Abstracts

Optimum noise-source reflection-coefficient design with feedback amplifiers

The issue of designing a low-noise microwave feedback amplifier for a given optimum noise-source coefficient Γ_{Sopt} is addressed and a set of original formulas is presented. These expressions define a new procedure which does not rely on computer optimization in order to get the required noise performance of the low-noise amplifier stage. The technique permits the design of a circuit which is simultaneously noise and power matched at its input port without an input matching circuit. This method can be used to screen devices for an optimum noise performance and it provides the essential mathematical tool for designing the core of a feedback amplifier.

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