Simulation of Multiport/Multitransducer Surface Acoustic Wave Devices

Outline

1. Multiport Nodal Analysis in Quasi-Static Approximation
   1.1. Statement of the problem
   1.2. Three-port representation of a SAW transducer
   1.3. Mixed-scattering matrix (P-matrix)
   1.4. Terminal currents and voltages
   1.5. Inter-transducer admittance matrix

2. Mixed Scattering Matrix Simulation of Multiport System
   2.1. Statement of the problem
   2.2. Block-matrix solution
   2.3. Particular case (loading by two-port junctions)

3. SAW Resonator Modeling
   2.1. One-port resonator
   2.2. Two-port resonator

4. Conclusions