# DEVICE WITH DISPOSABLE ELEMENT

## CROSS REFERENCE TO RELATED APPLICATIONS

**[0001]** This application claims the benefit of U.S. Provisional Application No. 62/744,513, filed October 11, 2018, and U.S. Provisional Application No. 62/804,095, filed February 11, 2019, the contents of each of which are herein incorporated by reference in their entireties and for all purposes.

## FIELD

**[0002]** The present disclosure provides apparatus and methods for a device for detecting tissue damage through measurement of Sub-Epidermal Moisture (SEM). The present disclosure further provides apparatus and methods for a device for detecting tissue damage through measurement of SEM, where the device includes a printed circuit board (PCB) assembled into a molded frame.

## BACKGROUND

**[0003]** A printed circuit board (PCB) is employed in medical devices as a flat base that physically supports and electronically connects electronic components and conductors. PCBs may be single-sided, double-sided, and multilayered. PCBs are currently retained in device frames by either adhesive or provision of a lip in the frame that captures the edge of the PCB.

## SUMMARY

**[0004]** Disclosed herein is a detachable element for use with a reusable component having a retention groove and an alignment guide and a planar contact surface parallel to the retention groove, the detachable element comprising: a body comprising a retention feature configured to engage the retention groove, and an electrical contactor coupled to the body, where the contactor comprises a cantilever element that is configured to touch the planar contact surface when the retention feature is engaged with the retention groove, where the cantilever element is configured to slide along the contact surface as the detachable element is brought together with the reusable component.

**[0005]** Disclosed herein is a connector comprising: a reusable component comprising a retention groove and an electrical contact surface that is parallel to the retention groove; and a detachable element comprising a body with a retention feature configured to engage the

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 a first aspect, the present disclosure provides for, and includes, a detachable element comprising: 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]** In a second aspect, the present disclosure provides for, and includes, 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.