Abstracts

Analysis of Planar Millimeter Wave Slot Antennas Using a Spectral Domain Approach

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Self radiating oscillators in the millimeter wave range can be built by combining a slot resonator with an impatt diode. Good performance can be achieved only, if the input impedance of the slot, seen at the terminals of the impatt diode, is in a proper range. In this paper the input impedance, obtained by a rigorous full wave analysis, is presented in dependence of the design parameters slot width and substrate height for silicon and PTFE. It will be shown that the required input resistance (typically 2...5 Omega) can be achieved by choosing narrow slots. The comparison with a recently published self radiating oscillator shows the validation of the simulation.

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