Abstracts

A Versatile Vector Modulator Design for MMIC

L.M. Devlin and B.J. Minnis. "A Versatile Vector Modulator Design for MMIC." 1990 MTT-S International Microwave Symposium Digest 90.1 (1990 Vol. I [MWSYM]): 519-522.

A single chip, MMIC vector modulator designed for use in an X band phased array radar system is described. The design principle is capable of addressing octave bandwidths and frequencies up into the mm wave region. The circuit is novel in that it is purely passive, using unpowered FETs as the control elements. It is therefore low noise and expected to be capable of handling relatively large RF signal levels of up to 1W. Analogue control of the vector extends over a range of more than 30 dB for amplitude and over 0-360 degrees for phase. Swept frequency, measured phase errors are lower than +/-10 deg for a 10% instantaneous bandwidth anywhere in X-band (8-12GHz).

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