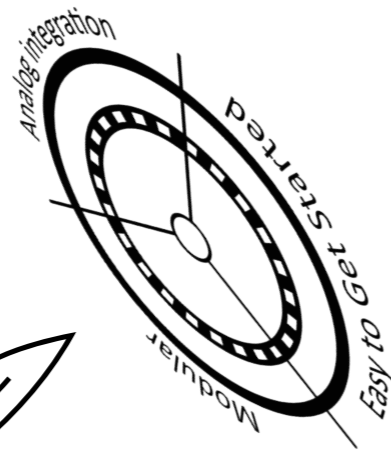
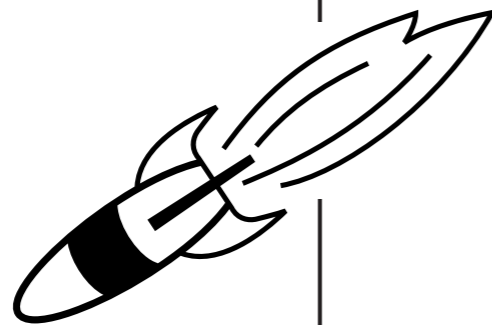
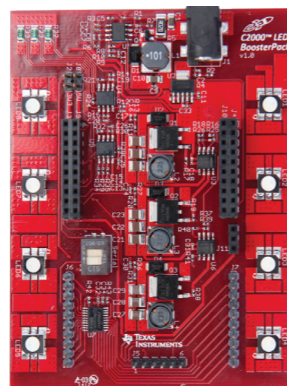


# Meet the LED BoosterPack



You can find this quick start guide and other great information on BoosterPacks at [www.ti.com/BoosterPacks](http://www.ti.com/BoosterPacks).



Easily plug in C2000 LaunchPad to the LED BoosterPack to add lighting capability

Three Boost converters to drive LEDs and allow control of dimming and color management

Interface to MSP430 Capacitive Touch BoosterPack to enable touch-controlled LED lighting

# LED BoosterPack Quick Start Guide: BOOSTXL-C2KLED

Get started with the LED BoosterPack and the C2000™ Piccolo™ LaunchPad

## 1. Software and driver installation

If you have not already installed the required software for the C2000 LaunchPad, go to [www.ti.com/c2000-launchpad](http://www.ti.com/c2000-launchpad). Here, you can download a free version of TI's integrated development environment: Code Composer Studio™ (CCS) IDE version 5. You will also need to download the controlSUITE™ software package which is available at the same URL.

## 2. Setting up the hardware

Note that the LED BoosterPack can only be used with compatible LaunchPads. It is not a standalone evaluation kit.

Ensure that neither of the jumpers (J2 and J8) are connected on the BoosterPack. If they are connected, remove the jumpers. On the C2000 LaunchPad, ensure that the jumpers (JP1, JP2 and JP3) are connected. If they are not connected, place jumpers on the posts. Plug in the LaunchPad to the BoosterPack. Also, plug in the power supply to the BoosterPack and the USB cable to the LaunchPad.

**OPTIONAL:** If you wish to try the capacitive touch demo, move switch S1 on the LED BoosterPack to the up/on position and move the S4 switch of the C2000 LaunchPad in the down/off position. This will connect the MSP430™ MCUs serial peripheral on the BoosterPack to the Piccolo serial peripheral on the LaunchPad. Plug in the Capacitive Touch BoosterPack to the LED BoosterPack.

If you wish to experiment with the PC LED Control demo, place the switches in the opposite state (S1 LED BoosterPack down, S4 LaunchPad up).

## 3. Demo Applications

### Accessing Demo Applications through Resource Explorer

Example application code may be loaded using the resource explorer within CCSv5. To do so, open CCSv5 and expand the controlSUITE entry in Resource Explorer. Under the kits entry, look for the C2000 LaunchPad line and expand this entry. Under the examples section, you'll find both the PC

controlled and Capacitive Touch LED Control firmware. To load and debug these applications follow the steps presented in resource explorer.

### Capacitive Touch LED Control

The MSP430 Capacitive Touch BoosterPack (430BOOST-SENSE1) plugs into the LED BoosterPack to allow for touch control of the LEDs. Data is fed over a serial connection to the Piccolo device on the C2000 LaunchPad which then identifies which LEDs to light to any given intensity. The MSP430 MCU is pre-programmed with the capacitive touch firmware, but the Piccolo device must still be programmed with the application code. Follow the steps above to access the Capacitive Touch LED control application code and load the code onto the board. Wave your hand over the touch sensor, which should light up to indicate it has detected you. Double touch the center button to turn on the LEDs. Spin your finger around the touch sensor to change the color. Another touch is needed to the center button to turn off the LEDs after they have been turned on.

### PC LED Control

The C2000 LED BoosterPack also includes a PC GUI application which allows the user to turn on or off the LEDs and control their intensity with sliders on a PC. Load the PC LED Control application code in resource explorer using the steps outlined above and run the code. To open up the PC GUI, go to the C2000 LaunchPad: LAUNCHXL-F28027 kit in resource explorer. Expand the "Folders" section and click on the "Example GUI" folder. In this folder you'll find the LED\_BOOST\_PC\_GUI.exe file. Click on this and the GUI should open up. Once the GUI is open, try moving the sliders and observe the LEDs light up.

## 4. Develop your own application and change the world!

The LED control techniques used on this evaluation kit are the same control techniques used on professional LED lights. Use the principles you learn with this kit to design and develop larger real-time control systems. Don't feel like coding? Try using VisSim ([www.vissim.com/piccolo](http://www.vissim.com/piccolo)) to develop a control system for this kit graphically! Remember you can always get support for TI kits at [www.ti.com/e2e](http://www.ti.com/e2e).

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