# Abstracts

## Low Cost and Compact Active Integrated Antenna Transceiver for System Applications (Oct. 1996, Part I [T-MTT])

*R.A. Flynt, L. Fan, J.A. Navarro and K. Chang. "Low Cost and Compact Active Integrated Antenna Transceiver for System Applications (Oct. 1996, Part I [T-MTT])." 1996 Transactions on Microwave Theory and Techniques 44.10 (Oct. 1996, Part I [T-MTT]): 1642-1649.*

Integrated and active antennas incorporate component functions directly at the antenna terminals thereby reducing the size, weight, and cost of many microwave systems. Active integrated antennas have been used for distributed oscillators in spatial and quasi-optical power combining arrays, but the concept can be extended to include such applications as Doppler sensors, radars, and wireless communications to produce compact, low-cost products. In this paper, we report that a field-effect transistor (FET) and a Schottky mixer diode have been integrated within an inverted patch antenna for transceiver applications. The position of the mixer diode on the patch was optimized to achieve a minimum conversion loss. Preliminary results exhibit a 5.5 dB isotropic mixer conversion loss at 6 GHz for a 200 MHz intermediate frequency. The FET serves as both the transmitter and the local oscillator at 5.8 GHz. A two-way communication system using these transceivers is proposed.

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