Abstracts

X-Band Ladder-Line Traveling-Wave Maser

G.I. Haddad and J.E. Rowe. "X-Band Ladder-Line Traveling-Wave Maser." 1962 Transactions on Microwave Theory and Techniques 10.1 (Jan. 1962 [T-MTT]): 3-8.

An X-band ruby traveling-wave maser (TWM) has been constructed and tested in which the RF structure is a double-ridge ladder line and the signal is coupled into and out of the structure with coaxial lines. The pump power is propagated in a waveguide mode and the device is operated at and below liquid helium temperatures. A four-inch electromagnet was used. The TWM was operated at the push-pull point with a pump frequency of 24 Gc and a signal frequency of approximately 9.65 Gc; the magnetic field was 4.1 kilogauss. Electronic gains of 15 db have been obtained and bandwidths as high as 130 Mc were observed. Reduced structure losses and longer sections of ruby promise a G/sup 1/2/B of 1100 Mc (30 db over 35 Mc).

❑ Return to main document.