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Patent Search

Invention Title	A SYSTEM FOR ELECTRO-GEOMETRICAL ANALYSIS OF TRANSVERSAL V-FOLD PATCH ANTENNA
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Abstract:

ABSTRACT A SYSTEM FOR ELECTRO-GEOMETRICAL ANALYSIS OF TRANSVERSAL V-FOLD PATCH ANTENNA The present invention describes a system for electro-geometrical analysis of transversal v-fold patch antenna. The present invention is focused on the analysis of innovative effect of "V"-shape folding on the resonance frequency and input impedance microstrip patch antenna. The V-folded antenna is assumed behaving as an arm constituted by horizontal and tilted members which is geometrically characterized by the folding angle, α . The folding is characterized by the angle between the horizontal plane and the folded part of patch antenna printed on Kapton flexible substrate. The initially flat configured planar antenna was designed to operate at about 2.45 GHz. Full wave electromagnetic simulations of different geometrical states of the flexible antenna were performed in the frequency range from 1 GHz to 5 GHz. Exceptional results of tilted surface radiating part of flexible patch antenna were found with positive folding angle from $\alpha_{min}=0^\circ$ to $\alpha_{max}=45^\circ$.

Complete Specification

DESC:FIELD OF INVENTION:

This invention generally relates to the field of the method and system for analysis of Transversal V-Fold Patch Antenna, and more particularly relates to a system for electro-geometrical analysis of transversal v-fold patch antenna.

BACKGROUND OF THE INVENTION

The present invention pertains to an original concept of electro-geometrical analysis of flexible microstrip antenna. The research work is focused on the analysis of innovative effect of "V"-shape folding on the resonance frequency and input impedance of microstrip patch antenna. The V-folded antenna is assumed behaving as an arm constituted by horizontal and tilted members which is geometrically characterized by the folding angle, α . The folding is characterized by the angle between the horizontal plane and the folded part of patch antenna printed on Kapton flexible substrate. The initially flat configured planar antenna was designed to operate at about 2.45 GHz. The innovative design method of the V-shape folded flexible antenna is explained. Full wave electromagnetic simulations of different geometrical states of the flexible antenna were performed in the frequency range from 1 GHz to 5 GHz. Exceptional results of tilted surface radiating part of flexible patch antenna were found with positive folding angle from $\alpha_{min}=0^\circ$ to $\alpha_{max}=45^\circ$. It was understood in the first time in the area of antenna engineering that the resonance frequency is fluctuating according to typical sine damping in function of the V-folding angle variation. The folded angle effect, never being understood before is discussed. In addition to the angle effect, the input resistance and input reactance of the V-folded flexible patch antenna are also plotted.

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