

Analysis of variable pulse generator by using LMC555CM and LM741

Abstract

A pulse generator is an electric circuit that can be used to generate rectangular or square waves. It can be used for many applications. The objectives of the study were to design and compare two pulse generators with a flexible control over the pulse's characteristics like the frequency, duty cycle and amplitude using the LMC555CM timer and LM741 as a switch. The pulse generators were constructed using electrical components to determine all the pulse wave parameters. The pulse generators that consist of the switch and the joule thief block were tested on its ability to get the required pulse parameters. Results indicated that the switch block had the variability in frequency control but the duty cycle was not completely independent. The pulse generators; both LMC555CM and LM741 that were connected to the joule thief were able to produce rectangular pulses with higher voltage but did not demonstrate variability in frequency and duty cycle.