Abstracts

Millimeter-wave radar sensor for automotive intelligent cruise control (ICC)

M.E. Russell, A. Crain, A. Curran, R.A. Campbell, C.A. Drubin and W.F. Miccioli. "Millimeter-wave radar sensor for automotive intelligent cruise control (ICC)." 1997 Transactions on Microwave Theory and Techniques 45.12 (Dec. 1997, Part II [T-MTT] (1997 Symposium Issue)): 2444-2453.

If automotive intelligent cruise-control (ICC) systems are to be successful in the marketplace, they must provide robust performance in a complex roadway environment. Inconveniences caused by reduced performance during inclement weather, interrupted performance due to dropped tracks, and annoying nuisance alarms will not be tolerated by the consumer, and would likely result in the rejection of this technology in the marketplace. An all-weather automotive millimeter-wave (MMW) radar sensor is described that uses a frequency-modulation coplanar-wave (FMCW) radar design capable of acquiring and tracking all obstacles in its field of view. Design tradeoffs are discussed and radar-sensor test results are presented along with the applicability of the radar to collision-warning systems.

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