Abstracts

SIS Mixer to HEMT Amplifier Optimum Coupling Network (Short Papers)

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The coupling network between a superconductor-insulator-superconductor (SIS) mixer and a high-electron-mobility-transistor (HEMT) amplifier is investigated from the point of view of minimizing the overall noise temperature and also increasing the saturation level of the mixer. The effect of a negative output impedance of the mixer upon the amplifier noise is considered and an optimum negative source resistance is found. The amplifier noise at this optimum negative source resistance is shown to be related to the noise wave coming out of the amplifier input terminals. Key words: SIS, HEMT, low-noise, negative resistance.

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