<http://playground.arduino.cc/code/timer1>

:: Timer1 ::

This library is a collection of routines for configuring the 16 bit hardware timer called Timer1 on the ATmega168/328. There are 3 hardware timers available on the chip, and they can be configured in a variety of ways to achieve different functionality. The development of this library began with the need for a way to quickly and easily set the PWM period or frequency, but has grown to include timer overflow interrupt handling and other features. It could easily be expanded upon or ported to work with the other timers.

The accuracy of the timer depends on your processor speed and the frequency. Timer1's clock speed is defined by setting the prescaler, or divisor. This prescale can be set to 1, 8, 64, 256 or 1024.

For 16MHz:

|  |  |  |
| --- | --- | --- |
| Prescale | Time per counter tick | Max Period |
| 1 | 0.0625 uS | 8.192 mS |
| 8 | 0.5 uS | 65.536 mS |
| 64 | 4 uS | 524.288 mS |
| 256 | 16 uS | 2097.152 mS |
| 1024 | 64uS | 8388.608mS |

In general:

* Max Period = (Prescale)\*(1/Frequency)\*(2^17)
* Time per Tick = (Prescale)\*(1/Frequency)

License: GPLv2.0  
Download -> [TimerOne Google Code download](http://code.google.com/p/arduino-timerone/downloads/list)

To install, simply unzip and put the files in Arduino/hardware/libraries/Timer1/

[A separately maintained and updated copy of TimerOne](https://github.com/PaulStoffregen/TimerOne) is also available, supporting more hardware and with optimizations for more efficient code.