TDA 3 PWM Output

How the PWM output is controlled

The general step of configuring a pin as a PWM output contains the following:

1. Setting a pin as PWM configuration.
2. Setting the PWM period.
3. Setting the PWM duty cycle.

For programming in MBED platform, the class `PwmOut` is used, which includes everything needed for the above setup. The first step is done by creating an object in `PwmOut` type with the pin name. The second step is done using `PwmOut::period(float period)`, which sets the period automatically. The third step is done using `PwmOut::write(float dutyCycle)`, which sets the duty cycle of the PWM output.

Connections and wiring of the PWM test

This section shows the connections of the test, and the oscilloscope results for both outputs. For clearer demonstration, two potentiometers are added to control the PWM duty cycle (left pot) and PWM frequency (right pot).

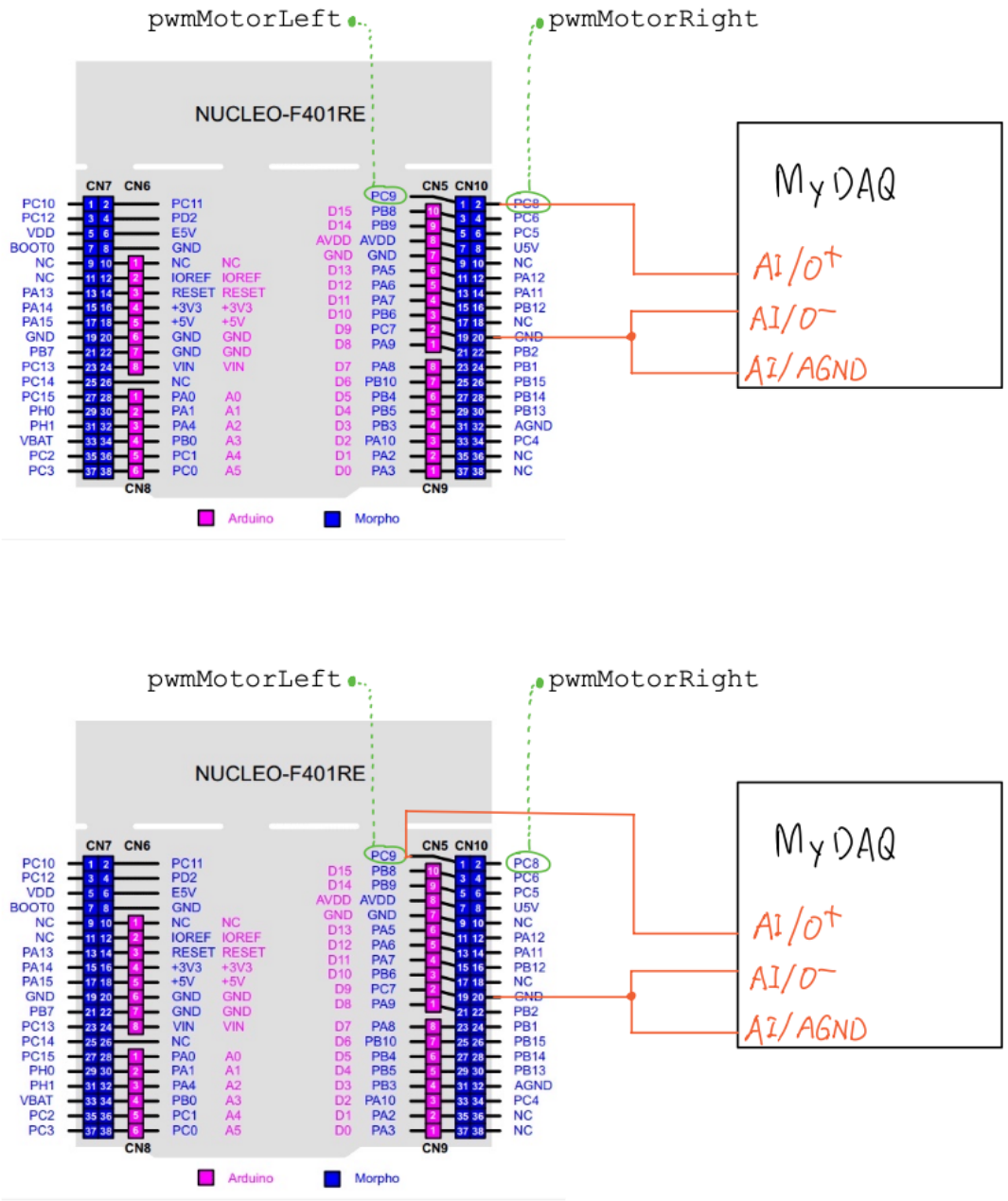

Figure 1. Connections between the microcontroller and MyDAQ

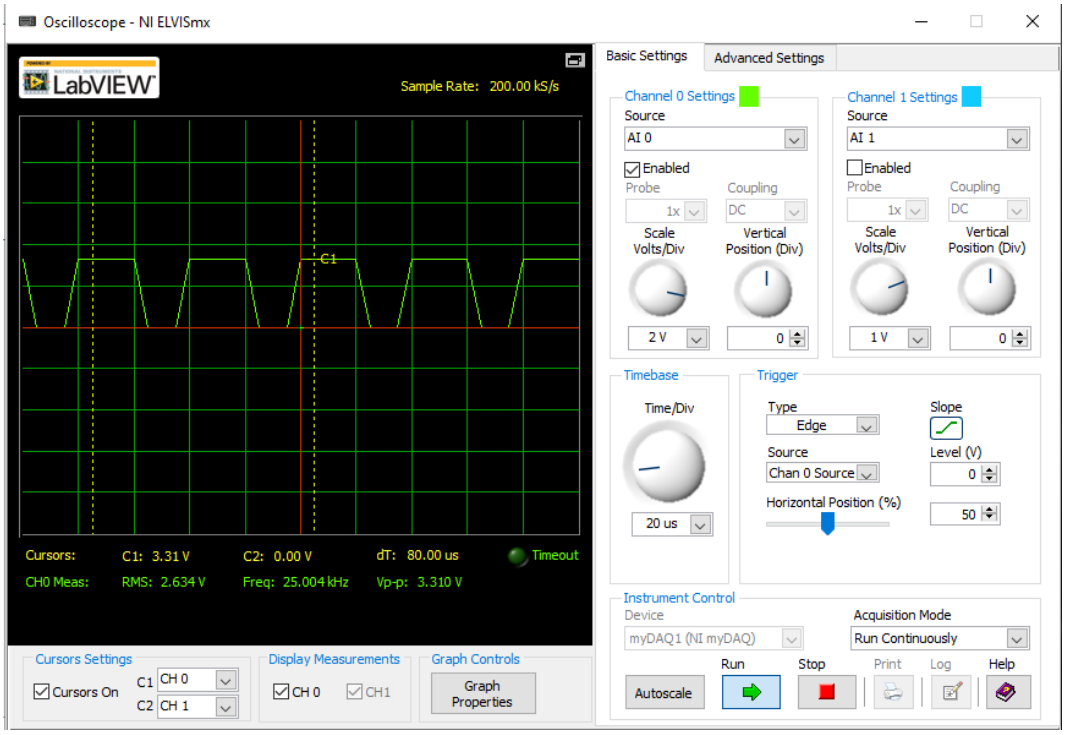

Figure 2. The oscilloscope result of PC9 PWM output at 25 kHz, 60% duty cycle, 3.3 V max.

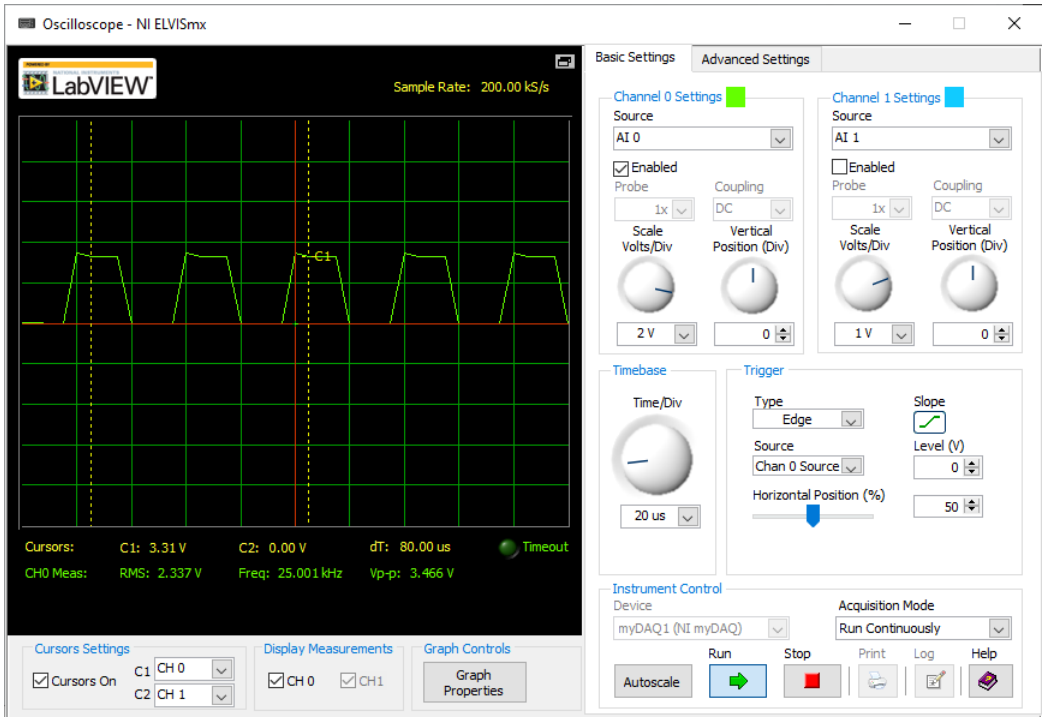

Figure 3. The oscilloscope result of PC8 PWM output at 25 kHz, 40% duty cycle, 3.3 V max.

Code framework

1. Setting a pin as PWM configuration.
2. Setting the PWM period.
3. Setting the PWM duty cycle.