

CLAIMS.

5 1. A textile motherboard, characterized by the implementation of at least one substrate layer which consists of textile material; a conductive routing; at least one terminal attached to the conductive routing; at least one central processing unit (CPU) or at least one peripheral element or a combination thereof; wherein the conductive routing consists of an interwoven route within the textile that conforms the substrate layer; additionally both the
10 central processing unit (CPU) and the peripheral element exhibit appropriate characteristics to connect to the terminal and to enable the guiding of signals through the conductive routing.

15 2. A textile motherboard according to claim 1, characterized by the implementation of a central processing unit (CPU) in the form of a microcontroller or a microprocessor or a comparable element.

20 3. A textile motherboard according to claim 1, characterized by the implementation of a peripheral in the form of an input element such as a photonic transducer or an electronic transducer or a combination thereof.

25 4. A textile motherboard according to claims 1 and 3, characterized by the implementation of photonic transducers or electronic transducers in the form of capacitive sensors or temperature sensors or accelerometers or respiratory frequency sensors or humidity sensors or magnetometers or chest expansion sensors or gyroscopes or pulse sensors or muscular activity sensors or similar devices.

30 5. A textile motherboard according to claim 1, characterized by the implementation of a peripheral in the form of an output peripheral, such as a screen or a vibration device or an audible device or an illuminating device or a device capable of emitting information or a memory module or a serial communications module or a radio frequency communications

module (using Zigbee technology, Bluetooth, etc.) or a "Wi-Fi" communications module or similar devices.

5 6. A textile motherboard according to claim 1, characterized by the implementation of a terminal with the appropriate characteristics to enable the interchange of central processing units (CPU) or peripheral elements, in order to monitor different variables or to inform or to signalize or to control operations of alike elements.

10 7. A textile motherboard according to claim 1, characterized by the implementation of a conductive routing in the form of an electric textile conductor.

15 8. A textile motherboard according to claim 1, characterized by the implementation of a conductive routing in the form of a textile arrangement that incorporates a fiber optic.

20 9. A textile motherboard according to claim 1, characterized by the implementation of a conductive routing in the form of a textile arrangement that incorporates a waveguide.

25 10. A textile motherboard according to claim 1, characterized by the implementation of a terminal in the form of a snap or a hook or an eye or a hook and loop (Velcro) system or a similar element attached to the conductive routing.

30 11. A textile motherboard, characterized by the implementation of at least one substrate layer which consists of textile material; a conductive routing; at least one terminal attached to the conductive routing; at least one central processing unit (CPU) or at least one peripheral element or a combination thereof; wherein the conductive routing consists of a printing or a stamping of conductive material within the textile that conforms the substrate layer; additionally both the central processing unit (CPU) and the peripheral

element exhibit appropriate characteristics to connect to the terminal and to enable the guiding of signals through the conductive routing.

5 12.A textile motherboard according to claim 11, characterized by the implementation of a central processing unit (CPU) in the form of a microcontroller or a microprocessor or a comparable element.

10 13.A textile motherboard according to claim 11, characterized by the implementation of a peripheral in the form of an input element such as a photonic transducer or an electronic transducer or a combination thereof.

15 14.A textile motherboard according to claims 11 and 13, characterized by the implementation of photonic transducers or electronic transducers in the form of capacitive sensors or temperature sensors or accelerometers or respiratory frequency sensors or humidity sensors or magnetometers or chest expansion sensors or gyroscopes or pulse sensors or muscular activity sensors or similar devices.

20 15.A textile motherboard according to claim 11, characterized by the implementation of a peripheral in the form of an output peripheral, such as a screen or a vibration device or an audible device or an illuminating device or a device capable of emitting information or a memory module or a serial communications module or a radio frequency communications module (using Zigbee technology, Bluetooth, etc.) or a "Wi-Fi"

25 communications module or similar devices.

30 16.A textile motherboard according to claim 11, characterized by the implementation of a terminal with the appropriate characteristics to enable the interchange of central processing units (CPU) or peripheral elements, in order to monitor different variables or to inform or to signalize or to control operations of alike elements.

17.A textile motherboard according to claim 11, characterized by the implementation of a terminal in the form of a snap or a hook or an eye or a hook and loop (Velcro) system or a similar element attached to the conductive routing.

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18.A textile motherboard, characterized by the implementation of at least one substrate layer which consists of textile material; a conductive routing; at least one terminal attached to the conductive routing; at least one central processing unit (CPU) or at least one peripheral element or a combination thereof; wherein the conductive routing consists of an interwoven route within the textile that conforms the substrate layer; additionally both the central processing unit (CPU) and the peripheral element exhibit appropriate characteristics to connect to the terminal and to enable the guiding of signals through the conductive routing; wherein multiple textile layers define independent conductive routings, separated by isolating layers, in order to avoid interference between such routings; and wherein the interconnection between the different conductive routings may be implemented by means of textile Vertical Interconnect Accesses, known as "VIAs", or by means of textiles that define the interconnections.

