Abstracts

A Low Noise Heterodyne 89 GHz MMIC Module for the Multifrequency Imaging Microwave Radiometer (MIMR)

U. Guttich, J.-M. Dieudonne, A. Klaassen, H. Sledzik, K.-E. Schmegner, U. Goebel and M. Boheim. "A Low Noise Heterodyne 89 GHz MMIC Module for the Multifrequency Imaging Microwave Radiometer (MIMR)." 1996 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 98. (1996 [MCS]): 145-148.

The contribution describes the topology of the heterodyne 89 GHz channel of the Multifrequency Imaging Microwave Radiometer (MIMR). Several components such as double sideband 89 GHz mixer, 44.5 GHz local oscillator, frequency doubler, and IF low noise amplifier are realized using monolithic millimeter- and microwave technology. Detector and band-defining low-pass filter are lumped element assemblies. The frontend concept yields a compact low power consuming module with a proposed overall noise figure of about 5.5 dB. A gain of 52 dB is expected between the 89.1 GHz ± 2.7 GHz RF input and the 0.1 GHz - 2.7 GHz IF output.

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