Abstracts

A W-Band Source Module Using MMICs

H. Wang, K.W. Chang, D. Smith, G.S. Dow, K.L. Tan, A. Oki and B.R. Allen. "A W-Band Source Module Using MMICs." 1994 MTT-S International Microwave Symposium Digest 94.1 (1994 Vol. I [MWSYM]): 91-94.

A W-band source module providing 4-GHz tuning band-width (92.5-96.5 GHz) has been developed. This module consists of three MMIC chips fabricated in TRW production lines, which are a 23.5 GHz HBT VCO, a 23.5 to 94 GHz HEMT frequency quadrupler and a W-band three-stage HEMT output amplifier. It exhibits a measured peak output power of 3 dBm at 94-95 GHz and a 3-dB tuning bandwidth greater than 3 GHz, with a phase noise of -90 dBc/Hz at 1 MHz offset. This work demonstrates a new and efficient way to implement high performance W-band source. Its wide tuning bandwidth with good phase noise performance, as well as design simplicity, makes this approach attractive for many W-band system applications.

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