

Cryogenically-Cooled, HFET Amplifiers and Receivers: State-of-the-Art and Future Trends

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Recent progress in the development of ultra-low-noise, cryogenically-coolable, HFET (hetero-structure field-effect transistor) amplifiers and receivers for radio astronomy applications is reported. Examples of state-of-the-art receivers at frequencies from L- to Q-band are discussed. A model-based prediction of future performance demonstrates that HFET receivers should soon be competitive with SIS mixer receivers at W-band frequencies.

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