Abstracts

Some Pitfalls in Millimeter-Wave Noise Measurements Utilizing a Cross-Correlation Receiver (Comments)

H.J. Siweris, B. Schiek and K.M. Ludeke. "Some Pitfalls in Millimeter-Wave Noise Measurements Utilizing a Cross-Correlation Receiver (Comments)." 1983 Transactions on Microwave Theory and Techniques 31.4 (Apr. 1983 [T-MTT]): 364-364.

In the above paper, 1 Sutherland and van der Ziel analyze some problems encountered during noise measurements at very low temperatures with a cross-correlation receiver. It is shown that, if a hybrid junction is used to split the noise signal from the device under test (DUT) into the two receiver channels, the correlation between the receiver input signals, which contains the useful information, vanishes if the remaining port of the hybrid is resistively terminated at a temperature equal to that of the DUT. The same effect occurs for a pure reactive termination, if the isolators used to decouple the receiver channels are also cooled down to the temperature of the DUT.

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