Abstracts

Bragg Reflection Characteristics of Millimeter Waves in a Corrugated H-Guide (Short Papers)

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The Bragg reflection characteristics of millimeter waves in a H-guide having a corrugated dielectric slab are investigated by the perturbation method of multiple scales. Brillouin diagrams in the vicinity of the Bragg frequency of the TM-TM-, TE-TE-, and TM-TE-mode couplings are shown. Validity of the theoretical predictions are confirmed by experiments carried out in the 40-50-GHz region. Typical frequency response at the stopband resulting from TM-TM-mode coupling is stop bandwidth about 380 MHz, with return loss about 2.1 dB at the Bragg frequency 47.3 GHz.

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