Abstracts

Single Chip Ka-Band Transceiver

J. Berenz, M. Lacon and M. Luong. "Single Chip Ka-Band Transceiver." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 517-520.

This paper presents the first monolithic single chip FM-CW radar transceiver operating at 40 GHz. The chip is the largest multifunction MMIC demonstrated operating at millimeter-wave frequencies. The design implements transmitter receiver, and duplexer functions using a single process InGaAs HEMT technology. The transmitter operates in the frequency range from 37 to 40 GHz and has greater than 12.0 dBm output power. The receiver converts the signals in the same frequency range to an IF frequency of 10 to 100 MHz with 0 dB conversion loss. When integrated with an antenna, the chip is a fully functional FM-CW radar which detects the doppler frequency shift from reflected objects. The paper will describe the design, fabrication, and performance of the chip.

❑ Return to main document.