Abstracts

New Millimeter Wave Noise Sources with High Reliability

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Two new highly reliable broadband millimeter wave noise sources have been developed. One operates from 26.5 to 40 GHz, R-band, and the other from 33 to 50 GHz, Q-band. The R-band source has an excess noise ratio of 12.1±0.4 dB with a reflection coefficient of less than .11 when turned on. The Q-band source has an excess noise ratio of 10±1.8 dB with a reflection coefficient of less than .16 when turned on. A new GaAs avalanche diode specifically designed for high noise output and long term reliability was developed for the noise source. The diode with its embedding structure will be described. Reliability data as well as noise measurement techniques and examples will also be presented.

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