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标题: An Indirect Impedance Characterization Method for Monolithic THz Antennas Using Coplanar Probe Measurements

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摘要: We develop a simple and robust impedance characterization method for planar THz antennas with micron- and submicron-size port geometries. Such antennas are often encountered in THz sensing applications where an ultrafast electronic device, such as a Schottky junction or a heterostructure backward diode, is integrated with a planar antenna structure. Standard probe characterization of such antennas at the device port is not currently possible due to the large contact areas required. The proposed method allows for indirect characterization of antenna impedance seen at the device port using measurements collected at a more suitable, remote location on the antenna plane. Three measurements are performed using contact probes at a larger pad on the antenna periphery, using three terminations (short, open, and a resistive load) of the port under consideration. Through a simple relation, the measured data set is used to compute the port-impedance indirectly. Experimental results are presented to illustrate the accuracy of the proposed approach.

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