

Lesson 2-7 PWM

Hi. I'm Alan Hawse. Welcome back to Cypress Academy. This is WICED WiFi 101. This time, we are going to use one of the PWMs built into the chip to vary the brightness of an LED.

First let's copy 02_blinkled to a new project called 09_pwm and then update all the files as necessary.

Each of the six PWMs on the chip can be multiplexed to one of many pins. This can be found in the platform.c file. To change a mux connection, we just have change the pin name in the platform_pwm_peripherals array. The possible connections are shown in the comments next to each PWM.

In our case, we want to drive WICED_LED1 on the board with a PWM. From platform.h we can see that WICED_LED1 connects to WICED_GPIO_16. Then, from platform.c we can see that WICED_GPIO_16 is also called PIN_PWM_3.

To select the correct mux connection, we change WICED_PWM_4 to connect to PIN_PWM_3 instead of PIN_GPIO_15.

In the code we need to de-init the GPIO that is driving the LED so that WICED_PWM_4 will be able to control the pin instead. This is necessary because the platform.c file initializes the GPIO that the LED is connected to.

Then, we just initialize WICED_PWM_4 and start it. We can modify the duty cycle and then just re-initialize and re-start the PWM each time through the loop.

Program the project to the kit and you will see that the LED intensity will gradually change over time as the duty cycle is changed.

Note that in the solution projects provided, the pin selected for the PWM and for the GPIO deinitialization command are for an LED that's on the shield board rather than the base board. If you are not using the shield board, then use the PWM and GPIO numbers as shown earlier in this video.

In the next video, I'll show you how to use the I2C interface.

You can post your comments and questions in our WiFi developer forum on cypress.com, or, as always, you are welcome to email me at alan_hawse@cypress.com or tweet me at [@askiotexpert](https://twitter.com/askiotexpert). Thank you.