Abstracts

A Review of the State-of-the-Art of Surface Acoustic Wave Technology

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Until recently, acoustic devices have been of the bulk form. The typical bulk, wave device consists of a crystalline block to which opposing piezoelectric transducers are attached. The piezoelectric transducer emits a narrow beam of acoustic energy into the material. Some of the energy is intercepted at the output transducer and reconverted to an electrical signal. The acoustic signal is virtually inaccessible during transit. If the acoustic energy is moved to the surface of the crystal, a considerable amount of manipulation becomes feasible, including wave guidance, switching, amplification, tapping, and power splitting functions. This, in essence, is the microsound principle, the exploitation of which is the subject of this paper. The manipulation of the acoustic energy is accomplished with the aid of three fundamental components: the transducer, the amplifier, and the waveguide.

❑ Return to main document.