Advanced Monolithic X-Band GaAs MMIC Receiver - Design and Reliability Issues in Medium Scale Integration

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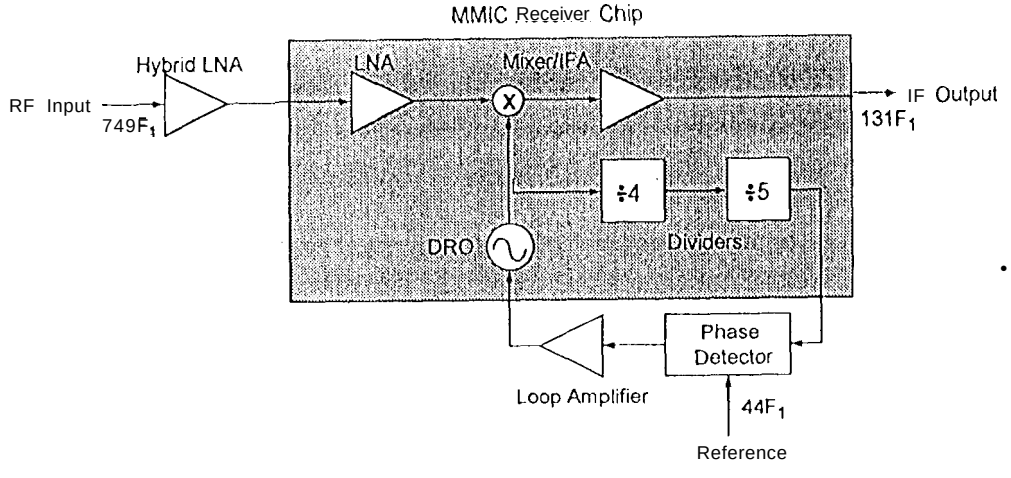
ABSTRACT

This article summarizes the design and reliability concepts applied in the development of a advanced monolithic MMIC receiver for the next generation of communications systems applications. The design incorporates a low noise amplifier, a mixer/IF amplifier, a voltage controlled dielectric resonator oscillator, and low noise frequency dividers into an advanced monolithic chip. The novel divide-by-four and divide-by-five divider circuits are integrated into the chip to provide phase locking capability to a low frequency reference signal. A unique annealing technique is utilized to improve the chip's reliability and performance. The performance of the receiver circuits will be presented.



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