Claims

[Claim 1]

A system, comprising:

a first assembly including a first electrode and a first adhesive portion, the first assembly configured to be coupled to a surface of a patient via the first adhesive portion;

a second assembly including a second electrode and a second adhesive portion, the second assembly configured to be coupled to the surface of the patient via the second adhesive portion; and

a connecting member having a first end, a second end, and a third adhesive portion, the first end coupled to the first assembly and the second end coupled to the second assembly, the connecting member configured to transition between a first configuration and a second configuration, a distance between the first end and the second end of the connecting member in the first configuration being a first distance, a distance between the first end and the second end of the connecting member in the second configuration being a second distance different from the first distance, the connecting member configured to be coupled to the surface of the patient via the third adhesive portion in both the first configuration and the second configuration,

wherein the connecting member has a composite assembly portion, the composite assembly portion having an insulative portion and a plurality of conductive traces disposed within the insulative portion and electrically coupling the first and second assemblies,

wherein the plurality of conductive traces has a first conductive trace and a second conductive trace,

wherein the first conductive trace and the second conductive trace are disposed at varying locations relative to a skin-facing surface of the composite assembly portion such that the first conductive trace is disposed further from the skin-facing surface than the second conductive trace.

[Claim 2]

The system of claim 1, wherein the first conductive trace is vertically arranged relative to the second conductive trace such that the composite assembly portion can be narrower.

[Claim 3]

The system of claim 1, wherein the plurality of conductive traces has a third conductive trace electrically coupling the first and second assemblies, the third conductive trace being disposed close to the skin-facing surface and side-by-side with the second conductive trace.

[Claim 4]

The system of claim 3, wherein the first conductive trace is vertically arranged relative to the second and third conductive traces such that the portion can be narrower.

[Claim 5]

The system of claim 1, wherein the plurality of conductive traces has a third conductive trace and a fourth conductive trace electrically coupling the first and second assemblies, the fourth conductive trace being disposed close to the skin-facing surface and side by side with the second conductive trace while the third conductive trace being disposed further from the skin-facing surface and side by side with the first conductive trace.

[Claim 6]

The system of claim 5, wherein the first and third conductive traces are vertically arranged relative to the second and fourth conductive traces such that the portion can be narrower.

[Claim 7]

The system in any one of claims 1-6, wherein the connecting member is configured to transition from the first configuration to the second configuration based at

least in part on movement of the first assembly relative to the second assembly due to deformation of the surface of the patient.

[Claim 8]

The system in any one of claims 1-6, wherein the connecting member is biased toward the first configuration.

[Claim 9]

The system in any one of claims 1-6, wherein the connecting member is configured to be coupled to the surface of the patient via the third adhesive portion during the transition from the first configuration to the second configuration.

[Claim 10]

The system in any one of claims 1-6, wherein the connecting member includes the skin-facing surface, the third adhesive portion configured to cover a portion of the skin-facing surface.

[Claim 11]

The system in any one of claims 1-6, wherein the connecting member further includes a fourth adhesive portion, the third adhesive portion disposed on the skin-facing surface of the connecting member at a first location, the fourth adhesive portion disposed on the skin-facing surface of the connecting member at a second location.

[Claim 12]

The system in any one of claims 1-6, wherein the connecting member includes a first segment, a second segment, and a third segment, the first segment coupled to the second segment via a first flexible hinge, the second segment coupled to the third segment via a second flexible hinge.

[Claim 13]

The system in any one of claims 1-6, wherein the connecting member has a first sinusoidal shape having a first frequency in the first configuration and a second sinusoidal shape having a second frequency in the second configuration, the second frequency different from the first frequency.