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SIGNAL DISTRIBUTION FET APPLICATIONS

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Session Abstract: This session consists of 5 papers. Switches, harmonic reaction amplifiers and circulators using GaAs FETs are described. The first paper describes a planar semi-insulated FET (SIGFET) using a shallow region formed by ion-implantation with low energy boron. Higher gate-to drain breakdown voltage and pinch-off voltage are achieved which allows this FET to be used as a higher power switch. A series of broadband (DC-20 GHz) single stage 1×2, and 1×4, a two stage 2×2 and a four stage 4×4 bidirectional monolithic switches are presentd in the second paper. The third paper describes a 5W harmonic reaction amplifier operating at 2 GHz with 70% power added efficiency. The last two papers present active circulators using GaAs FETs. A 6-port active circulator using a combination of distributed amplifiers and 3-dB Lange couplers is described. The last paper of this session presents a 2 GHz GaAs monolithic circulator with 18 dB isolation. This circulator has 6 dB loss and draws 20–25 mA.

2:00 pm–3:30 pm, May 27, 1988
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Room 2