Abstracts

A Single Chip 2-20 GHz T/R Module

M.J. Schindler, S.L. Chu, T.E. Kazior, A.M. Bertrand and K.M. Simon. "A Single Chip 2-20 GHz T/R Module." 1990 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 90.1 (1990 [MCS]): 99-102.

A single chip 2-20 GHz Transmit/Receive (T/R) module has been demonstrated. This MMIC includes a 4-stage power amplifier chain, a 4-stage low noise amplifier chain, and two T/R switches. A selective ion implantation process was used. One implant profile was optimized for low-noise operation, a second was optimized for power performance. All circuits were designed to be relatively insensitive to process variations to ensures adequate yield, despite the complexity of the chip. Distributed amplifiers are used throughout, and the T/R switches use a standard series-shunt FET configuration. All circuits have been miniaturized to keep the total chip size small. The entire T/R circuit measures only .143" x .193" (3.6 mm x 4.9 mm).

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