Abstracts

An L-Band MIC Front End for an IFF Receiver

R.J. Giannini, S. Anghel and R.L. Camisa. "An L-Band MIC Front End for an IFF Receiver." 1971 Transactions on Microwave Theory and Techniques 19.7 (Jul. 1971 [T-MTT] (Special Issue on Microwave Integrated Circuits)): 622-627.

A microwave integrated circuit (MIC) front end which satisfies stringent environmental and filtering requirements has been developed; the design objectives were based on the requirements typical of an L-band receiver for an identification friend or foe (IFF) transponder. The front end includes a preselector, a balanced mixer, and a multiplier for providing the local oscillator (LO) signal. A compact low-loss design has been achieved for the bandpass filter portion of the preselector through the use of "hairpin" resonators. Use of a semilumped 3-dB coupler has resulted in a significant reduction in the size of the mixer. The front-end noise figure was measured to be 10.4 dB at room temperature, with a maximum of 14.0 dB at 125°C. All spurious responses were measured to be more than 80 dB down, and LO reradiation was -67 dBm. Dynamic range was greater than 70 dB.

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