Abstracts

An X-Band Ferroelectric Phase Shifter

M. DiDomenico, Jr. and R.H. Pantell. "An X-Band Ferroelectric Phase Shifter." 1962 Transactions on Microwave Theory and Techniques 10.3 (May 1962 [T-MTT]): 179-185.

An X-band electrically-tunable ferroelectric phase shifter has been constructed. The phase shifter is reciprocal and consists of a thin ferroelectric slab completely filling the transverse plane of a rectangular waveguide with suitable dielectric matching sections placed symmetrically about the slab forming a band-pass filter. Phase shift is controlled by applying a dc electric field to the ferroelectric. The measured characteristics of this device indicate that incremental phase shifts of 40° to 50° are attainable over a bandwidth of 400 Mc centered about 9.3 kMc with insertion losses ranging from 2 to 6 db. Since the phase shifter does not require a magnetic field for operation, the device can be biased with inexpensive, light-weight equipment requiring negligible dc control power, and the response time can be expected to be fast.

❑ Return to main document.