Abstracts

Development and Testing of a Receiver at 230 GHz

M.V. Schneider and G.T. Wrixon. "Development and Testing of a Receiver at 230 GHz." 1974 S-MTT International Microwave Symposium Digest of Technical Papers 74.1 (1974 [MWSYM]): 120-122.

A superhetrodyne receiver operating at 230 GHz has been developed and tested. The hybrid mixer consists of a Schottky barrier diode in a rectangular waveguide and a stripline circuit whose performance was optimized using low frequency scaling techniques. Ultra-low capacitance, low-noise Schottky barrier diodes were developed for use in the mixer. The local oscillator signal is provided by a frequency doubler pumped by a 115 GHz klystron. The output of the doubler is coupled into the mixer using a cavity. The IF amplifier is a 1.4 GHz parametric amplifier with a noise figure of 0.8 dB. The total double sideband noise figure of the receiver is 13.4 dB corresponding to a noise temperature of 6000 K.

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