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19.A textile motherboard according to claim 18, characterized by the implementation of a central processing unit (CPU) in the form of a microcontroller or a microprocessor or a comparable element.

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20.A textile motherboard according to claim 18, characterized by the implementation of a peripheral in the form of an input element such as a photonic transducer or an electronic transducer or a combination thereof.

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21.A textile motherboard according to claims 18 and 20, characterized by the implementation of photonic transducers or electronic transducers in the form of capacitive sensors or temperature sensors or accelerometers or respiratory frequency sensors or humidity sensors or magnetometers or

chest expansion sensors or gyroscopes or pulse sensors or muscular activity sensors or similar devices.

5 22.A textile motherboard according to claim 18, characterized by the implementation of a peripheral in the form of an output peripheral, such as a screen or a vibration device or an audible device or an illuminating device or a device capable of emitting information or a memory module or a serial communications module or a radio frequency communications module (using Zigbee technology, Bluetooth, etc.) or a "Wi-Fi" 10 communications module or similar devices.

15 23.A textile motherboard according to claim 18, characterized by the implementation of a terminal with the appropriate characteristics to enable the interchange of central processing units (CPU) or peripheral elements, in order to monitor different variables or to inform or to signalize or to control operations of alike elements.

20 24.A textile motherboard according to claim 18, characterized by the implementation of a conductive routing in the form of an electric textile conductor.

25 25.A textile motherboard according to claim 18, characterized by the implementation of a conductive routing in the form of a textile arrangement that incorporates a fiber optic.

26.A textile motherboard according to claim 18, characterized by the implementation of a conductive routing in the form of a textile arrangement that incorporates a waveguide.

30 27.A textile motherboard according to claim 18, characterized by the implementation of a terminal in the form of a snap or a hook or an eye or a hook and loop (Velcro) system or a similar element attached to the conductive routing.

28.A textile motherboard according to claim 18, characterized by the implementation of an isolating layer that simultaneously functions as a substrate layer.

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29.A textile motherboard according to claim 18, characterized by the implementation of multiple layers, which define the conductive routings, placed adjacent one to the other in a single plane, separated by isolating layers.

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30.A textile motherboard according to claim 18, characterized by the implementation of multiple layers, which define the conductive routings, placed superposed in an alternating manner with isolating layers.

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31.A textile motherboard according to claim 18, characterized by the implementation of textile Vertical Interconnect Accesses, known as "VIAs", in the form of a tag VIA or a thru VIA or a sequential VIA or a photo-defined VIA or a controlled depth VIA or a buried VIA or similar VIAs implementations.

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32.A textile motherboard, characterized by the implementation of at least one substrate layer which consists of textile material; a conductive routing; at least one terminal attached to the conductive routing; at least one central processing unit (CPU) or at least one peripheral element or a combination thereof; wherein the conductive routing consists of a printing or a stamping of conductive material within the textile that conforms the substrate layer; additionally both the central processing unit (CPU) and the peripheral element exhibit appropriate characteristics to connect to the terminal and to enable the guiding of signals through the conductive routing; wherein multiple printing or stamping layers define independent conductive routings, separated by isolating layers, in order to avoid interference between such routings; and wherein the interconnection between the different conductive routings may be implemented by means of textile

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Vertical Interconnect Accesses, known as "VIAs", or by means of printings or stampings that define the interconnections.

5 33.A textile motherboard according to claim 32, characterized by the implementation of a central processing unit (CPU) in the form of a microcontroller or a microprocessor or a comparable element.

10 34.A textile motherboard according to claim 32, characterized by the implementation of a peripheral in the form of an input element such as a photonic transducer or an electronic transducer or a combination thereof.

15 35.A textile motherboard according to claims 32 and 34, characterized by the implementation of photonic transducers or electronic transducers in the form of capacitive sensors or temperature sensors or accelerometers or respiratory frequency sensors or humidity sensors or magnetometers or chest expansion sensors or gyroscopes or pulse sensors or muscular activity sensors or similar devices.

20 36.A textile motherboard according to claim 32, characterized by the implementation of a peripheral in the form of an output peripheral, such as a screen or a vibration device or an audible device or an illuminating device or a device capable of emitting information or a memory module or a serial communications module or a radio frequency communications module (using Zigbee technology, Bluetooth, etc.) or a "Wi-Fi"
25 communications module or similar devices.

30 37.A textile motherboard according to claim 32, characterized by the implementation of a terminal with the appropriate characteristics to enable the interchange of central processing units (CPU) or peripheral elements, in order to monitor different variables or to inform or to signalize or to control operations of alike elements.

38.A textile motherboard according to claim 32, characterized by the implementation of a terminal in the form of a snap or a hook or an eye or a hook and loop (Velcro) system or a similar element attached to the conductive routing.

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39.A textile motherboard according to claim 32, characterized by the implementation of an isolating layer that simultaneously functions as a substrate layer.

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40.A textile motherboard according to claim 32, characterized by the implementation of multiple stamping or printing layers, which define the conductive routings, placed adjacent one to the other in a single plane, separated by isolating layers.

