CLAIMS

WHAT IS CLAIMED IS:

1. A mattress system comprising:

a foam layer positioned proximate a mattress top and having a head end, a foot end, and opposite lateral ends; and

a sensor strip including:

a carrier strip having a first strip surface and a second strip surface opposite to the first strip surface, the first strip surface configured to be releasably attached to the foam layer, and

a plurality of sensors attached to the carrier strip and spaced apart from each other in a longitudinal direction of the carrier strip, the plurality of sensors disposed at the first strip surface of the carrier strip, the carrier strip configured to be releasably attached to the foam layer and extend between the opposite lateral ends of the foam layer.

2. The mattress system of claim 1, further comprising:

a mattress cover disposed on the foam layer and covering the foam layer and the sensor strip, wherein the mattress cover is free of the carrier strip that is attached to the foam layer.

3. The mattress system of claim 1, wherein the plurality of sensors are stitched to the carrier strip.

4. The mattress system of claim 1, wherein the plurality of sensors are attached to the carrier strip by adhesive.

5. The mattress system of claim 1, wherein:

the carrier strip includes a first fastener configured to be releasably attached to the foam layer,

the foam layer includes a second fastener configured to releasably attach the first fastener of the carrier strip, and

the first and second fasteners include hook-and-loop fasteners.

6. A mattress system comprising:

a foam layer positioned proximate a mattress top and having a head end, a foot end, and opposite lateral ends;

a first air chamber positioned under a first portion of the foam layer;

a second air chamber positioned under a second portion of the foam layer, wherein the first portion and the second portion are arranged side-by-side between the opposite lateral ends of the foam layer;

a sensor strip including:

a carrier strip having a first strip portion and a second strip portion, the carrier strip has a first strip surface and a second strip surface opposite to the first strip surface, the first strip surface configured to be releasably attached to the first portion and the second portion of the foam layer,

a plurality of first sensors attached to the first strip portion of the carrier strip and spaced apart from each other in a longitudinal direction of the carrier strip,

a plurality of second sensors attached to the second strip portion of the carrier strip and spaced apart from each other in the longitudinal direction of the carrier strip,

wherein the plurality of first sensors and the plurality of second sensors are disposed at the first strip surface of the carrier strip,

wherein the carrier strip is configured to be releasably attached to the foam layer and extend between the opposite lateral ends of the foam layer, the first strip portion and the second strip portion configured to be disposed at the first portion and the second portion of the foam layer, respectively.

7. The mattress system of claim 6, wherein the plurality of first sensors are spaced five inches apart from each other on the first strip portion of the carrier strip and the plurality of second sensors are spaced five inches apart from each other on the second strip portion of the carrier strip.

8. The mattress system of claim 1, wherein the plurality of sensors are spaced five inches apart from each other in the longitudinal direction of the carrier strip.

9. The mattress system of claim 1, wherein the sensor strip includes micro-hooks configured to releasably attach directly to a surface of the foam layer.

10. A sensor assembly for a mattress system, the sensor assembly configured to be releasably attached to a top layer of the mattress system positioned proximate a mattress top and having a head end, a foot end, and opposite lateral ends, the sensor assembly comprising:

a sensor strip including:

a carrier strip having a first strip surface and a second strip surface opposite to the first strip surface, the first strip surface configured to be releasably attached to the top layer of the mattress system, and

a plurality of sensors attached to the carrier strip and spaced apart from each other in a longitudinal direction of the carrier strip, the plurality of sensors disposed at the first strip surface of the carrier strip, the carrier strip configured to be releasably attached to the top layer of the mattress system and extend between the opposite lateral ends of the top layer of the mattress system.

11. The mattress system of claim 1, wherein the carrier strip is configured to extend between a midpoint of the foam layer and a location that is a predetermined distance away from an edge of a first lateral end of the opposite lateral ends of the foam layer, wherein the carrier strip does not extend over the edge of the first lateral end of the opposite lateral ends of the foam layer.

12. The mattress system of claim 1, wherein the carrier strip does not extend over either of opposite sides of the foam layer, and

wherein the plurality of sensors include wires, the wires being collectively routed over an edge of a first lateral end of the opposite lateral ends of the foam layer and down one of the opposite sides of the foam layer.

13. A mattress system comprising:

a foam layer positioned proximate a mattress top and having a head end, a foot end, and opposite lateral ends; and

a sensor strip including:

a carrier strip, and

a plurality of sensors attached to the carrier strip and spaced apart from each other in a longitudinal direction of the carrier strip, the carrier strip configured to be releasably attached to the foam layer and extend between the opposite lateral ends of

the foam layer, the plurality of sensors including wires, the wires being collectively routed through at least one hole defined through the foam layer.

14. The mattress system of claim 1, wherein the sensor strip further includes a plurality of additional materials, wherein each of the plurality of additional materials are ultrasonically welded to the carrier strip between each of the plurality of sensors in the longitudinal direction of the carrier strip.

15. The mattress system of claim 14, wherein at least one of the plurality of additional materials forms at least one of (i) a circle around at least one of the plurality of sensors and (ii) a triangle around at least one of the plurality of sensors.

16. The mattress system of claim 14, wherein at least one of the plurality of additional materials forms a square around at least one of the plurality of sensors.

17. The mattress system of claim 14, wherein at least one of the plurality of additional materials extends a length between two consecutive sensors of the plurality of sensors in the longitudinal direction of the carrier strip.

18. A method for providing a mattress, comprising:

arranging a set of mattress layers in place, the layers including a foam layer, the foam layer being positioned proximate a mattress top and having a head end, a foot end, and opposite lateral ends;

attaching a first sensor strip to the foam layer of the mattress layers between the opposite lateral ends of the foam layer, the first sensor strip including a carrier strip and a plurality of sensors, the carrier strip having a first strip surface and a second strip surface opposite to the first strip surface, the first strip surface configured to be releasably attached to the foam layer, the plurality of sensors attached to the carrier strip and spaced apart from each other in a longitudinal direction of the carrier strip, the plurality of sensors disposed at the first strip surface of the carrier strip;

placing a mattress cover on the foam layer to cover the foam layer and the first sensor strip, wherein the mattress cover is free of the first sensor strip that is attached to the foam layer;

removing the mattress cover from the foam layer;

detaching the first sensor strip from the foam layer;

attaching a second sensor strip to the foam layer in place of the first sensor strip; and

placing the mattress cover on the foam layer to cover the foam layer and the second sensor strip, wherein the mattress cover is free of the second sensor strip that is attached to the foam layer.