Claims

1. A buckle (100) having a control circuit characterized by the buckle (100) comprising

a male buckle (110);

a female buckle (120);

an actuating structure (130) comprising a first conductive member (131) and a second conductive member (132) disposed on the female buckle (120), and

an automatic ejection member (140) disposed in the female buckle (120) for ejecting the male buckle (110) out of the female buckle (120), wherein

the first conductive member (131) is connected to the automatic ejection member (140),

the second conductive member (132) is electrically connected to the control circuit,

when the male buckle (110) and the female buckle (120) are engaged, the male buckle (110) pushes the automatic ejection member (140) to make the first conductive member (131) and the second conductive member (132) in contact or separate to generate an actuating signal or a disconnecting signal; the control circuit operating according to the actuating signal or the disconnecting signal.

2. The buckle (100) of claim 1 further characterized in that the second conductive member (132) comprises two conductive wires that are not conductive with each other.

3. The buckle (100) of claim 2 further characterized in that the first conductive member (131) comprises a metal plate, wherein when the male buckle (110) and the female buckle (120) are engaged, the male buckle (110) pushes the automatic ejection member (140) to make the metal plate contact the two conductive wires to generate the actuating signal, and when the male buckle (110) and the female buckle (120) are disengaged, the metal plate separates from the two conductive wires separate to generate the disconnecting signal.

4. The buckle (100) of claim 3 further characterized in that the first conductive member (131) comprises one or more metal springs (132b) connected to the automatic ejection member (140) for separating the metal plate and the two conductive wires.

5. The buckle (100) of claim 3 further characterized in that the metal plate is elastic or connected to an elastic member.

6. The buckle (100) of claim 1 further characterized in that the second conductive member (132) comprises a metal buckle having two contact ends (1321) apart from each other and a tail end (1322) away from the two contact ends (1321) and electrically connected to the control circuit, wherein when the male buckle 110 and the female buckle 120 are engaged, the male buckle 110 pushes the automatic ejection member (140) to make the first conductive member (131) and the two contact ends (1321) in contact or separate.

7. The buckle (100) of claim 6 further characterized in that when the male buckle (110) and the female buckle (120) are engaged, the male buckle (110) pushes the automatic ejection member 140) such that the first conductive member 131 is separated from the two contact ends (1321) to generate the disconnecting signal, and when the male buckle (110) and the female buckle (120) are disengaged, the automatic ejection member 140) moves the first conductive member (131) such that the first conductive member 131 contacts the two contact ends (1321) to generate the actuating signal.

8. The buckle (100) of claim 6 further characterized in that when the male buckle (110) and the female buckle (120) are engaged, the male buckle (110) pushes the automatic ejection member 140) such that the first conductive member 131 contacts the two contact ends (1321) to generate the actuating signal, and when the male buckle (110) and the female buckle (120) are disengaged, the automatic ejection member 140) moves the first conductive member (131) such that the first conductive member 131 is separated from the two contact ends (1321) to generate the disconnecting signal.

9. The buckle (100) of any one of claims 6 to 8 further characterized in that first conductive member comprises a metal rod.

10. The buckle (100) of claim 1 further characterized in that the second conductive member (132) comprises two conductive pillars (132a) that are electrically connected to the control circuit, wherein when the male buckle (110) and the female buckle (120) are engaged, the male buckle (110) pushes the automatic ejection member (140) to drive the first conductive member (131) to move to make the first conductive member (131) and the two conductive pillars (132a) in contact or separate.

11. The buckle (100) of claim 10 further characterized in that when the male buckle (110) and the female buckle (120) are engaged, the male buckle (110) pushes the automatic ejection member (140) to make the first conductive member (131) contacts the two conductive pillars (132a) to generate the actuating signal, and when the male buckle (110) and the female buckle (120) are disengaged, the automatic ejection member (140) automatically ejects such that the first conductive member (131) separates from the two conductive pillars (132a) to generate the disconnecting signal.

12. The buckle (100) of claim 11 further characterized in that the first conductive member (131) comprises two metal springs (132b) connected to the automatic ejection member 140, wherein a distance between the two conductive pillars (132a) corresponds to a distance between the two metal springs (132b).

13. The buckle (100) of claim 12 further characterized in that the two metal springs (132b) are formed as a one-piece structure.

14. A buckle (100) having a control circuit characterized by the buckle (100) comprising

a male buckle (110);

a female buckle (120);

an actuating structure (130) comprising a movable member (150), a first conductive member (131) and a second conductive member (132) disposed on the female buckle (120); and

an automatic ejection member (140) disposed in the female buckle for ejecting the male buckle (110) out of the female buckle (120), wherein

the moveable member (150) is connected to the automatic ejection member (140),

the first conductive member (131) is a switch,

the second conductive member (132) is electrically connected to the control circuit and comprises two contact ends (1321) that are conducted or disconnected by the switch,

when the male buckle (110) and the female buckle (120) are engaged, the male buckle (110) pushes the automatic ejection member (140) to drive the movable member (150) to move, such that the movable member (150) detachably acts on the switch to make the switch and the second conductive member (132) in contact or separate.

15. The buckle (100) of claim 14 further characterized in that when the male buckle (110) and the female buckle (120) are engaged, the movable member (150) is away from the switch to make the switch and the second conductive member (132) separate; when the male buckle (110) and the female buckle (120) are disengaged, the automatic ejection member (140) ejects and pushes the movable member (150) to move to press the switch to make the switch and the second conductive member (132) in contact.

16. The buckle (100) of claim 14 further characterized in that when the male buckle (110) and the female buckle (120) are engaged, the male buckle (110) pushes the automatic ejection member (140) to drive the movable member (150) to press the switch to make the switch and the second conductive member (132) in contact; when the male buckle (110) and the female buckle (120) are disengaged, the automatic ejection member (140) ejects to drive the movable member (150) to move away from the switch to make the switch and the second conductive member (132) separate.

17. The buckle (100) of any of claims 1 to 16 further characterized in that the control circuit comprises a Bluetooth module and the control circuit controls the Bluetooth module on or off according to the actuating signal or the disconnecting signal.

18. The buckle (100) of any of claims 1 to 16 further characterized in that the control circuit is disposed inside or outside the buckle (100).

19. The buckle (100) of any of claims 1 to 16 further characterized in that the control circuit comprises a communication module configured to communicate with an external mobile device.