# Etileno PWM V1

CH2=CH2

This is a regulated voltage board for use with personal vaporizers. It switches a N channel MOSFET via Pulse Width Modulation and uses an analog potentiometer to adjust the RMS Voltage and Duty Cycle. The onboard bicolor led indicator brings all the information to the user regarding safeties and functions. This board is designed to manage 40A in a 2s to 4s configuration. With a size of 14mm x 25mm is one of the smallest boards in the market
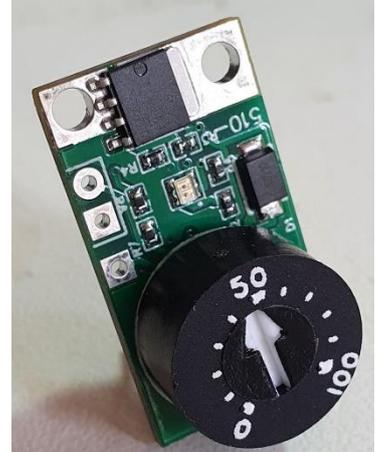
*Potentiometer not included

Wiring Diagram
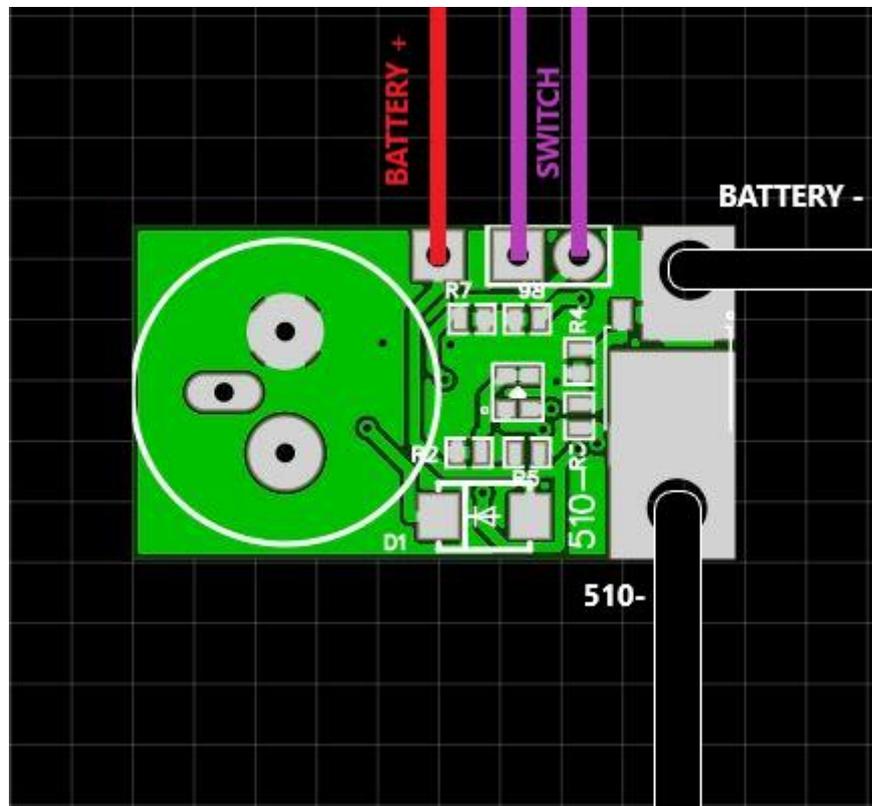
Input voltage detection

On boot, the board senses how many cells are connected to, and the onboard led blinks green the number of times as cells are connected (2s/3s/4s)

Please always check that the number of cells detected is correct

Adjusting the output voltage

The board boots in Duty Cycle Auto Adjustment mode as default. The output RSM Voltage can be adjusted from 0V to the maximum voltage according to the number of cells connected:

Cells   Vrsm Max.

