Abstracts

A Submillimeter-Wave Planar Low Noise Schottky Receiver

W.Y. Ali-Ahmad, W.L. Bishop, T.W. Crowe and G.M. Rebeiz. "A Submillimeter-Wave Planar Low Noise Schottky Receiver." 1993 MTT-S International Microwave Symposium Digest 93.2 (1993 Vol. II [MWSYM]): 527-530.

A planar quasi-optical Schottky receiver based on the quasi-integrated horn antenna has been developed and tested over the 230-280GHz bandwidth. The receiver consists of a planar GaAs Schottky diode placed at the feed of a dipole-probe suspended on a thin dielectric membrane in an etched-pyramidal horn cavity. The antenna-mixer results in a measured DSB conversion loss and noise temperature at 258GHz of 7.2dB±0.5dB and 1310 K±70K, respectively, at room temperature. The low cost of fabrication and simplicity of the design makes it ideal for submillimeter-wave receivers requiring a 10% bandwidth.

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