

Microwave Oscillator Control Using a Switched Delay-Line Technique

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A novel arrangement is described which uses an oscillator feedback network, incorporating a switched delay line, to stabilize the oscillator frequency and to permit electronic frequency selection. The circuit, which has been fabricated and tested in hybrid MIC form, makes use of two simple microstrip circuits to achieve the delay line and switching functions. A three-port discriminator is used to provide the effective delay line and single PIN diode phase shifter is used to achieve delay switching. Results are presented which show that the circuit provides good frequency stabilization, together with predictable frequency switching and a reduction in oscillator phase noise.

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