

Session O

Millimeter Wave Amplifier and Receiver Technology

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Advances in millimeter wave amplifier and receiver technology have made significant progress leading to low-noise reception and efficient power generation to 330 GHz. GaAS and InP based HEMTS with 0.1 μ m gate lengths have led to ultra low noise reception. Noise figures achieved include 1.3 dB at 35 GHz to 5.0 dB at 94 GHz with cryogenic noise temperature results of 20 degrees C at 33–50 GHz. Receiving technology using a low noise integrated antenna/mixer circuit on high resistivity silicon has led to 7 dB DSB conversion loss at 250 GHz.

In the power area, an output power of 0.6 W was achieved at 47 GHz in a MMIC MESFET three stage amplifier; at 59 GHz, an InP heterostructure delivered 288 mw. By using multiquantum well IMPATT structures, GaAs/AlGaAs oscillation operation has been extended to 100 GHz.

8:30 a.m.–10:00 a.m., Wednesday, June 16, 1993
Room 216/217

