What is claimed is:

1. A dual-band dual-port antenna structure, comprising:

a first antenna structure and a second antenna structure;

wherein the first antenna structure operates in a high-frequency band and comprises a first feeding port, a first feeding path electrically connected to the first feeding port, and a first radiating element;

the second antenna structure operates in a low-frequency band and comprises a second feeding port, a second feeding path electrically connected to the second feeding port, and a second radiating element;

the first feeding path comprises a first capacitor and a first feeding line;

the second feeding path comprises a first inductor and a second feeding line;

the second radiating element of the second antenna structure at least partially surrounds the first radiating element of the first antenna structure;

wherein the first feeding line has a third feeding portion and a fourth feeding portion, the first inductor is electrically connected between the first feeding portion and the second feeding portion, and the first feeding portion is electrically connected between the first feeding port and the first capacitor; and

the second feeding line has a third feeding portion and a fourth feeding portion, the first inductor is electrically connected between the third feeding portion and the fourth feeding portion, and the third feeding portion is electrically connected between the second feeding port and the first inductor;

wherein the first radiating element and the second radiating element are disposed on a first plane,

the first capacitor, the first feeding portion, the second feeding portion, the third feeding portion, the fourth feeding portion and the first inductor are disposed on a second plane; and

the first plane and the second plane are not coplanar.

2. The dual-band dual-port antenna structure of claim 1, wherein the first antenna structure further comprises a feeding metal element electrically connected to the second feeding portion; and

the first radiating element has an aperture in the center of the first radiating element and the feeding metal element is located in the aperture of the first radiating element.

3. The dual-band dual-port antenna structure of claim 2, further comprising a ground plane disposed on a third plane, wherein the third plane is located between the first plane and the second plane, and the second radiating element further comprises a shorting pin electrically connected to the ground plane.

4. The dual-band dual-port antenna structure of claim 1, wherein the second radiating element substantially has a U-shape and an opening of the U-shape faces the second feeding port.

5. The dual-band dual-port antenna structure of claim 1, wherein the high-frequency band is substantially from 3GHz to 5GHz and the low-frequency band is substantially from 880MHz to 920MHz.

6. The dual-band dual-port antenna structure of claim 1, wherein the first feeding path and the second feeding path are separately disposed along a straight line, a shape of the first radiating element and a shape of the second radiating element are respectively symmetrical to the straight line, and the first feeding port and the second feeding port are respectively disposed on two opposite ends of the straight line.

7. The dual-band dual-port antenna structure of claim 1, wherein the second radiating element of the second antenna structure entirely surrounds the first radiating element of the first antenna structure.

8. The dual-band dual-port antenna structure of claim 1, wherein the second radiating element substantially has a U-shape, and an area inside an opening of the U-shape where the first radiating element is located is larger than an area outside the opening of the U-shape where the first radiating element is located.

9. A dual-band dual-port antenna structure, comprising:

a first antenna structure and a second antenna structure;

wherein the first antenna structure operates in a high-frequency band and comprises a first feeding port, a first feeding path electrically connected to the first feeding port, and a first radiating element;

the second antenna structure operates in a low-frequency band and comprises a second feeding port, a second feeding path electrically connected to the second feeding port, and a second radiating element;

the first feeding path comprises a first capacitor and a first feeding line;

the second radiating element comprises a first radiation branch and a second radiation branch;

the first radiation branch comprises a first inductor and the second radiation branch comprises a second inductor; and

the second radiating element of the second antenna structure at least partially surrounds the first radiating element of the first antenna structure;

wherein the first feeding line has a first feeding portion and a second feeding portion, the first capacitor is electrically connected between the first feeding portion and the second feeding portion, and the first feeding portion is electrically connected between the first feeding port and the first capacitor;

wherein the first radiating element and the second radiating element are disposed on a first plane;

the first capacitor, the first feeding portion and the second feeding portion are disposed on a second plane; and

the first plane and the second plane are not coplanar.

10. The dual-band dual-port antenna structure of claim 9, wherein the first antenna structure further comprises a feeding metal element electrically connected to the second feeding portion;

the first radiating element comprises a first radiation branch and a second radiation branch, and the first radiation branch of the first radiating element and the second radiation branch of the first radiating element each have an aperture; and

the feeding metal element extends, from the second plane, upwardly into the two apertures of the first radiation branch and the second radiation branch.

11. The dual-band dual-port antenna structure of claim 9, further comprising a ground plane disposed on a third plane, wherein the third plane is located between the first plane and the second plane, and the second radiating element further comprises a shorting pin electrically connected to the ground plane.

12. The dual-band dual-port antenna structure of claim 9, wherein an opening of the second radiating element faces the second feeding port.

13. The dual-band dual-port antenna structure of claim 9, wherein the high-frequency band is substantially from 3GHz to 5GHz and the low-frequency band is substantially from 850MHz to 950MHz.

14. The dual-band dual-port antenna structure of claim 9, wherein the first feeding path and the second feeding path are separately disposed along a straight line, a shape of the first radiating element and a shape of the second radiating element are respectively symmetrical to the straight line, and the first feeding port and the second feeding port are respectively disposed on two opposite ends of the straight line.

15. The dual-band dual-port antenna structure of claim 9, wherein the first radiation branch of the first radiating element of the first antenna structure is located in the second radiating element of the second antenna structure.

16. The dual-band dual-port antenna structure of claim 9, wherein the first inductor is disposed in a region of the first radiation branch of the second radiating element which is closest to the first radiating element, and the second inductor is disposed in a region of the second radiation branch of the second radiating element which is closest to the first radiating element; and

the first radiation branch of the second radiating element and the second radiation branch of the second radiating element substantially and respectively have a L-shape.