

# 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:

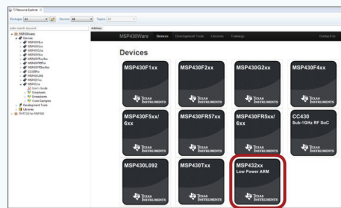
- Displays
- Wireless Connectivity
- Environmental Sensing

>> See them all @ [ti.com/boosterpacks](http://ti.com/boosterpacks)



## Software Tools

[ti.com/beginMSP432launchpad](http://ti.com/beginMSP432launchpad)



TI Resource Explorer

### Professional Software tools

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



Code Composer Studio™ IDE

[ti.com/ccs](http://ti.com/ccs)



Keil™ μVision® IDE

[ti.com/mspiar](http://ti.com/mspiar)



IAR Embedded Workbench®

# Meet the MSP-EXP432P401R LaunchPad LaunchPad Development Kit

Part Number: MSP-EXP432P401R

TEXAS INSTRUMENTS

© 2017 Texas Instruments Incorporated. The platform bar, MSP430, MSP432, and Code Composer Studio are trademarks of Texas Instruments. All other trademarks are the property of their respective owners.  
Disclaimer: [www.ti.com/lit/sla596a](http://www.ti.com/lit/sla596a)

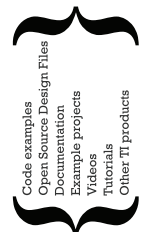
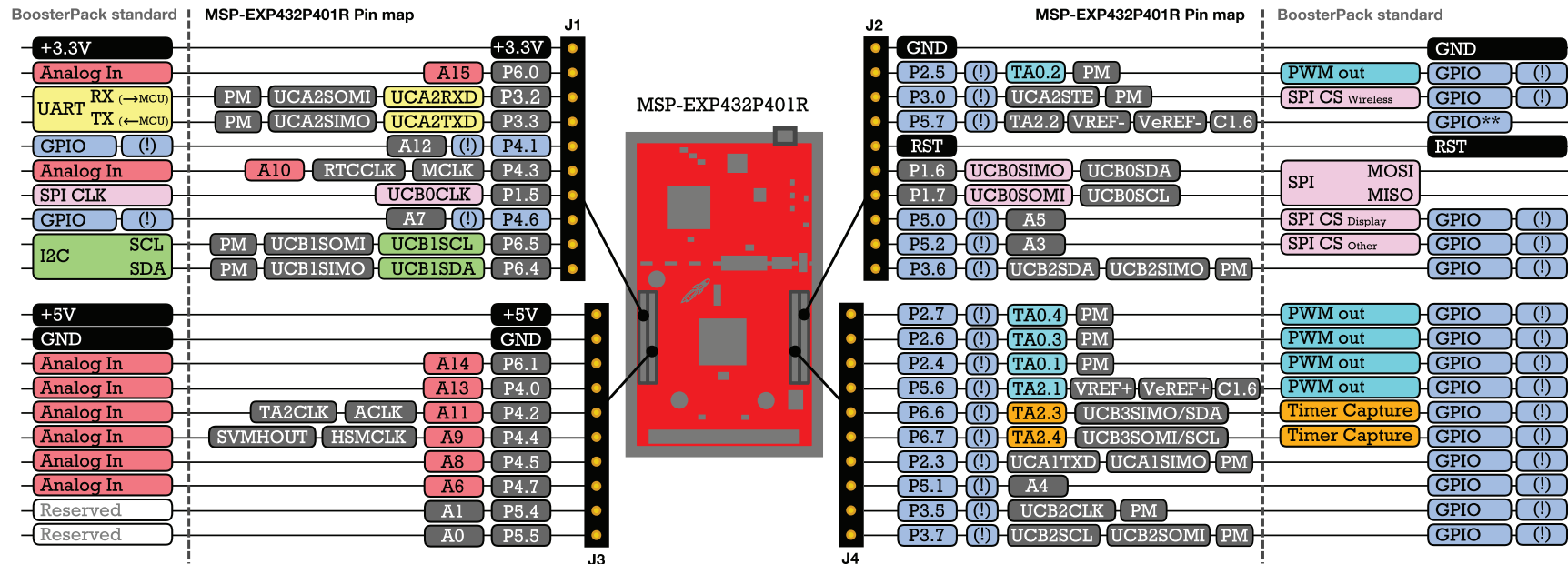
## Below are the pins exposed @ the MSP-EXP432P401R LaunchPad BoosterPack connector.

