Abstracts

SAW filter solutions to the needs of 3G cellular phones

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Services based on third-generation (3G) cellular phone standards like W-CDMA or cdma-2000 will be launched in the very near future. They will bring together mobile telephony and applications such as internet communication, digital picture transmission or video conferencing that require high data rates. This objective and other provisions in the new standards lead to significantly changed requirements on the surface acoustic wave (SAW) filters employed in the IF and RF stages of 3G cell phones when compared to second-generation (2G) systems. The present contribution discusses the main issues involved in the design of SAW filters for 3G cell phones, with an emphasis on W-CDMA. The key point is that the need for miniaturization, higher operating frequencies and improved performance can only be met by a proper choice of material system, filter technique and package technology. In particular for the RF filters, it is essential to include in the simulation model a correct electrical description of the miniaturized package. State-of-the-art examples serve to illustrate these points.

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