

Bike Light Specification Document

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A bike light is a simple device that provides different light patterns on a button press.

Inputs

1. A button that outputs a high signal when pressed and a low signal when pressed.

Outputs

1. An LED that lights up when a high signal is passed to it and is not lit otherwise.

Operation

The bike light has four modes: on, off, dim, and blink. Dimming is achieved with a 75% duty cycle PWM signal as shown in Fig. 1. The modes of the bike light can be toggled between with a single button press in the order shown in Fig. 2.

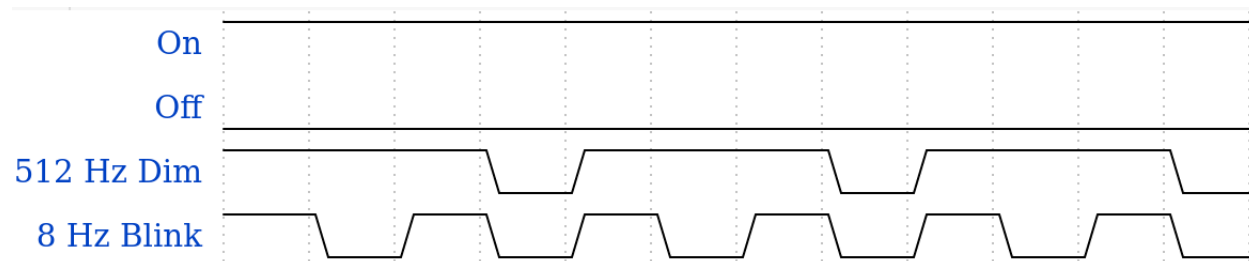


Figure 1: The signals of the four operating modes of the bike light (not to scale).

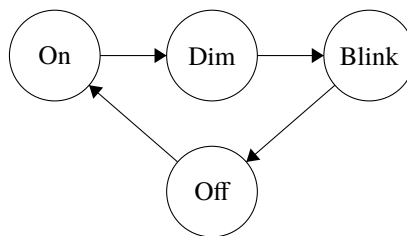


Figure 2: Finite state diagram for the bike light. Transitions between states happen when the button is pressed once.