

**Abstract**

A thin plane antenna that copes with the horizontally polarized waves and the vertically polarized waves, or the levo-rotary polarized waves and the dextro-rotary polarized waves, and in which a loop-shaped plane antenna element (12) is arranged in parallel with a ground plane (15), and a first feeder conductor (13) and a second feeder conductor (14) having feeding points displayed by 90 degrees are arranged between the plane antenna element and the ground plane. Central conductors (18a) and (19a) of the coaxial lines are connected to the first and second feeder conductors, and external conductors (18b) and (19b) thereof are connected to the ground plane to feed electric power to the antenna element through the electromagnetic coupling. When the electric power is fed from the first feeder conductor (13), the horizontally polarized waves are radiated and when the electric power is fed from the second feeder conductor (14), the vertically polarized waves are radiated. Upon changing over the first and second feeder conductors, the horizontally polarized waves and the vertically polarized waves can be transmitted and received. By providing the horizontal antenna element with slide elements, further, the levo-rotary polarized waves and the dextro-rotary polarized waves can be transmitted and received.