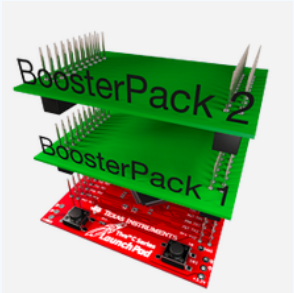
BoosterPack Ecosystem

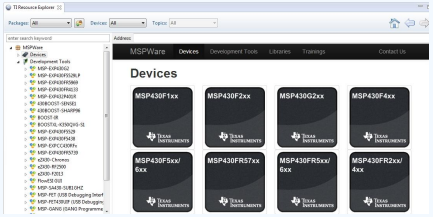
BoosterPack plug-in modules plug into the header pins on the LaunchPad to allow you to explore different applications that your favorite TI MCU can enable. There is a broad range of application-specific and general purpose BoosterPacks available from both Texas Instruments and third parties. Stack multiple BoosterPacks on a single LaunchPad to greatly enhance the functionality of your design. BoosterPacks include:

- Wireless Connectivity
- Environmental Sensing
- Power Sources

>> See them all @ ti.com/boosterpacks



Software Tools



TI Resource Explorer

Professional Software tools

LaunchPad is supported by professional IDEs that provide industrial-grade features and full debug-capability. Set breakpoints, watch variables & more with LaunchPad.

ti.com/ccs

Code Composer Studio™ IDE

ti.com/mspiar

IAR Embedded Workbench ®

Meet the MSP430FR2311 LaunchPad Development Kit

Part Number: MSP-EXP430FR2311

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Disclaimer: www.ti.com/lit/sszz027

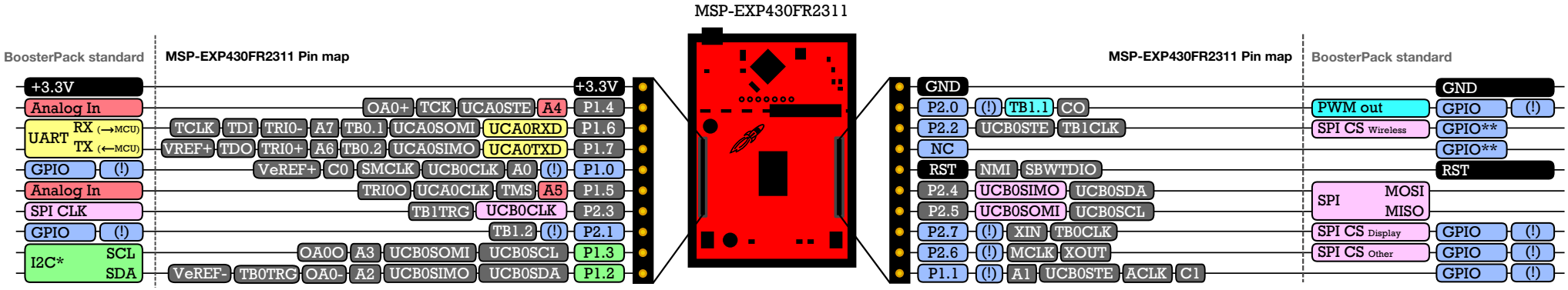
Resources @ ti.com/launchpad

{ Code examples
Open Source Design Files
Documentation
Example projects
Videos
Tutorials
Other TI products }

Below are the pins exposed @ the MSP-EXP430FR2311 BoosterPack connector.

Also shown are functions that map with the BoosterPack pinout standard.
Refer to the MSP430FR2311 Datasheet for additional details.
* Note that to comply with the I2C channels of the BoosterPack standard, a software-emulated I2C must be used.
** Some LaunchPads do not 100% comply with the standard, so please check your specific LaunchPad to ensure pin compatibility.

(!) Denotes I/O pins that are interrupt-capable
** Some LaunchPads do not have a GPIO here



A closer look at your new LaunchPad Development Kit

Featured microcontroller: MSP430FR2311

This LaunchPad is great for...

- Applications such as smoke detectors, power banks, power monitoring and personal electronics requiring a small memory footprint and an abundance of integrated analog
- Remote sensing and datalogging with up to 4 kB of embedded FRAM

What comes in the box?

MSP-EXP430FR2311 LaunchPad

eZ-FET on-board emulator
Enables programming, debugging & application UART via USB.

