

What is claimed is:

1. A device for prototyping a circuit without using jumper wires, the device comprising:

a body having a first layer and a second layer disposed below the first layer, the first layer having a component zone for placement of electronic components of the circuit to be prototyped, each of the first and second layers having a first and a second connection zones for placement of conductive pins to interconnect the electronic components placed in the component zone, the first and second connection zones of the second layer are aligned with the first and second connection zones of the first layer respectively;

the first layer having a plurality of first conductive members extending from the component zone to the first and second connection zones of the first layer wherein the first conductive members are electrically isolated from one another, wherein each of the first conductive members is a channel having two resiliently deformable locking portions to secure a conductive pin or the terminal of an electronic component;

the second layer having a plurality of second conductive members disposed in the first and second connection zones of the second layer, the second conductive members are arranged perpendicularly with respect to the first conductive members forming a rectangular matrix at each of the first and second connection zones of the first and second layers wherein points of the rectangular matrix define contact points for receiving conductive pins, each of the second conductive members in the first connection zone of the second layer is electrically connected to one of the second conductive members in the second connection zone of the second layer, wherein each of the second conductive members is a channel having two resiliently deformable locking portions to secure a conductive pin;

wherein a contact between one of the first conductive members and one of the second conductive members by a conductive pin at one of the contact points establishes an electrical connection between the one of the first conductive members and the one of the second conductive members.

2. The device of claim 1, wherein the body further comprises a third layer disposed above the first layer, a plurality of holes formed through the third layer and aligned with the first and second conductive members for receiving conductive pins and electronic components.

3. The device of claim 1, further comprising a plurality of holes formed through the first and second layers along the length of the first and second conductive members for receiving

conductive pins and electronic components wherein the holes in the first and second connection zones of the first and second layers are formed at the contact points.

~~4. The device of claim 1, each of the first conductive members is a channel having two resiliently deformable locking portions to secure a conductive pin or the terminal of an electronic component.~~

~~5. The device of claim 1, each of the second conductive members is a channel having two resiliently deformable locking portions to secure a conductive pin.~~

46. The device of claim 1, wherein the first conductive members are conductive strips.

57. The device of claim 1, wherein the second conductive members are conductive strips.

68. The device of claim 1, wherein the component zone is adapted to receive a daughter-board which allows electronic components to be mounted thereon.

79. The device of claim 1, wherein the component zone, the first connection zone, and the second connection zone of the first layer are separable from each other.

840. The device of claim 1, wherein the first and second connection zones of the second layer are separable from each other.

941. A method for prototyping a circuit using a device comprising:

a body having a first layer and a second layer disposed below the first layer, the first layer having a component zone for placement of electronic components of the circuit to be prototyped, each of the first and second layers having a first and a second connection zones for placement of conductive pins to interconnect the electronic components placed in the component zone, the first and second connection zones of the second layer are aligned with the first and second connection zones of the first layer respectively;

the first layer having a plurality of first conductive members extending from the component zone to the first and second connection zones of the first layer wherein the first conductive members are electrically isolated from one another, wherein each of the first

conductive members is a channel having two resiliently deformable locking portions to secure a conductive pin or the terminal of an electronic component;

the second layer having a plurality of second conductive members disposed in the first and second connection zones of the second layer, the second conductive members are arranged perpendicularly with respect to the first conductive members forming a rectangular matrix at each of the first and second connection zones of the first and second layers wherein points of the rectangular matrix define contact points for receiving conductive pins, each of the second conductive members in the first connection zone of the second layer is electrically connected to one of the second conductive members in the second connection zone of the second layer, wherein each of the second conductive members is a channel having two resiliently deformable locking portions to secure a conductive pin;

wherein a contact between one of the first conductive members and one of the second conductive members by a conductive pin at one of the contact points establishes an electrical connection between the one of the first conductive members and the one of the second conductive members; the method comprising:

providing a circuit diagram to be prototyped;

mounting electronic components of the circuit diagram in the component zone of the device;

forming a connection table having connection numbers for the electronic components of the circuit diagram wherein the connection numbers are associated to the contact points of the device; and

forming electrical connections in the first and second connection zones of the first and second layers based on the connection table to interconnect the electronic components in the component zone.

102. The method of claim 911, wherein the step of forming the connection table comprising:

assigning a connection number to each terminal of the electronic components of the circuit diagram wherein the terminals of two or more electronic components that meet at the same point in the circuit diagram are assigned a same connection number.

113. The method of claim 911, wherein the step of forming the electrical connections comprising:

inserting conductive pins at the contact points of the device which are associated to the connection numbers formed in the connection table.

124. The method of claim 911, wherein the step of forming the electrical connections comprising:

displaying an image of the contact points of the device on a user interface unit;

5 selecting the contact points to be inserted by conductive pins from the displayed image;

translating the selected contact points into X-Y coordinates; and

inserting conductive pins at the selected contact points by an automated means based on the X-Y coordinates.

10 135. The method of claim 124, wherein the automated means is a robotic arm.

146. A system for prototyping a circuit without using jumper wires, the system comprising:

a processing unit;

a memory readable by the processing unit;

15 an automated means in communication with the processing unit;

a device comprising:

a body having a first layer and a second layer disposed below the first layer, the first layer having a component zone for placement of electronic components of the circuit to be prototyped, each of the first and second layers having a first and a second connection zones for placement of conductive pins to interconnect the electronic components placed in the component zone, the first and second connection zones of the second layer are aligned with the first and second connection zones of the first layer respectively,

20 the first layer having a plurality of first conductive members extending from the component zone to the first and second connection zones of the first layer wherein the first conductive members are electrically isolated from one another, wherein each of the first conductive members is a channel having two resiliently deformable locking portions to secure a conductive pin or the terminal of an electronic component,

25 the second layer having a plurality of second conductive members disposed in the first and second connection zones of the second layer, the second conductive members are arranged perpendicularly with respect to the first conductive members forming a rectangular matrix at each of the first and second connection zones of the first and second layers wherein points of the rectangular matrix define contact points for receiving conductive pins, each of the second conductive members in the first connection

zone of the second layer is electrically connected to one of the second conductive members in the second connection zone of the second layer, wherein each of the second conductive members is a channel having two resiliently deformable locking portions to secure a conductive pin,

5 wherein a contact between one of the first conductive members and one of the second conductive members by a conductive pin at one of the contact points establishes an electrical connection between the one of the first conductive members and the one of the second conductive members; and

instructions stored by the memory for directing the processing unit to:

10 display an image of the contact points of the device on a user interface unit;

receive information of the contact points to be inserted by conductive pins from the user interface unit;

translate the selected contact points into X-Y coordinates; and

15 insert conductive pins at the selected contact points by the automated means based on the X-Y coordinates.

157. The system of claim 1416, wherein the automated means is a robotic arm.

20 168. The system of claim 1416, wherein the body further comprises a third layer disposed above the first layer, a plurality of holes formed through the third layer and aligned with the first and second conductive members for receiving conductive pins and electronic components.

25 179. The system of claim 1416, further comprising a plurality of holes formed through the first and second layers along the length of the first and second conductive members for receiving conductive pins and electronic components wherein the holes in the first and second connection zones of the first and second layers are formed at the contact points.