Abstracts

A UHF Solid-State Maser

R.H. Kingston. "A UHF Solid-State Maser." 1959 Transactions on Microwave Theory and Techniques 7.1 (Jan. 1959 [T-MTT]): 92-94.

Chromium doped potassium cobalticyanide has been utilized in the design and construction of a solid-state maser operating in the frequency range of 300 to 500 mc. The pumping frequency is fixed at 5400 mc and the magnetic field required is in the vicinity of 80 gauss. The design utilizes a cavity mode at the pumping frequency and a tuned loop at the operating frequency, thus avoiding the design complications associated with the large size of UHF cavities. System measurements using a directional coupler for isolation yield noise temperatures of approximately 70 degrees Kelvin at bandwidths in the 50 kc range.

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