Abstracts

A New Mode-Coupling Effect on Coplanar Waveguides of Finite Width

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A new mode-coupling effect that occurs on conventional coplanar waveguides of finite width is identified and explained here for the first time. The coupling occurs between the standard CPW dominant mode and a new dominant mode also identified here for the first time, and called here the CPW dominant surface-wave-like mode. This coupling is different from that which is known to occur when a printed-circuit waveguide is placed in a box or package; here there is no box, and the finite width by itself is sufficient to produce the coupling effect. Other new physical effects, that will be discussed in detail elsewhere, are included here in order to place the new coupling effect in perspective.

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