

Abstracts

Advances in Gallium Arsenide Monolithic Microwave Integrated-Circuit Technology for Space Communications Systems

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Future communications satellites are likely to use gallium arsenide (GaAs) monolithic microwave integrated-circuit (MMIC) technology in most, if not all, communications payload subsystems. Multiple- scanning beam antenna systems are expected to use GaAs MMIC's to increase functional capability, to reduce volume, weight, and cost, and to greatly improve system reliability. RF and IF matrix switch technology based on GaAs MMIC's is also being developed for these reasons. MMIC technology, including gigabit-rate GaAs digital integrated circuits, offers substantial advantages in power consumption and weight over silicon technologies for high-throughput, on-board baseband processor systems. In this paper, current developments in GaAs MMIC technology are described, and the status and prospects of the technology are assessed.

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