Abstracts

Octave S/C-Band MMIC T/R Modules for Multi-Function Phased Arrays

J.J. Komiak and A.K. Agrawal. "Octave S/C-Band MMIC T/R Modules for Multi-Function Phased Arrays." 1991 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 91.1 (1991 [MCS]): 35-38.

A complex wideband Transmit/ReceiveModule that has achieved performance levels superior to any MMIC module will be described. Performance across an octave 3.0 to 6.0 GHz band includes a power output of 21 Watts at S-Band and 19 at C-Band, a noise figure of 3.9 to 5.0 dB, 30 to 38 of receive gain, 25 to 26 dBm IP/sub 3/, 40 dB of gain control in 256 steps, dual receive channels with independent amplitude and phase control, and an bit phase shifter with less than 1 degree calibrated RMS phase error. Total GaAs area is 146 mm² with 170 mm of total gate periphery. The module incorporates a compact digital interface, requires only three supply voltages, and utilizes advanced packaging techniques, resulting in a size compatible with a grating lobe free grid spacing.

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