

# **Planar Helix Slow-Wave Structure with Straight-Edge Connections**

## **ABSTRACT**

A planar helix slow-wave structure with straight edge connections where the structure consists of two arrays of thin, parallel, conductors printed on top and bottom faces of a low-loss dielectric material or substrate, the conductors in the arrays printed on the top and bottom surfaces being inclined at different but symmetric pitch angles on the surface of the planar surface, the conjunction ends of the conductors on the top and bottom faces being connected by vertical conductors with circular rings with a diameter greater than the diameter of the vertical conductors to ensure proper connections between them, and a vacuum tunnel inside the planar helix structure.

***FIG. 1***