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Introduction

A quiet, well regulated supply is important for optimum performance with a number of circuit applications. Voltage controlled oscillators (VCOs) and precision voltage controlled crystal oscillators (VCXOs) respond to small changes in their supply very quickly. Phase-locked loops (PLLs) require a stable supply as signal on the supply translates directly to phase noise in the output. RF amplifiers require quiet supplies as they have little to no ability to reject supply variations and regulator variation will appear as unwanted side bands and lower the signal-tonoise ratio. Low noise amplifiers and analog-to-digital converters (ADCs) do not have infinite supply rejection and the cleaner the regulator output is, the higher their performance. These are just a few applications where linear regulators are required to provide quiet power supply rails, but how does one ensure that the regulator is performing as advertised?