

Abstracts

The Aerospace Low-Noise Millimeter-Wave Spectral Line Receiver (Short Papers)

W.J. Wilson. "The Aerospace Low-Noise Millimeter-Wave Spectral Line Receiver (Short Papers)." 1977 Transactions on Microwave Theory and Techniques 25.4 (Apr. 1977 [T-MTT] (Special Issue on Low-Noise Technology)): 332-335.

A multichannel millimeter-wave receiver has been designed and built to study narrow-band signals from the natural background. This receiver is used with the Aerospace 4.6-m millimeter-wave antenna at El Segundo, CA. It is a superheterodyne mixer receiver which will tune over the 70-120-GHz frequency range with a system noise temperature of ~ 500 K (DSB). The spectral line receiver includes the RF system, the IF system, the local oscillator (LO) phase-locking system, the multichannel filter receivers, and the data processing system. This short paper describes the design and operation of the spectral line receiver and provides a sample of the results obtained.

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