



An Industry-Standard Benchmark Consortium

AutoBench™ Version 1.1

Benchmark Name: Road Speed Calculation

Benchmark Description

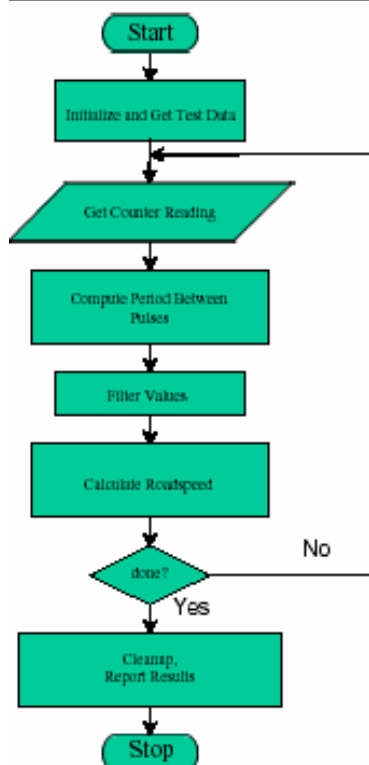
This EEMBC benchmark simulates an automotive application where the CPU repeatedly calculates the road speed based on differences between timer counter values. All values are filtered to minimize errors due to noise. The calculation involves straight-forward arithmetic, but must also deal with the situation when the timer counter rolls over; or when the measurement results show abrupt changes. At zero road speed, the application has to ensure that it does not infinitely wait for a counter increment.

The benchmark has a mix of arithmetic and flow control routines. The arithmetic portion involves add, subtract, multiply and divide. For low end microcontrollers, the arithmetic capability may become a performance bottleneck. For higher end processors, the pipeline efficiency may be more important than raw performance since there are a significant number of compare and branch instructions (i.e. flow control). A processor that is good in both aspects will shine with this kind of benchmark.

Optimization Rules

Category	Allowed	Disallowed
ANSI C	X	
Intrinsics/Language Extensions	X	
Custom Libraries	X	
Assembly Language	X	
HW Accelerators	X	

Algorithm Flowchart





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