One Shot Generator

Vault Folder: One-Shot Generator

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# System Overview

This circuit creates an output pulse that happens exactly at the half-point of the input pulse with the possibility of some fine tuning using push-buttons. This eliminates manually setting a delay.

# Hardware Development

The circuit is made up of three parts:    
1) An input detector (a comparator that compares the input to 3.3V/2)  
2) An FPGA that   
   a) measures T = the length of time the output of the comparator is high (in units of 5 nS)  
   b) generates an output pulse T/2 ns after the output of the comparator goes high  
3) Two push-buttons that allows an adjustment to the T/2 delay (in steps of +/- 5 nS) of the output

*Schematic, Printed Circuit Board, BOM*

See project file.

# Assembly, Test, and Calibration

No special requirements or notes.