

## Introduction

Fuzhou Suntop Elec.Co., Ltd has designed a demo board which demonstrates how GreenFET and GreenPAK can be applied in Dimming LED Driver (See below figure 1).

The demo board is connected to 5V power supply via microUSB interface. This is self-locked power switch which can control on and off using GreenFET3 chip. When the device turns on power, the indicator light becomes red, and the signal goes to GreenPAK chip. Rotating the brightness knob (clockwise to increase) can control LED's brightness. Those 3 LEDs (green) indicate the current brightness values. Notes: As LED light is intensive, please do not look directly in order to avoid hurting your eyes.



Figure 1. Dimming LED Driver

## GreenFET circuit design

SLG59M301V is a single N-channel load switch with integrated charge pump. The demo board demonstrates the advantages of N-channel MOSFET against P-channel MOSFET in low power control application.

Advantages:

1. The cost of N-channel MOSFET is less than P-channel MOSFET.
2. With less power consumption, the  $R_{ds(ON)}$  of N-channel is lower than P-channel.
3. Integrated charge pump allows using lower power supply for on and off control.

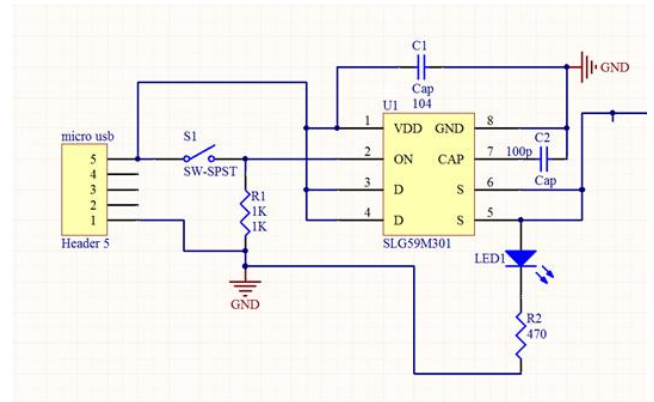


Figure 2. GreenFET circuit

## GreenPAK circuit design

GreenPAK2 is a one-time programmable mixed-signal matrix, which contains PWM, ADC, Comparators, Voltage reference, clock generator and other circuits. With lower cost and higher reliability, it is simple to develop, and fast to run.

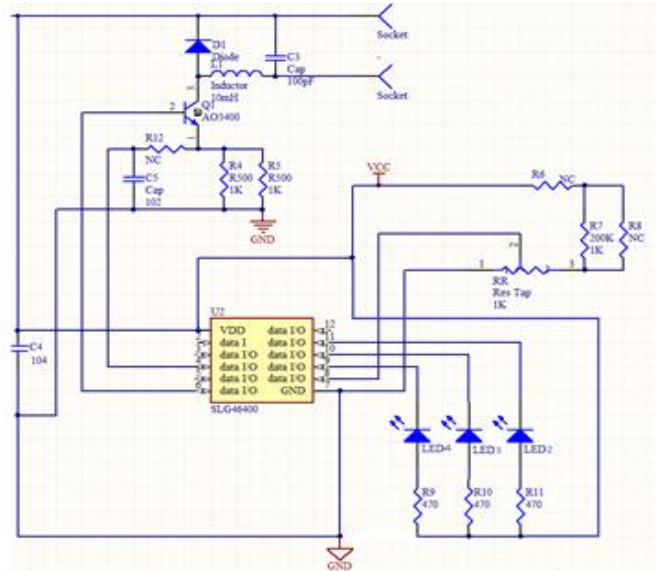
This demo board demonstrates how the usage of the internal clock generator, counter, ADC, PWM, Comparator, voltage reference, digital gate and, realizes the function of LED soft on/off control. With GreenPAK2 Development platform, you can develop the code to run on the part very quickly. Because there is no processor core, the system is



highly reliable, as there is no issue with the processor core stuck in a loop. Below, please find the picture for GreenPAK2 development platform.

