

# Minimum stepper pulse option

**Feature Name:** Minimum Stepper Pulse Option

**Feature Name in Annotation:** MINIMUM\_STEPPER\_PULSE

## Source of Information

Releaselog, pull requests, commits

## Strategy Used:

Feature is identified from the latest release log first. The release log also provides the pull request and commits linked to the feature (see the links and tables below).

**Feature Release Version:** 1.1.0 – RC8

**Time took to Identify and Locate the feature:** 0.1 hour

**Time took to Understand the Implementation:** 0.25 hour

## Feature Description:

How long are the stepper pulses in the stepper ISR? It's based entirely on the number of CPU cycles used by the code in-between starting and stopping the pulses to all the steppers. The time varies greatly, depending on how many steppers are being moved, on whether ADVANCE is in-use, and so on.

This PR proposes a simple solution to enforce a minimum pulse time, by using the 16MHz or 20MHz TCNT0 timer. Using this method ensures an absolute minimum, with only a little bit of variance due to compare, branch, and adding operations.

## Feature Information and Statistics:

PR No.	Merged Time	PR	Commits	Files	Line Added	Line deleted
#4722	28 Aug 2016	MINIMUM_STEPPER_PULSE option	1	1	97	15

## Ratios of sources (%)

RL	PR	CM	Ifdef	DK	CC	SC	GD
50	25	25	0	0	0	0	0

**RL:** Release Log; **PR:** Pull Request; **CM:** Commit; **Ifdef:** Ifdef Expression; **DK:** Domain Knowledge; **CC:** Code Comment; **SC:** Source Code; **GD:** G-Code Documentation.

**Pull Request Links:** <https://github.com/MarlinFirmware/Marlin/pull/4722>

**Feature Characteristics:**

Feature Name	LoFC	SD	TD	Completely Wrapped by ifdef
Minimum Stepper Pulse Option	6	1	0	No

**Feature's Relevant Historical Data**

Other related feature request: Patch stepper.cpp to allow omitting steppers

<https://github.com/MarlinFirmware/Marlin/pull/4720> (28 Aug 2016 )