

# Comparative Analysis for LED Driver with Analog and Digital Controllers

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## **Abstract:**

The trend of utilizing light emitting diodes (LEDs) in a number of applications has attracted the attention of many researchers, to study its applications. This article investigates the performance analysis of the dc-dc converter systems based on analog and digital controllers for a low voltage dc-dc buck converter, to drive strings of LEDs at different conditions, to judge system's robust performances. This particular converter comprises of a single controller, working with a voltage control feedback system, in a continuous conduction mode. The analog and digital type- 3 controllers are designed for the said system while using standard frequency response techniques. Simulations are shown to validate the design and the response of these controllers under various dynamic load conditions.

**Keywords** - Buck Converter; Controller, DC-DC Converter