Abstracts

A Digital Latching Ferrite Strip Transmission Line Phase Shifter (Nov. 1965 [T-MTT])

L.R. Whicker and R.R. Jones. "A Digital Latching Ferrite Strip Transmission Line Phase Shifter (Nov. 1965 [T-MTT])." 1965 Transactions on Microwave Theory and Techniques 13.6 (Nov. 1965 [T-MTT]): 781-784.

This paper is concerned with the development of a new type of latching phase shifter which combines submicrosecond switching with a compact strip transmission line structure. Digital increments of nonreciprocal phase shift are obtained by "latching" or switching the magnetization of appropriate square loop garnet or ferrite materials from one remanent state to another. The following data have been obtained for a four-bit, C-band model utilizing yttrium iron garnet (4piM/sub 8/ = 1600 G): Center Frequency - 5.45 Gc/s Phase Deviation - <= ±3 percent over an 8 percent frequency band Insertion Loss - < 0.9 db VSWR - < 1.50 Switching Time - < 0.3µs with a 130 V, 13 amp pulse Switching Energy - < 200 µJ for 180° bit Length - < 6 inches.

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