Abstracts

A 50 GHz GaAs FET MIC Transmitter/Receiver Using Hermetic Miniature Probe Transitions

K. Ogawa, T. Ishizaki, K. Hashimoto, M. Sakakura and T. Uwano. "A 50 GHz GaAs FET MIC Transmitter/Receiver Using Hermetic Miniature Probe Transitions." 1989 Transactions on Microwave Theory and Techniques 37.9 (Sep. 1989 [T-MTT] (Special Issue on FET Structures Modeling and Circuit Applications)): 1434-1441.

A very compact 50 GHz band transmitter/receiver for a video link has been developed. The RF assemblies in the system consist of 25/50 GHz frequency doublers, a 25 GHz DRO, and a 25 GHz FM modulator. The circuits make extensive use of MIC technology where the active elements used are all GaAs FET's. GaAs FET frequency doublers exhibited a minimum conversion loss of 2.6 dB, a maximum output power of 11 dBm. A 25 GHz FM modulator which was highly frequency stabilized by a dielectric resonator was obtained. Newly developed miniature probe microstrip-to-waveguide transitions permit the MIC assemblies to be installed compactly in hermetically sealed packages. Design considerations and experimental results of the transition are presented. With these technologies, a transmitting power of 10 dBm and a receiver noise figure of 13 dB were obtained.

❑ Return to main document.