

Elektrotechnik-Elektronik-Informationstechnik

EEI KOLLOQUIUM

Current Status and Future Trends of SiGe:C based Automotive Radar Sensors

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Diskussionsleitung: Prof. Dr.-Ing. R. Weigel

This presentation starts with a short review of state-of-the-art automotive radar MMIC and sensors in the 76-77 GHz frequency bands. A first monostatic SiGe:C based ACC sensor is presented and its unique features are discussed. The higher integration level of the SiGe:C based solution does also necessitate an increased effort for component verification due to the added complexity. Thus, built in test equipment (BITE) is important to increase test coverage of such complex mm-wave devices. BITE is also a key enabler to fulfill advanced automotive functional safety standards like ISO26262. Subsequently, the shortcomings of bare-die MMICs for mm-wave applications are addressed and a first packaged chip-set for 77 GHz automotive radar applications is presented. The talk is concluded with an outlook into possible developments enabling mm-wave MMICs for true mass-market applications.