Abstracts

Suppression of the parallel-plate noise in high-speed circuits using a metallic electromagnetic band-gap structure

R. Abhari and G.V. Eleftheriades. "Suppression of the parallel-plate noise in high-speed circuits using a metallic electromagnetic band-gap structure." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 493-496 vol.1.

A novel approach for the suppression of the parallel-plate noise in high-speed circuits is proposed by utilizing a metallic electromagnetic band-gap (EBG) structure. The key idea relies on replacing one of the two solid electric conductor plates with a metallic EBG surface of compact texture. To validate the concept, an EBG surface was fabricated and employed in a number of via-containing parallel-plate test boards. Frequency domain measurements showed a band-gap of about 1.7 GHz around 3.77 GHz. More importantly, suppression of the parallel-plate noise by 65% was achieved based on time domain reflectometry experiments.

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