Abstracts

Cryogenic, HEMT, Low-Noise Receivers for 1.3 to 43 GHz Range

S. Weinreb, M.W. Pospieszalski and R. Norrod. "Cryogenic, HEMT, Low-Noise Receivers for 1.3 to 43 GHz Range." 1988 MTT-S International Microwave Symposium Digest 88.2 (1988 Vol. II [MWSYM]): 945-948.

This paper describes the construction and performance of a number of receivers built for radio astronomy applications using very low-noise, high-electronmobility transistor (HEMT) amplifiers and small, closed-cycle 13 K refrigerators. The noise temperatures of receivers, measured at the room temperature circular waveguide input, are the best ever reported for receivers built with semiconductor devices (for example, 10.5 K at 8.4 GHz) and are only slightly inferior to that of solid-state maser receivers.

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