A 1.8V Single–Inductor Dual–Output Switching Converter for Power Reduction Techniques

Dongsheng Ma, Wing-Hung Ki, Chi-Ying Tsui, Philip K.T. Mok

Integrated Power Electronics Laboratory
Department of Electrical and Electronic Engineering
The Hong Kong University of Science and Technology
Clear Water Bay, Hong Kong SAR, China

Abstract

A 1.8V integrated single-inductor dual-output boost converter is presented. It adopts time-multiplexing control in providing two independent supply voltages using only one 1μH off–chip inductor and is fabricated with a 0.5μm CMOS n–well process. At an oscillator frequency of 1MHz, the conversion efficiency reaches 88% at a total output power of 350mW. The topology could easily be extended to give multiple outputs.