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(54) **MULTI-INPUT LNA WITH PASSIVE BYPASS GAIN MODES**

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(57) **ABSTRACT**

New multi-input LNA architectures with improved passive mode negative gain performance that reconfigure the bypass path routes to achieve wide-band bypass matching and make bypass matching for lower frequency bands possible to achieve desired gain specifications. In a first embodiment, improved wide-band performance is provided by a bypass path that optionally does not pass through an impedance matching network and thus has a dedicated path to RF_{OUT}. In a second embodiment, improved wide-band performance is provided by a bypass path that does not pass through an input inductor. In a third embodiment, improved wide-band performance is provided by a bypass path that has a first portion that optionally does not pass through an impedance matching network, and a second portion that does not pass through an input inductor. In a fourth embodiment, improved wide-band performance is provided by selectively disabling a load inductor in some modes of operation.