Abstracts

Results of Phase and Injection Locking of an Orotron Oscillator (Short Papers)

R.W. McMillan, D.M. Guillory, R.G. Hay, D.E. Wortman, H. Dropkin and J.M. Cotton, Jr.. "Results of Phase and Injection Locking of an Orotron Oscillator (Short Papers)." 1989 Transactions on Microwave Theory and Techniques 37.11 (Nov. 1989 [T-MTT]): 1828-1830.

We describe experiments resulting in phase and injection locking of a 60 GHz orotron oscillator in pulsed and CW modes. The measured phase-locked phase noise results obtained in CW mode were -85, -95, and -105 dBc/Hz at 1, 10, and 100 kHz separation from the carrier, respectively. The null depths and asymmetry of the first maxima of the pulsed spectrum for this source were 35 dB and 2 dB (difference between power levels of first maxima), respectively, operating with a pulse width of 15 µs. At 3 µs, these quantities become 25 dB and 1 dB, respectively. The orotron was observed to injection lock in pulsed mode with an input signal 22 dB below the output power level.

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