Abstracts

A 10 GHz Space Power Combiner with Parasitic Injection Locking

R.J. Dinger, D.J. White and D. Bowling. "A 10 GHz Space Power Combiner with Parasitic Injection Locking." 1986 MTT-S International Microwave Symposium Digest 86.1 (1986 [MWSYM]): 163-166.

An array of three microstrip patch antennas, each connected by a matching network to an IMPATT diode, has been investigated. Coherent radiation from the array was obtained at 10.23 GHz by feeding only the center element with an injectionlocking signal, which then appeared at the input to the other two elements by free space mutual coupling. The three IMPATTs injection locked successfully in this manner. A beamwidth of 38 degrees and sidelobe level of -10 dB were achieved, values consistent with the theory for coherent radiation from an array of this configuration. An RF efficiency of 90% and a bandwidth of 30 MHz were measured.

❑ Return to main document.