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(54) **LOW NOISE AMPLIFIER TOPOLOGY**

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(57) **ABSTRACT**

A low noise amplifier topology can achieve very low noise figure by applying multiple magnetic coupling between gate matching inductors and source degeneration inductor of a field effect transistor. The resulting low noise amplifier has smaller inductors, which can have lower thermal noise contribution, and can maintain good gain and linearity performance. For example, a low noise amplifier includes a first inductor to receive an input; a second inductor coupled to the first inductor in series; a first field effect transistor device whose gate receives a signal from the second inductor; and a third inductor coupled to a source of the first field effect transistor device, where the third inductor is magnetically positively coupled to the first inductor and the second inductor.