

ClaimsWhat is claimed is:

1. A dual uncoupled mode box antenna comprising:
  - a conductive ground plane; and
  - a box structure superimposed on said ground plane having a plurality of conductive sides, wherein at least one of the conductive sides is insulated from the ground plane and at least one other of said sides is grounded to said ground plane;
2. The box antenna of claim 1 wherein a conductive top is superimposed over the conductive sides.
3. The box antenna of claim 2 wherein the top is insulated from the conductive sides
4. The box antenna of claim 2 wherein there are insulating slots between the side plates.
5. The box antenna of claim 2 wherein there is a dielectric insulation between the top plate and the side plate.

6. The box antenna of claim 5 wherein the slots between the conductive sides are air gaps.
7. The box antenna of claim 2 wherein the sides are perpendicular to the ground plane and the top
8. The box antenna of claim 2 wherein there is a first conductive side and a second conductive side and said first and second sides are insulated from conductive ground plane.
9. The box antenna of claim 8 wherein there is an air gap between the first conductive side and the second conductive side.
10. The box antenna of claim 8 wherein there is a dielectric footer between the first conductive side and the ground plane, and there is a dielectric footer between the second conductive side and the ground plane.
11. The box antenna of claim 8 wherein there is a third conductive side positioned in spaced opposed relation to the first conductive side and there is a fourth conductive side positioned in spaced opposed relation to the second conductive side.

12. The box antenna of claim 11 wherein there is an air gap between the third conductive side and the fourth conductive side.

13. The box antenna of claim 12 wherein there is an air gap between the first and fourth side and between the second and third side.

14. The box antenna of claim 12 wherein the third conductive side and the fourth conductive side are each grounded to ground plate.

15. The box antenna of claim 14 wherein the first, second, third, and fourth sides are perpendicular to the ground plane.

16. The box antenna of claim 14 wherein the first, second, third, and fourth sides and the top are metal plates.

17. The box antenna of claim 1 wherein a quadrature hybrid circuit is connected to the conductive side which is insulated from the conductive ground plane.

18. The box antenna is used for a desired frequency having a wavelength wherein the first, second, third, and fourth sides each have a dimension which is about one eighth of said wavelength.

19. A box antenna comprising:

a conductive bottom horizontal ground plane;

a box structure superimposed on said ground plane comprising:

a vertical first conductive side insulated from the ground plane;

a vertical second conductive side insulated from the ground plane and positioned in gapped perpendicular relation to the first side;

a vertical third conductive side grounded to the ground plane and positioned in gapped perpendicular spaced relation to second side;

a vertical fourth conductive side grounded to the ground plane and positioned in gapped perpendicular spaced relation to the first and third sides; and

a conductive top superimposed over and insulated from the first, second, third, and fourth sides.

20. The box antenna of claim 19 wherein the antenna is used for a desired frequency having a wavelength and the first, second, third, and fourth sides each have a dimension which is about one eighth of said wavelength.

21. A method of radiating a signal comprising the steps of:

(a) providing a box antenna comprising:

a conductive bottom horizontal ground plane; and

a box structure superimposed on said ground plane comprising:

a vertical first conductive side insulated from the ground plane;

a vertical second conductive side insulated from the ground plane spaced relation to the first side;

a vertical third conductive side grounded to the ground plane and positioned in perpendicular spaced relation to second side;

a vertical fourth conductive side grounded to the ground plane and positioned in perpendicular spaced relation to the first and third sides; and

a conductive top superimposed over and insulated from the first, second, third, and fourth sides; and

(b) feeding a current to the first and second sides.

22. The method of claim 21 wherein the signal is feed to said first and second sides in quadrature to create left handed polarization.

23. The method of claim 21 wherein the signal is fed to said first and second sides in quadrature to create right handed polarization.

24. The method of claim 21 wherein the antenna is used for a desired frequency having a wavelength and the first, second, third, and fourth sides each have a dimension which is about one eighth of said wavelength.

2025 RELEASE UNDER E.O. 14176