DUAL LINEAR/CIRCULAR POLARIZED PLANAR ANTENNA WITH LOW PROFILE DOUBLE-LAYER POLARIZER OF 45º TILTED METALLIC STRIPS FOR WIMAX APPLICATIONS

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Abstract:
A low profile double-layer polarizer structure is presented for planar patch antennas to obtain circular polarization in 3.5 GHz WiMAX band (3.4-3.6 GHz ≈ 5.7% bandwidth). Each polarizer layer is composed of 45º tilted metallic strips on a printed circuit. A bandwidth widening is obtained due to a significant reduction of the distance between polarizer and patches. The associated effects from the interaction of the two structures have been studied. A 2x2 array prototype has been implemented and measured, with a 8% average bandwidth in reflection and dual linear/circular polarization.

Citation:

References:


A circularly polarized wave can be in one of two possible states, right circular polarization in which the electric field vector rotates in a right-hand sense with respect to the direction of propagation, and left circular polarization in which the vector rotates in a left-hand sense. Circular polarization is a limiting case of the more general condition of elliptical polarization. Right-handed/clockwise circularly polarized light displayed with and without the use of components. This would be considered left-handed/counter-clockwise circularly polarized if defined from the point of view of the source rather than the receiver. Refer to the below convention section.[1].