

Development of a 20v-led driver based on the boost converter using a fpga module

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Abstrak

We present the development of a LED (Light Emitting Diode) driver based on the boost power converter. Several DC to DC converter circuits were evaluated to determine their characteristics by varying the components and the duty cycle. The selected driver's prototype was realized using a FPGA (Field Programmable Gate Array) module as the switching controller, wherein the implementation using Xilinx ISE14.6 and the measurements were successfully performed. The boost converter topology was investigated to achieve an optimal converter which showed a relatively high gain voltage. A duty cycle of 5% up to 20% was required to obtain the driver output voltage of 20V, revealing the efficiency of approximately 90%.