

Abstracts

A Microwave Switch Matrix Using MMICs for Satellite Applications

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This paper presents the design, packaging, and measured performance of a lightweight crossbar 4 x 4 Microwave Switch Matrix (MSM) for communications satellite applications. Miniaturization of the MSM has been achieved by integrating GaAs monolithic (MMIC) broadband switch elements with hybrid power dividers and combiners and driver/control circuits in a lightweight MSM package. The on-state insertion loss and on-to-off isolation for all MSM paths are measured to be 6.25 dB (maximum) and 50 dB (minimum), respectively, over 3.5- to 6.5-GHz frequency range. The corresponding path-to-path insertion loss and phase variations are within ± 0.5 dB and $\pm 10^\circ$.

[Return to main document.](#)