Abstracts

Millimeter-Wave Technology Advances Since 1985 and Future Trends

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The availability of hybrid and monolithic millimeter-wave integration techniques has fostered the use of millimeterwave systems. Short-range radar and line-of-sight communication are the major application areas. Very stringent system requirements can be met using today's available hybrid technology. The finline technique, for example, has major advantages: almost all types of components can be realized, as a high level of integration and low-cost circuit design and development are combined. Even more important, the finline technique is suitable for small series production. An excellent example of this approach is the German AVES System, featuring a 60 GHz traffic monitoring sensor realized in finline technique. However, to the extent available, monolithic technology will be applied using analog GaAs circuits as well as SIMMWIC, a silicon-based technology. Specific applications demand tailored approaches. Sensors operating at 94 GHz for collision avoidance and intelligent ammunition applications from Philips Microwave, U.K., and Telefunken SystemTechnik, Germany, are described to demonstrate the maturity of today's millimeter-wave technology.

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