Claims

1. A microstrip patch antenna applied in the miniaturized radio frequency identification tag (RFIT), characterized in that it includes a power supply part and a radiation part connected with each other, the two sides of the radiation part are provided with at least one slit.

2. The microstrip patch antenna applied in the miniaturized RFIT according to claim 1, characterized in that the slit can be circular, oval or polygonal.

3. The microstrip patch antenna applied in the miniaturized RFIT according to claim 1, characterized in that the radiation part can be circular, oval or polygonal.

4. The microstrip patch antenna applied in the miniaturized RFIT according to claim 1 or 3, characterized in that the radiation parts and the power supply part are made of silver.

5. A miniaturized RFIT, characterized in that, it includes a chip, a substrate and a microstrip patch antenna, wherein the microstrip patch antenna is attached to a surface of the substrate; the microstrip patch antenna comprises a power supply part and a radiation part which are connected with each other; and the power supply part is connected with the chip through a microstrip line.

6. The miniaturized RFIT according to claim 5, characterized in that, around the chip, a protective coating is provided according to the height of the chip.

7. The miniaturized RFIT according to claim 6, characterized in that the protective coating can be ceramic or rubber.

8. The miniaturized RFIT according to claim 5, characterized in that the substrate is ceramic.

9. The miniaturized RFIT according to claim 5, characterized in that the microstrip patch antenna further comprises a ground with a connection part, the power supply part and the radiation part are placed on the surface opposite to the ground, and the power supply part and the connection part connect to the chip on the same surface as the microstrip patch antenna or the ground to be, or on a side surface where the microstrip patch antenna is connected to the ground.

10. The miniaturized RFIT according to claim 5 or 9, characterized in that the microstrip patch antenna is made of silver.

11. The miniaturized RFIT according to claim 5, characterized in that there is a space between the two sides of the power supply part and the radiation part.

12. The miniaturized RFIT according to claim 5, characterized in that the radiation part can be circular, oval or polygonal.

13. The miniaturized RFIT according to any one of claims 5, 9, 11 and 12, characterized in that the two sides of the radiation part are provided with at least one slit.

14. The miniaturized RFIT according to claim 13, characterized in that the slit can be circular, oval or polygonal.

CLAIMS

What is claimed is:

1. A microstrip patch antenna applied in a miniaturized radio frequency identification tag (RFIT), comprising:
a radiation part comprising a first portion and a second portion with at least one slit between the first and the second portions;

a power supply part formed at an edge of the first portion away from the second portion such that the at least one slit is positioned between the power supply part and the second portion of the radiation part, said at least one slit having at least one continuously curved edge.

2. The microstrip patch antenna applied in the miniaturized RFIT according to claim 1, wherein the at least one slit is circular, oval or polygonal.

3. The microstrip patch antenna applied in the miniaturized RFIT according to claim 1, wherein the radiation part is circular, oval or polygonal.

4. The microstrip patch antenna applied in the miniaturized RFIT according to claim 1, wherein the radiation part and the power supply part are made of silver.

5. The microstrip patch antenna applied in the miniaturized RFIT according to claim 1, wherein a size of the at least one slit is adjustable.

6. The microstrip patch antenna applied in the miniaturized RFIT according to claim 1, wherein the power supply part is directly coupled to the radiation part such that the power supply part is formed from a planar structure having the radiation part and the power supply part.

7. A miniaturized radio frequency identification tag (RFIT), comprising:
a chip, a substrate and a microstrip patch antenna, wherein the microstrip patch antenna is attached to a surface of the substrate;

the microstrip patch antenna comprises a power supply part formed at an end of a radiation part, the power supply part; and

the power supply part is connected with the chip through a microstrip line protruding at least partially beyond the end of the radiation part, said chip being outside the radiation part on a side surface of the substrate perpendicular to a surface of the substrate having the microstrip patch antenna.

8. The miniaturized RFIT according to claim 7, wherein around the chip, a protective coating is provided according to a height of the chip.

9. The miniaturized RFIT according to claim 8, wherein the protective coating is ceramic or rubber.

10. The miniaturized RFIT according to claim 7, wherein the substrate is ceramic.

11. The miniaturized RFIT according to claim 7, wherein the microstrip patch antenna further comprises a ground with a connection part, the power supply part and the radiation part are placed on a surface opposite to the ground, and the power supply part and the connection part connect to the chip on the same surface as the power supply part, the same surface as the ground, or on the side surface where the power supply part is connected to the ground via the connection part.

12. The miniaturized RFIT according to claim 7, wherein the microstrip patch antenna is made of silver.

13. The miniaturized RFIT according to claim 7, wherein there is a space between two sides of the power supply part and the radiation part.

14. The miniaturized RFIT according to claim 7, wherein the radiation part is circular, oval or polygonal.

15. The miniaturized RFIT according to claim 7, wherein two sides of the radiation part are provided with at least one slit between the end having the power supply part and another end of the radiation part.

16. The miniaturized RFIT according to claim 15, wherein the slit is circular, oval or polygonal.

17. The miniaturized RFIT according to claim 16, wherein a size of the slit is adjustable.

18. The miniaturized RFIT according to claim 7, wherein the microstrip line is in a bent configuration to connect the power supply part to the chip.

19. The production method of claim 18 further comprising:
providing a protective coating according to a height of the chip, around the chip.

20. A production method for a microstrip patch antenna, comprising:
providing a chip, a substrate and a microstrip patch antenna;

attaching the microstrip patch antenna to a surface of the substrate; and

connecting the power supply part is connected with the chip through a microstrip line protruding at least partially beyond the end of the radiation part, said chip being outside the radiation part on a side surface of the substrate perpendicular to a surface of the substrate having the microstrip patch antenna.