

Abstracts

A 90 GHz Quasi-Integrated Horn Antenna Receiver

W.Y. Ali-Ahmad and G.M. Rebeiz. "A 90 GHz Quasi-Integrated Horn Antenna Receiver." 1992 MTT-S International Microwave Symposium Digest 92.3 (1992 Vol. III [MWSYM]): 1417-1420.

A receiver belonging to the family of integrated planar receivers has been developed at 90 GHz. It consists of a planar Schottky-diode placed at the feed of a dipole-probe suspended inside an integrated horn antenna. A machined section attached to the front of the etched horn increases the gain to 20dB and results in Gaussian coupling efficiency of 97%. The measured planar mixer single-sideband conversion loss at 91.2 GHz (LO) with a 200 MHz IF frequency is $8.3\text{dB}\pm0.3\text{dB}$. The low cost of fabrication and simplicity of this design makes it ideal for millimeter and submillimeter-wave receivers.

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