

Abstracts

A 75 GHz to 115 GHz Quasi-Optical Amplifier (Short Papers)

T.P. Budka, M.W. Trippe, S. Weinreb and G.M. Rebeiz. "A 75 GHz to 115 GHz Quasi-Optical Amplifier (Short Papers)." 1994 Transactions on Microwave Theory and Techniques 42.5 (May 1994 [T-MTT]): 899-901.

A wideband quasi-optical amplifier employing two pyramidal back-to-back horns has been developed. Using a four-stage W-band low noise amplifier (LNA) designed and fabricated by Martin Marietta Laboratories, the quasi-optical amplifier gives a system gain greater than 11 dB from 86 GHz to 113 GHz without any low frequency oscillations. A peak system gain of 15.5 dB is measured at 102 GHz, and the measured noise figure of the system is 7.4 dB at 94 GHz. The quasi-optical amplifier design maintains the same polarization of the received and transmitted signal, provides better than -40 dB isolation, and can be fabricated monolithically at millimeter-wave frequencies.

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