retention groove and an electrical contactor coupled to the body, where the contactor comprises a compliant element that is configured to touch the contact surface of the reusable element when the retention feature of the detachable element is engaged with the retention groove of the reusable component and to slide along the contact surface as the detachable element is brought together with the reusable component.

[0006] In an aspect, the present disclosure provides for, and includes, a detachable element for detecting tissue damage through measurement of sub-epidermal moisture, including: a body comprising a hole and a retention pocket, where the retention pocket comprises a reference surface; and a printed circuit board assembly (PCBA) comprising a printed circuit board (PCB) having an outer edge and a contactor coupled to the PCB, where a portion of the contactor extends beyond the outer edge of the PCB, where the portion of the contactor that extends beyond the outer edge of the PCB is in contact with the reference surface. In an aspect, an external surface of a PCB is flush with a surface of a frame without a protruding lip or the use of adhesive.

[0007] Disclosed herein is a detachable element comprising: a body comprising upper and lower sections joined by a flexible arm, where the upper section comprises an opening and the lower section is attached on its underside to a compressible spring; and a printed film having tabbed and non-tabbed areas, where the tabbed area comprises a sensor comprising two electrodes on one first face, and where the tabbed area is inserted between the upper and lower sections so that the sensor is aligned with the opening.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Aspects of the disclosure are herein described, by way of example only, with reference to the accompanying drawings. With specific reference now to the drawings in detail, it is stressed that the particulars shown are by way of example and are for purposes of illustrative discussion of aspects of the disclosure. In this regard, the description and the drawings, considered alone and together, make apparent to those skilled in the art how aspects of the disclosure may be practiced.

[0009] Fig. 1A depicts a medical scanner, in accordance with the present disclosure.

[0010] Fig. 1B depicts a connector comprising a reusable component, which is part of the medical scanner of Fig. 1A in the region "A," and a detachable element, in accordance with the present disclosure.

CLAIMS:

1. A detachable element for detecting tissue damage through measurement of sub-epidermal moisture, comprising:

a body comprising a hole and a retention pocket, wherein the retention pocket comprises a reference surface; and

a printed circuit board assembly (PCBA) comprising a printed circuit board (PCB) having an outer edge and a contactor coupled to the PCB, wherein a portion of the contactor extends beyond the outer edge of the PCB,

wherein the portion of the contactor that extends beyond the outer edge of the PCB is in contact with the reference surface.

2. The detachable element of claim 1, wherein:

the body comprises a top surface;

the PCB comprises a thickness; and

the reference surface is parallel to the top surface and offset from the top surface by a distance from the reference surface to the top surface, and the distance is equal to the thickness of the PCB.

3. The detachable element of claim 1, wherein the PCB is a sensor.

4. The detachable element of claim 3, wherein the PCB is selected from the group consisting of a bioimpedance sensor, a photodetector, a temperature sensor, a pH sensor, a perspiration sensor, an ultrasonic sensor, a bone growth stimulator sensor, and combinations thereof.

5. The detachable element of claim 1, wherein the PCB is inserted into the retention pocket and held in place by a retainer comprising a plurality of tabs.

6. The detachable element of claim 5, wherein the retainer is a mechanical positioning element.

7. The detachable element of claim 5, wherein the retainer is a conductive circuit element.

8. The detachable element of claim 5, wherein the retainer comprises one or more conductive elements and one or more non-conductive elements.

9. The detachable element of claim 5, wherein the retainer comprises a deformable retention feature configured to cover a portion of one or more tabs of the retainer.

10. The detachable element of claim 1, wherein the PCB is a biocapacitance sensor.

11. The detachable element of claim 10, wherein the biocapacitance sensor comprises two or more electrodes.

12. The detachable element of claim 10, wherein the biocapacitance sensor comprises two electrodes.

13. The detachable element of claim 12, wherein the two electrodes consist of one central electrode and one toroidal electrode, wherein the central electrode and toroidal electrode have a concentric orientation.

14. The detachable element of claim 13, where the two electrodes are separated by a gap of about 2.921 mm (0.0115 inches).

15. The detachable element of claim 13, wherein the central electrode has a diameter of about 4.318 mm (0.17 inches).

16. The detachable element of claim 13, wherein the toroidal electrode has an inner diameter of about 10.16 mm (0.4 inches) and an outer diameter of about 12.7 mm (0.5 inches).

17. The detachable element of claim 12, further comprising a ground plane, wherein the distance between the two electrodes and the ground plane is about 0.4064 mm (0.016 inches).

18. The detachable element of claim 17, wherein the ground plane has a diameter of about 12.7 mm (0.5 inches).

19. The detachable element of claim 10, further comprising an insulating cover layer disposed above the biocapacitance sensor.