2s   8.4 Vrsm

3s   12.6 Vrsm

4s   14.8 Vrsm

Select your desired output RSM Voltage with the potentiometer as a percentual of Vrsm Max

Board will auto adjust duty cycle to maintain the desired voltage as long as the battery charge is above that voltage. If battery charge drops below the selected voltage, the voltage output will be the voltage of the battery

Manual Duty Cycle Adjustment

Pressing the fire switch 7 times, led will blink red and board will enter in Manual Mode

In this mode, the voltage adjustment will change from RSM voltage to Duty Cycle. Board will stop calculate the duty cycle adjustment required to maintain the voltage selected and you must manually adjust the potentiometer according to the battery charge in order to reach your output voltage desired

Please take in account that Duty Cycle is not linear regarding RMS Voltage

A chart as example of difference between Duty Cycle and Vrsm
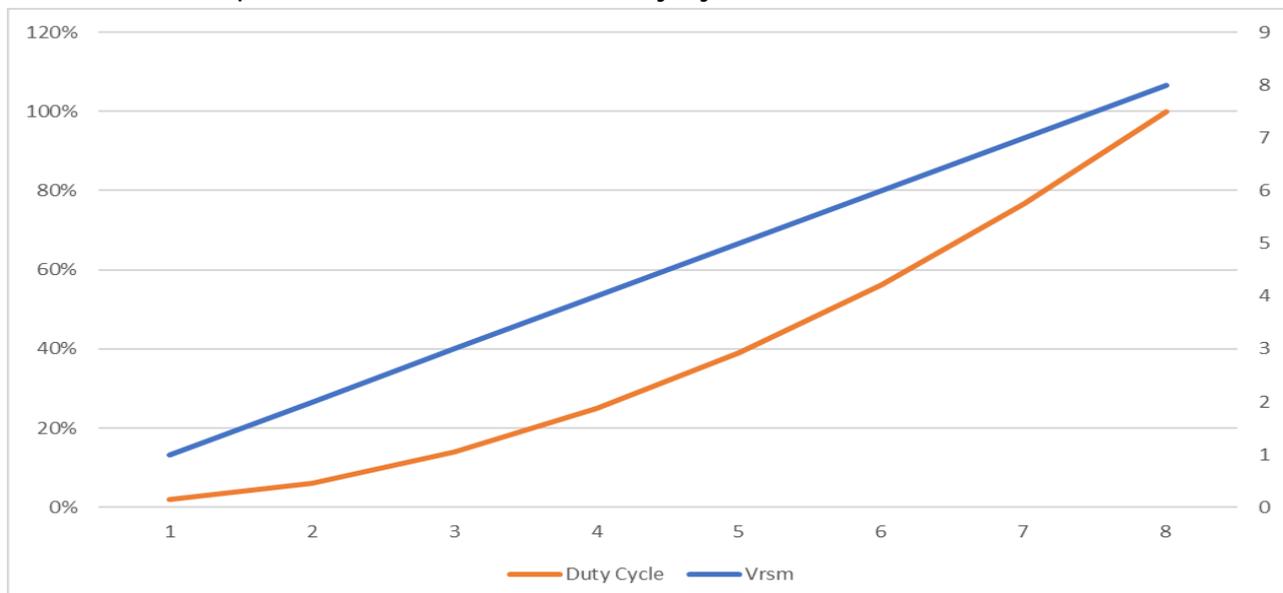
IE: in a 2S configuration, with Auto Adjustment Mode and potentiometer settled at 50%, board deliver constant 4.2 Vrsm as long as the battery is above that value. in Manual Mode, same configuration delivers 5.9 Vrms and you need to manually adjust the potentiometer as battery drains to maintain the output voltage

Lock/Unlock

To lock and unlock the board, click the fire switch 5 times. Onboard led will blink green 5 times to notify the change of state

Battery level

When board fires, onboard led will turn on with color according to the battery level. Color will change proportionally to the battery charge from green (full) to red (empty)

Low Battery Cut Off

When battery low level limit be reached, the led will blink red when you press the fire switch. Please proceed to change it for a fresh battery

Low level limit

2S   6.8V

3S   10.2V

4S   13.6V

Over Discharge Protection

Over discharge a lithium battery can cause an irreversible damage on it. In order to avoid this, the board includes a security cut off for over discharge

If during the firing the battery level drops below 3V per cell, the power will be cut and led blink red until you release the switch. Please check your battery health and replace or dispose if it is necessary

10s Protection

If you press the fire switch over 10 seconds, the power will be cut and led blink yellow until you release the switch

Stealth Mode

By clicking fire switch 3 times you will enter in the Stealth Mode. In this mode the board will be fully functional but onboard led is off. Click 3 times again to leave this mode