

coaxial cables. This change results in an overall noise temperature of 3.5 K for these devices, rather than the 10 K exhibited by earlier masers. The maser noise temperature now closely approximates sky temperatures, which set the ultimate limit on earthbound receiver sensitivity. The improvements to be had by further reduction in amplifier noise are therefore almost negligible. A less well known maser property, i.e., its freedom from distortion, even when driven well into gain saturation, is discussed.

4-gc Parametric Amplifier for Satellite Communication Ground Station Receiver, M. Uenohara, M. Chroney, K. M. Eisele, D. C. Hanson and A. I. Stillwell

This paper describes the design and performance of a 4-gc parametric amplifier which meets the stringent requirements of a satellite ground station receiver. It consists of two cascaded stages of similar design: the first of these is operated at liquid nitrogen temperature and the second at room temperature. One 23-gc pump source is used for both amplifier stages. The combination of the two amplifier stages provides 38-db overall gain, 45 K overall system input noise temperature, 60-mc bandwidth, 0.1-db short-term gain stability and 0.3-db long-term gain stability. A carefully designed cryogenic system maintains the amplifier refrigerated with only infrequent refilling of the dewar, i.e., once every 10 days.



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Positions Wanted

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Photographer-Writer. Experienced in setting up and directing industrial audiovisual department. Was Chief Photographer with leading Southwest company until recent merger. Desires position in Southern California. Telephone: (213) 243-2166.

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Writer-Director, Cameraman. Residing presently in Europe will accept assignment in any phase of foreign production. Thoroughly experienced and holds M.A. degree in Cinema from UCLA. Write Box 141, El Cerrito, Calif.

Laboratory Manager and Engineer, 27 years experience, government installations, Eastman Kodak, industry laboratory; operations, maintenance, control, equipment design and construction, new laboratory design and construction, experienced in many phases of motion-picture and still photography. For resumé write R. N. Jenkins, 2171 34th St. S.E., Washington, D.C. 20022.

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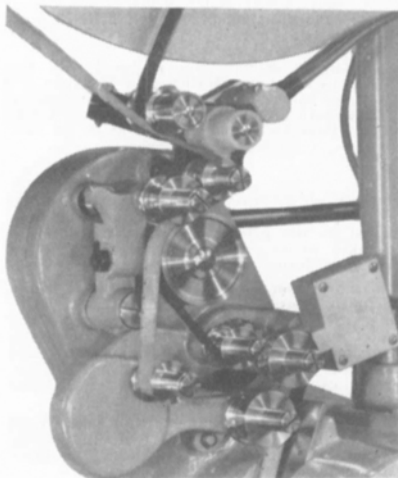
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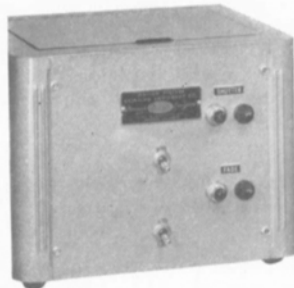
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