Abstracts

Fully integrated automotive radar sensor with versatile resolution (Dec. 2001 [T-MTT])

C. Metz, J. Grubert, J. Heyen, A.F. Jacob, S. Janot, E. Lissel, G. Oberschmidt and L.C. Stange. "Fully integrated automotive radar sensor with versatile resolution (Dec. 2001 [T-MTT])." 2001 Transactions on Microwave Theory and Techniques 49.12 (Dec. 2001 [T-MTT] (Special Issue on 2001 International Microwave Symposium)): 2560-2566.

A planar radar sensor for automotive application is presented in this paper. The design comprises a fully integrated transceiver multichip module (MCM) and an electronically steerable microstrip patch array. The antenna feed network is based on a modified Rotman lens. An extended angular coverage, together with an adapted resolution, allows for the integration of automatic cruise control, precrash sensing, and cut-in detection within a single 77-GHz front-end. For ease of manufacturing, the interconnects between antenna and MCM rely on a mixed wire bond and flip-chip approach. The concept is validated by laboratory radar measurements.

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