Abstracts

Broadband spatially combined amplifier array using tapered slot transitions in waveguide

A. Alexanian and R.A. York. "Broadband spatially combined amplifier array using tapered slot transitions in waveguide." 1997 Microwave and Guided Wave Letters 7.2 (Feb. 1997 [MGWL]): 42-44.

Most reported spatially combined or quasioptical amplifier arrays exhibit resonant narrowband performance (<10%) and have not addressed thermal management issues. We report a waveguide-based spatial combining scheme using broadband tapered-slot transitions, capable of realizing full waveguide band coverage (40% fractional bandwidth) with good thermal properties. An X-band prototype using eight medium-power GaAs monolithic microwave integrated circuits (MMICs) produced an output power of 2.4 W and 9-dB power gain at 1-dB compression, with a combining efficiency of 68% and </spl plusmn/1-dB gain variation over the full waveguide band (8-12 GHz).

❑ Return to main document.