Abstracts

A New Type of the Narrow-Pulse Distortion Caused by the Simultaneous-Propagation Effect of Both Bound and Leaky Modes on Printed-Circuit Transmission Lines

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We report here a new type of the narrow-pulse distortion. Our first two papers reported for the first time that the power-leakage effect on most of printed-circuit transmission lines, which was discovered by us, caused a serious narrow-pulse distortion. Our investigation then discovered also the surprising presence of the simultaneous-propagation effect of both bound and leaky dominant modes on printed-circuit transmission lines. We present here that this effect causes a new type of the narrow-pulse distortion. An important result revealed here is that a narrow pulse inevitably changes into a wide pulse attended with a serious problem relating to the interconnects, even as such a pulse travels along a uniform line.

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