Abstracts

Miniaturized Reverse Modulation Loop for a CQPSK 120-Mbit/s Modem

K.K. Ralston, R.K. Gupta, F.T. Assal and R.T. Kroll. "Miniaturized Reverse Modulation Loop for a CQPSK 120-Mbit/s Modem." 1991 MTT-S International Microwave Symposium Digest 91.3 (1991 Vol. III [MWSYM]): 1289-1292.

The design and performance of a miniaturized reverse modulation loop (RML) for carrier recovery in a 120-Mbit/s coherent quadrature phase shift keying (CQPSK) modem for on-board satellite applications are presented. The RML circuit, consisting of a modulator, demodulator, and comparator circuit, has been fabricated using quasi-monolithic techniques with dimensions of 1.65 x 4 cm. The relative phase for all four states of the modulator is in close agreement with design values of 90° ± 1° over a 200-MHz bandwidth at 3.95 GHz. The demodulator and comparator circuits of the RML have successfully recovered a 120-Mbit/s bit stream.

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