### Related Files

Programming code for **GreenPAK Designer**.



### GreenPAK2 Design

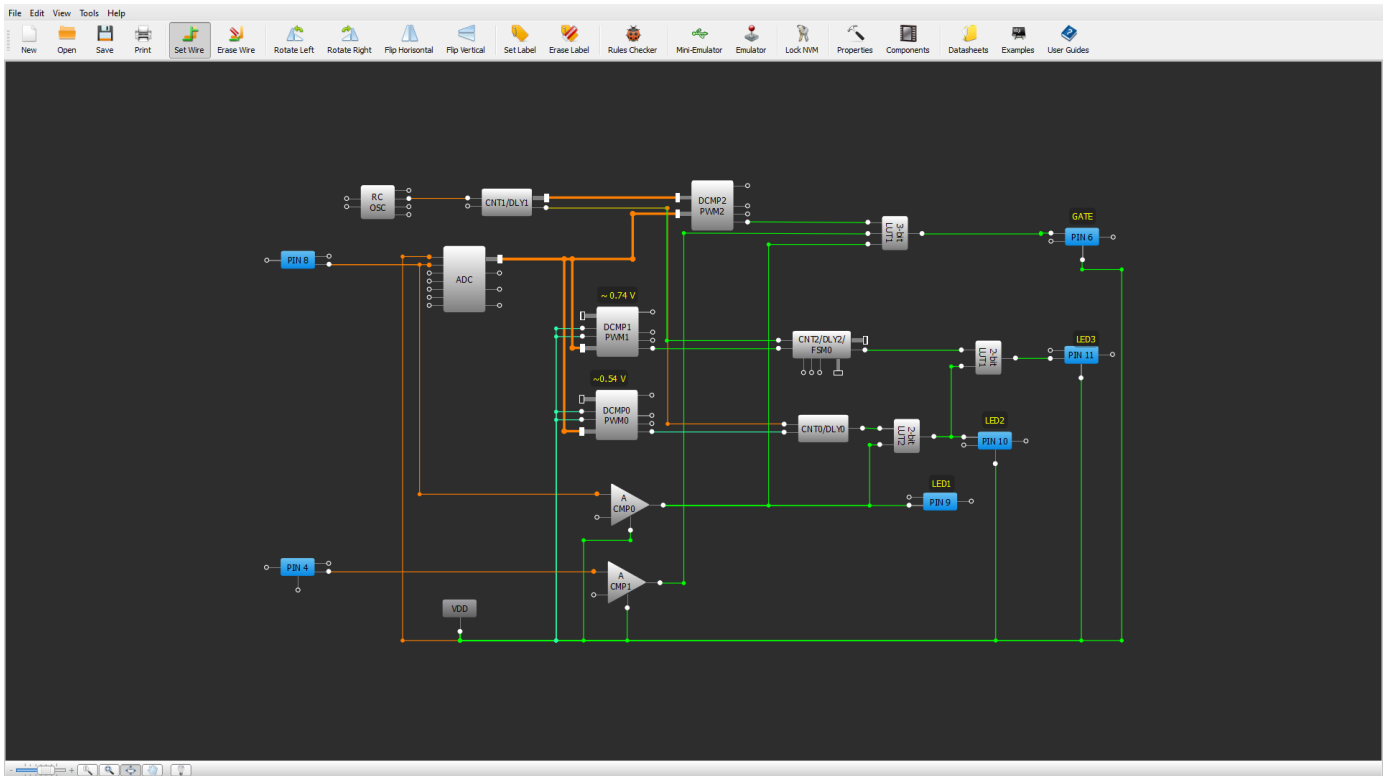


Figure 4. GreenPAK2 development platform design



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Revision	Orig. of Change	Submission Date	Description of Change
A	Peter Zheng	12/05/2013	New application note

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