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41.A textile motherboard according to claim 32, characterized by the implementation of multiple stamping or printing layers, which define the conductive routings, placed superposed in an alternating manner with isolating layers.

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42.A textile motherboard according to claim 32, characterized by the implementation of textile Vertical Interconnect Accesses, known as "VIAs", in the form of a tag VIA or a thru VIA or a sequential VIA or a photo-defined VIA or a controlled depth VIA or a buried VIA or similar VIAs implementations.

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CLAIMS.

1. A textile motherboard, characterized by the implementation of:

5 at least one substrate that consists of a textile material and serves as support for a textile circuit or part of it; wherein the textile substrate additionally includes at least one portion of a textile conductive layer and a portion of a textile isolating layer;

10 at least a conductive routing that defines trajectories of the textile circuit or part of it, in the at least one portion of textile conductive layer, and that serves as transmission platform for the textile circuit that conforms the textile motherboard;

15 at least one textile component incorporated into the substrate and attached to the conductive routing, which conforms a peripheral of the textile motherboard, or that conforms a peripheral or a part of a peripheral employable in another textile motherboard;

20 at least an interconnection terminal attached to the conductive routing, which consists of at least a means of textile union, which enables the connection and disconnection of at least one textile, electronic, or photonic peripheral, which exhibits at least one complementary means of textile union, which enables the interchange of peripherals usable in the textile motherboard;

wherein the at least one conductive routing is attached by means of textile vertical interconnect accesses (VIA) to another conductive routing placed in another portion of conductive layer in the at least one substrate and;

5 the textile motherboard is configured to monitor, inform, and control parameters of a user that wears a garment, which incorporates such textile motherboard.

2. Textile motherboard according to claim 1, wherein the textile motherboard is conformed of at least two substrates and at least one conductive routing in
10 each substrate, and the connection between conductive routings is achieved by means of textile vertical interconnect accesses (VIA)

3. Textile motherboard according to claims 1 or 2, wherein the textile vertical interconnect accesses (VIA) may be selected from a tag or a sequential or a
15 thru or a photo-defined or a controlled depth or a buried VIA, and alike structures, or combinations thereof.

4. Textile motherboard according to any of the claims 1 to 3, wherein the substrates or portions of conductive layers are separated by at least one
20 isolating layer.

5. Textile motherboard according to claim 4, wherein the isolating layer may be the same as the substrate layer.

6. Textile motherboard according to claim 1, wherein one of the at least one textile, electronic, or photonic peripheral includes a central processing unit (CPU)

5 7. Textile motherboard according to claim 6, wherein the central processing unit (CPU) consists of a microcontroller or a microprocessor or a comparable element.

10 8. Textile motherboard according to any of the claims 1 to 7, wherein the at least one conductive routing consists of a textile electric conductor or a textile arrangement that incorporates a fiber optic or a textile arrangement that incorporates a waveguide.

15 9. Textile motherboard according to claim 8, wherein the textile conductor consists of an interwoven route within the textile that conforms the substrate layer.

20 10. Textile motherboard according to claim 8, wherein the textile conductor consists of multiple layers, which define the conductive routings, and are placed adjacent in a single plane separated by isolating layers, or are placed superposed in an alternating manner with the isolating layers.

11. Textile motherboard according to any of the claims 1 to 10, wherein the interconnection terminal is configured to enable the interchange of central

processing units or of peripheral elements, in order to monitor different variables or to inform or to signalize or to control operations of alike elements.

12. Textile motherboard according to claim 11, wherein the interconnection terminal
5 consists of a snap or a hook or a hook and loop system or a similar element attached to the conductive routing.

13. A textile peripheral, characterized by the implementation of:

10 at least one substrate that consists of a textile material and serves as support for a textile circuit or part of it; wherein the textile substrate additionally includes at least one portion of a textile conductive layer and a portion of a textile isolating layer;

15 at least a conductive routing that defines trajectories of the textile circuit or part of it, in the at least one portion of textile conductive layer, and that serves as transmission platform for the textile circuit that conforms the textile peripheral;

20 at least one textile component incorporated into the substrate and attached to the conductive routing, which functions as a part of the peripheral employable in a textile motherboard;

at least an interconnection terminal attached to the conductive routing, which consists of at least a means of textile union, which enables the connection and

disconnection of the peripheral to and from a textile motherboard, which exhibits complementary means of textile union;

wherein the at least one conductive routing is attached by means of textile vertical interconnect accesses (VIA) to another conductive routing placed in another portion of conductive layer in the at least one substrate.

14. Textile peripheral according to claim 13 that is conformed of at least two substrates and at least one conductive routing in each substrate, and the connection between conductive routings is achieved by means of textile vertical interconnect accesses (VIA)

15. Textile peripheral according to any of the claims 13 and 14, wherein the substrates or portions of conductive layers are separated by at least one isolating layer.

16. Textile peripheral according to claim 13, wherein one of the at least one textile, electronic, or photonic peripheral includes a central processing unit (CPU)