Abstracts

A Dual-Frequency 183/380 GHz Receiver for Airborne Applications

P.D. Batelaan, M.A. Frerking, T.B.H. Kuiper, H.M. Pickett, M.M. Schaefer, P. Zimmermann and N.C. Luhmann, Jr.. "A Dual-Frequency 183/380 GHz Receiver for Airborne Applications." 1988 Transactions on Microwave Theory and Techniques 36.4 (Apr. 1988 [T-MTT]): 694-700.

A complete dual-frequency cryogenic heterodyne receiver operating at 183 and 380 GHz is described. The cooled mixers are whisker-contacted GaAs Schottky diodes mounted in reduced height fundamental-mode waveguide. The local oscillators are Gunn-oscillator-driven multipliers using GaAs varactor diodes as the harmonic generators. Quasi-optical techniques are used extensively for coupling the remote and local oscillator signals into the mixers. The overall system temperature is 320 K DSB for the 183 GHz receiver and 650 K for the 380 GHz receiver.

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