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(54) **PHASE ESTIMATION FOR HIGH FREQUENCY SIGNALS**

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(57) **ABSTRACT**

A first 1:N frequency divider has an input configured to be coupled to one of two signals and a second 1:N frequency divider has an input configured to be coupled to another of the two signals. A mixer includes two inputs, where each input is coupled to an output of one of the first and second 1:N frequency dividers. A low-pass filter has an input coupled to an output of the mixer and an analog-to-digital converter (ADC) has an input coupled to an output of the low-pass filter. A data collection and analysis block repeatedly changes a phase of an output of the first 1:N divider, collects a set of digitized data generated by the ADC, and estimates the phase difference between the two signals based on the set of digitized data.