

Verifying the Accuracy of sleep() and usleep()

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May 3, 2016

Objectives

Using the ZYBO Private Timer & DSO:

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- Verify the accuracy of both functions

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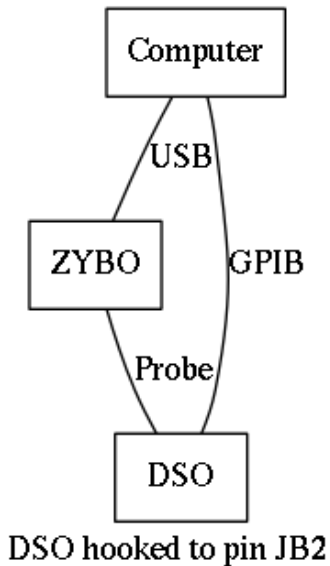
- Verify the accuracy of both functions
- Compare accuracy of the private timer and DSO

Objectives

Using the ZYBO Private Timer & DSO:

- Verify the accuracy of both functions
- Compare accuracy of the private timer and DSO
- Determine delay to set a pin high/low

Functional Block Diagram



Functionality

- User inputs value in C#
- C# sends value to the ZYBO

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- ZYBO uses this value as the sleep time
- ZYBO starts private timer, sets JB2 high, and sleeps
- DSO collects its data

Functionality

- User inputs value in C#
- C# sends value to the ZYBO
- ZYBO uses this value as the sleep time
- ZYBO starts private timer, sets JB2 high, and sleeps
- DSO collects its data
- Once finished, the ZYBO sends sleep value to C#
- C# reads all data off the DSO
- C# finds all data that is high

20 Total Tests

- 10 tests per function
- Values per test range from low to high
- 10 data points per test

Data for Private Timer

Time	Average Measured	Standard Deviation	Percent Error
1			
2			
3	3.000000455		
5			
7			
10			
13			
20			
30			
40	13.215283980		

Note: Time, Average Measured, and Standard Deviation are in seconds

Data for DSO

Conclusion