2. The wearable physiological device according to claim 1, wherein the set of
- 25 physiological sensors comprises one or more photodiode sensors for measuring photoplethysmogram (PPG) signals from the user.
3. The wearable physiological device according to claim 1 or 2, wherein the set of physiological sensors comprises one or more temperature sensors for measuring body
- 30 temperature of the user.
4. The wearable physiological device according to any one of claims 1 to 3, wherein the user interface assembly comprises a display unit.

5. The wearable physiological device according to claim 4, wherein the display unit is configured for touch gesture operations by the user.
- 5 6. The wearable physiological device according to any one of claims 1 to 5, wherein the user interface assembly comprises a set of illumination elements for communicating visual signals to the user.
7. The wearable physiological device according to any one of claims 1 to 6,
10 wherein the second housing assembly further comprises a set of electrical contacts disposed on the second housing body, the set of electrical contacts connectable to an electrical supply for charging the battery.
8. The wearable physiological device according to any one of claims 1 to 7,
15 wherein the second housing assembly further comprises a sensor protective cover for the set of physiological sensors.
9. The wearable physiological device according to any one of claims 1 to 8, further comprising a set of fasteners for removably coupling the first and second housing
20 bodies.
10. The wearable physiological device according to any one of claims 1 to 9, further comprising an intermediate support disposed between the first and second housing bodies, the intermediate support surrounding a periphery of the first and second
25 housing bodies, thereby inhibiting liquid ingress into the first and second housing assemblies.
11. The wearable physiological device according to any one of claims 1 to 10, further comprising a data communication module communicatively connected to the
30 first circuit assembly.

12. The wearable physiological device according to claim 11, wherein the wearable physiological device is communicable with an electronic device via the data communication module.

5 13. The wearable physiological device according to any one of claims 1 to 12, further comprising a set of straps, wherein the first housing assembly further comprises a set of lugs for removably attaching the straps thereto.

14. The wearable physiological device according to claim 13, wherein the first
10 housing assembly further comprises a first engagement element disposed at the lugs and each strap comprises a second engagement element matingly engageable with the respective first engagement element.

15. The wearable physiological device according to claim 14, wherein the first and
15 second engagement elements are uniquely matched and aligned to each other.

16. The wearable physiological device according to any one of claims 13 to 15, wherein each strap comprises a plurality of holes of decreasing dimensions from a proximal end to a distal end of the strap.

20

17. The wearable physiological device according to claim 16, wherein for each strap, the holes are randomly spaced apart.

18. A physiological apparatus comprising:
25 (a) a wearable physiological device comprising:
(i) a first housing assembly comprising:
a first housing body;
a first circuit assembly removably coupled to the first
housing body; and
30 a user interface assembly communicatively connected to
the first circuit assembly;
(ii) a second housing assembly removably coupled to the first
housing assembly, the second housing assembly comprising:

- a second housing body;
a second circuit assembly removably coupled to the second housing body, the second circuit assembly comprising a set of physiological sensors for measuring physiological signals;
5 a removable battery disposed on the second circuit assembly; and
a set of electrical contacts disposed on the second housing body;
(b) a docking station for docking the wearable physiological device
10 thereto in one orientation, the docking station comprising:
(i) a docking assembly; and
(ii) a set of electrical connectors disposed on the docking assembly, the electrical connectors aligned to the electrical contacts of the wearable physiological device upon said docking,
15 wherein the electrical connectors are connectable to the electrical contacts upon said docking for charging the battery.

19. The physiological apparatus according to claim 18, wherein the second housing body comprises a boss portion and the docking assembly comprises a receptacle
20 portion substantially congruent to the boss portion.

20. The physiological apparatus according to claim 19, wherein upon said docking, the receptacle portion receives the boss portion and the electrical connectors are automatically aligned to the electrical contacts of the wearable physiological device.
25

21. The physiological apparatus according to claim 20, wherein the docking station further comprises a set of magnets for attracting the boss portion into the receptacle portion and for automatically aligning the electrical connectors to the electrical contacts.

30 22. The physiological apparatus according to any one of claims 18 to 21, wherein the docking station further comprises a communication port for receiving a communication cable.

23. The physiological apparatus according to any one of claims 18 to 22, wherein the wearable physiological device further comprises a set of lugs and a set of straps removably attached thereto.
- 5 24. The physiological apparatus according to claim 23, wherein the wearable physiological device further comprises a first engagement element disposed at the lugs and each strap comprises a second engagement element matingly engageable with the respective first engagement element.
- 10 25. The physiological apparatus according to claim 24, wherein the first and second engagement elements are uniquely matched and aligned to each other.
26. The physiological apparatus according to any one of claims 23 to 25, wherein each strap comprises a plurality of holes of decreasing dimensions from a proximal
15 end to a distal end of the strap.
27. The physiological apparatus according to claim 26, wherein for each strap, the holes are randomly spaced apart.
- 20 28. The physiological apparatus according to any one of claims 18 to 27, wherein the docking station further comprises a set of stands for elevating the docking assembly.