

Abstracts

ASUR-An Airborne SIS Receiver for Atmospheric Measurements of Trace Gases at 625 to 760 GHz

J. Mees, S. Crewell, H. Nett, G. de Lange, H. Van De Stadt, J.J. Kuipers and R.A. Panhuyzen. "ASUR-An Airborne SIS Receiver for Atmospheric Measurements of Trace Gases at 625 to 760 GHz." 1995 *Transactions on Microwave Theory and Techniques* 43.11 (Nov. 1995 [T-MTT]): 2543-2548.

A heterodyne receiver making use of a SIS waveguide mixer with integrated horn and single backshort tuner has been built. It has been used for a series of airborne measurements of atmospheric trace gases, such as HCl and ClO, above northern Europe during the winter of 1993 and 1994. The receiver is suitable for measurements in the range of 625-760 GHz and shows stable operation in the airplane together with high sensitivity. Best achieved noise temperatures are $T_{\text{sub DSB}} = 310 \text{ K}$ at 708 GHz in the laboratory and $T_{\text{sub SSB}} = 1500 \text{ K}$ at 625 GHz for the complete system in the airplane.

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