Abstracts

A photomixer local oscillator for a 630-GHz heterodyne receiver

S. Verghese, E.K. Duerr, K.A. McIntosh, S.M. Duffy, S.D. Calawa, C.-Y.E. Tong, R. Kimberk and R. Blundell. "A photomixer local oscillator for a 630-GHz heterodyne receiver." 1999 Microwave and Guided Wave Letters 9.6 (Jun. 1999 [MGWL]): 245-247.

A photomixer local oscillator (LO) operating at the 630-GHz difference frequency of two laser diodes was successfully demonstrated with a heterodyne detector based on a niobium superconducting tunnel junction. The low-temperature-grown GaAs photomixer generated 0.20 /spl mu/W in the input spatial mode of the receiver. Using the photomixer LO, the double-sideband noise temperature of the receiver was 331 K-in good agreement with the 323 K noise temperature obtained when a multiplied Gunn oscillator generating 0.25 /spl mu/W was substituted for the photomixer.

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