Featuring EnergyTrace™ technology, enabling power-aware debugging

This Quick Start Guide

Micro-USB Cable

Software @ ti.com/msp-exp430fr2311

MSP430FR2311 Microcontroller
- 16 MHz CPU
- 4 kB Embedded FRAM
- General Purpose Operational Amplifier
- Trans-impedance Amplifier
- 16 General Purpose Input/Output
- 2 x 16-bit timers, 1 x 16-bit Real-Time Clock (RTC)
- Direct Memory Access (DMA)
- 8-channel 10-bit Analog-to-Digital Converter (ADC)
- Serial communication module (eUSCI)
  - UART, SPI, I2C
  - IrDA enhanced IR Modulation

Out-of-box Demo

Find more information @ ti.com/msp-exp430fr2311

1. Connecting to the computer
Connect the LaunchPad using the included USB cable to a computer. A green power LED should illuminate. For proper operation, drivers are needed. It is recommended to get drivers by installing an IDE such as TI's CCS or IAR EW430. Drivers are also available at ti.com/MSPdrivers.

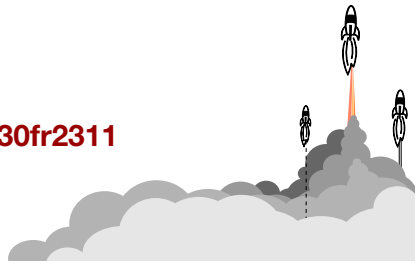
2. Running the Out-of-box Demo
When connected to your computer, the LaunchPad will power up and the User LED (LED1) will toggle during the startup sequence.

3. Using the Light Sensor Circuit
Using the users hand or a piece of paper cover the photodiode (D1) to shade it from light and the User LED (LED2) will dim based on the amount of light hitting the photodiode. The user can also use a light source to illuminate the photodiode and the User LED will increase in brightness.

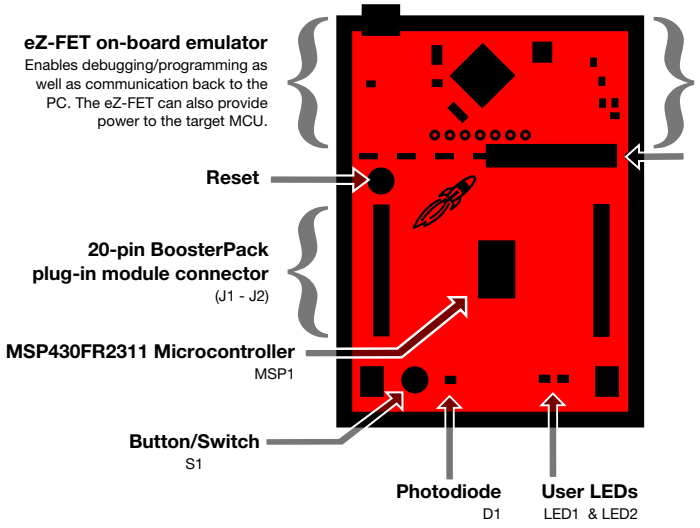
Ready to Learn More?

- Documentation
- MSPWare
- Driver Library
- Code Examples
- Application Notes
- Porting Guide
- Design Files
- and more!

ti.com/msp-exp430fr2311



MSP-EXP430FR2311 Overview



EnergyTrace™ Technology

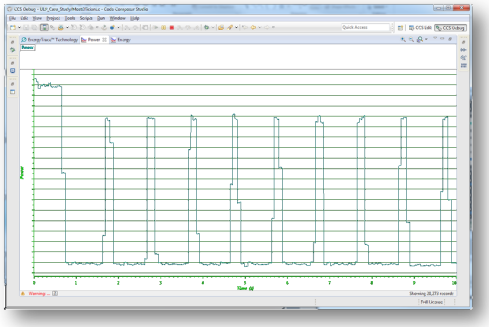
Find more information @ ti.com/EnergyTrace

EnergyTrace technology implements a new method for measuring MCU current consumption. EnergyTrace uses a DC-DC solution to measure the time density of charge pulses. The EnergyTrace technology window allows users to view power data and compare power consumption! This makes optimizing the power consumption of an application easier than ever before!

EnergyTrace Profile
EnergyTrace Profile runtime and energy data for low power modes along with each function run during Active Mode.

Graphical Power Data
These two tabs of the EnergyTrace Technology window show a graph over time of power and energy.

Enable EnergyTrace Technology Window
1. Download CCS version 6.0 and newer
   - ti.com/ccs
2. Enable EnergyTrace Technology Window
   - In CCS, click: Window>> Preferences >> Code Composer Studio >> Advanced Tools >> EnergyTrace Technology
   - Check "Enable" box
3. Debug your application to launch EnergyTrace Window



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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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