Experimental Verification of the Suppression of Crosstalk between Bended Parallel Microstrips via Designer Surface Plasmon Polaritons

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Abstract

In this paper, we propose a novel microstrip using the concept of designer surface plasmon polaritons (designer SPPs) to construct the bended parallel microstrips to suppress the crosstalk in between, which is realized by introducing subwavelength periodic corrugations onto the edges of one conventional microstrip. The transmission properties of this microstrip are numerically analyzed. The suppression e®ect of the coupling between the bended corrugated microstrip and conventional microstrip is also experimentally investigated, especially in the time domain signal measurement. A good agreement between the numerical and experimental results in this microstrip structure is found. Thus, such a structure can e®ectively suppress the cross talk in the high speed digital signal transmission.

Keyword：surface plasmon