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(54) **PHASE-LOCKED LOOP**

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(57) **ABSTRACT**

A phase-locked loop comprises a voltage controlled oscillator. The voltage controlled oscillator comprises an inductor and a capacitor, connected in parallel, and also connected in parallel therewith, a negative resistance structure. A first terminal of the negative resistance structure is connected to respective first terminals of the inductor and the capacitor. A second terminal of the negative resistance structure is connected to respective second terminals of the inductor and the capacitor. The negative resistance structure exhibits a tunable capacitance, such that a frequency of an output of the voltage controlled oscillator can be tuned by a control input signal, and the control input signal is generated in the phase-locked loop. The negative resistance structure comprises first and second transistors.

