



HÁSKÓLINN Í REYKJAVÍK
REYKJAVÍK UNIVERSITY

ENGINEERING DEPARTMENT

EMBEDDED SYSTEM PROGRAMMING
T-738-EMBE

Assignment 2.1

Bjarki Laxdal
Email: Bjarki18 AT ru.is
Phone: 843-9292

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1 Part 1

- **What is the maximum length of the timer interval that the driver supports in this implementation?**
 - to ensure the OCR1A register does not exceed 65536, the period_ms must not exceed: $\text{period_ms} * (16000.0/1024 - 1) = 65536 \Rightarrow 65537/(1600/1024) = 4194\text{ms}$

2 Part 2

- **At what timer frequency does the LED appear to change from blinking to a stable intensity?**
 - at 100ms I can still clearly see blinking, at 50ms I can see some blinking, at 40ms I can barely see some blinking but still see it a little bit, at 30ms I can't see any blinking and the light appears stable.

3 Part 3

- **How does the intensity of the LED vary when you change the duty cycle?**
 - When the timer frequency is set to 30ms (when the light is stable) a change in the duty cycle results in the led changing its light intensity i.e. the light is brighter at a higher duty cycle, and the light is dim at a lower duty cycle