Abstracts

Miniaturization and advanced functionalities of SAW devices

H. Meier, T. Baier and G. Riha. "Miniaturization and advanced functionalities of SAW devices." 2001 Transactions on Microwave Theory and Techniques 49.4 (Apr. 2001, Part II [T-MTT] (Special Issue on Microwave Acoustic Wave Devices for Wireless Communications and Sensing)): 743-748.

Apart from the active semiconductor chips a multitude of surface acoustic wave (SAW) filters are the key components that make modern RF circuits for mobile telecommunication and multimedia applications work. The latter are the most sophisticated and delicate species of passive components of which today's RF applications contain several hundred. While active integration has led to decreasing numbers of semiconductors inside a phone, for the time being, the passive components outnumber the actives. Obviously, the highest potential for further miniaturization lies in the passive components, As the market asks for further miniaturized mobile phones and digital tuners EPCOS AG, Munich, Germany, tackles this challenge not only by further shrinking the SAW filters, but also by integrating additional functions into the SAW filters, which were originally not SAW related at all. This paper briefly presents several applications for such highly miniaturized SAW filters offering superior filter performance combined with additional features like impedance transformation, balun functionality, or double balanced operation, allowing for smaller and cheaper designs by effectively reducing printed-circuit-board space, as well as component count.

❑ Return to main document.