Abstracts

Microwave Delay Techniques Using YIG

F.A. Olson and J.R. Yaeger. "Microwave Delay Techniques Using YIG." 1965 Transactions on Microwave Theory and Techniques 13.1 (Jan. 1965 [T-MTT]): 63-69.

Recent developments in microwave delay techniques employing single-crystal yttrium iron gamet (YIG) are described. In particular, the operation of a two-port, electronically variable-delay device utilizing long-wavelength spin-wave propagation in single-crystal YIG is presented in detail. Specific advantages of this device are transmission-type operation, delay continuously variable from zero to several microseconds by means of magnetic field, and lack of critical dimensions or surface finishes. This form of delay, as well as those due to acoustic-wave and spin-wave/acoustic-wave propagation, have been observed at frequencies from 1 to 10 Gc/s. A comparison of the performances of these delay processes is made, with special attention to insertion loss, bandwidth, frequency limits, and variable-delay range.

❑ Return to main document.