Abstracts

The Design of Broad-Band Frequency Doublers Using Charge-Storage Diodes (Dec. 1969 [T-MTT])

K.L. Kotzebue and G.L. Matthaei. "The Design of Broad-Band Frequency Doublers Using Charge-Storage Diodes (Dec. 1969 [T-MTT])." 1969 Transactions on Microwave Theory and Techniques 17.12 (Dec. 1969 [T-MTT]): 1077-1086.

Many frequency multipliers can be viewed as consisting of an impedance inverter which couples together impedances at two different frequencies. Using this point of view, the design, construction, and evaluation of a five-resonator, broad-band frequency doubler employing charge-storage diodes is discussed. The doubler is a balanced design, employing two diodes and a balun. Design procedures which relate a low-pass filter prototype to the doubler circuit are presented. Good agreement between theory and experiment has been demonstrated; the experimental doubler exhibits approximately an octave bandwidth at 50 percent efficiency with an input frequency range of 1 to 2 GHz.

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