Abstracts

Surface Acoustic Wave (SAW) Controlled Oscillators (Panel Discussion)

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The surface acoustic wave (SAW) controlled oscillator consists of a narrow band SAW delay line or resonator used as a feedback element, an amplifier with sufficient gain to overcome the insertion loss of the SAW device, and a means to couple out part of the signal. The SAW oscillator is related to the quartz crystal oscillator in that the stabilizing element is provided by the long delay time of an acoustic device. The surface wave device is also generally fabricated on quartz because of the inherent stability of this material. However, the planar technology of SAW devices allows fabrication of devices with operating frequencies up to the range of 1 to 2 GHz. Also, great flexibility is available in SAW design because either a resonator or delay line may be used. Delay line type oscillators are particularly useful for applications where frequency modulation is required since a tuning range of up to 1 percent can be achieved. In general, SAW controlled oscillators are small, simple, and rugged devices operating in the frequency range of 50 MHz to above 1 GHz.

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