Also shown are functions that map with the BoosterPack pinout standard. Refer to the MSP432P401R Datasheet for additional details.

NOTE: Some LaunchPads & BoosterPacks 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



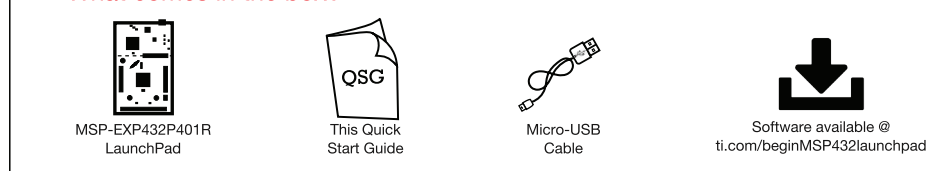
Resources @  
[ti.com/launchpad](http://ti.com/launchpad)

# A closer look at your new LaunchPad Development Kit

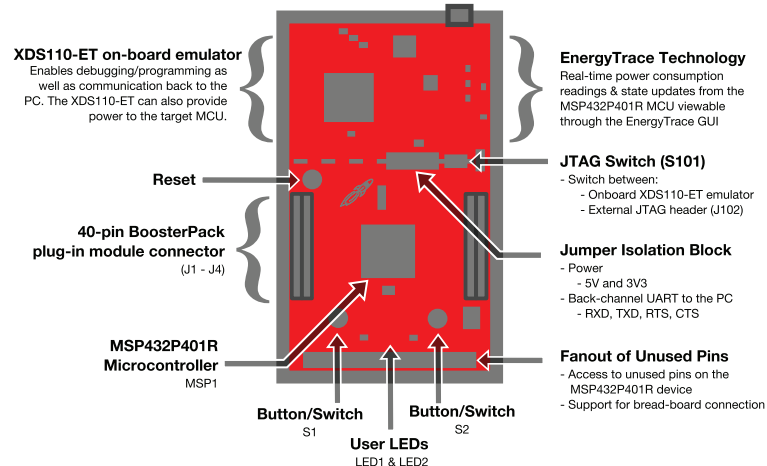
## Featured microcontroller:

MSP-EXP432P401R LaunchPad: Low-power at its best, performance at its core

### What comes in the box?



## MSP-EXP432P401R Overview



## SimpleLink SDK Overview

The SimpleLink™ MCU portfolio offers a single development environment that delivers flexible hardware, software and tool options for customers developing wired and wireless applications. With 100 percent code reuse across host MCUs, Wi-Fi™, Bluetooth® low energy, Sub-1GHz devices and more, choose the MCU or connectivity standard that fits your design. [www.ti.com/simplelink](http://www.ti.com/simplelink)

### EnergyTrace™ Technology

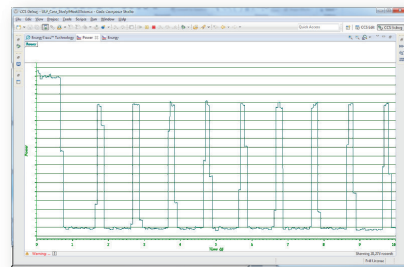
#### EnergyTrace Profile

EnergyTrace captures the real-time energy profile and correlates this data to the device power modes and application code

#### Graphical Power Data

The EnergyTrace Technology window shows a graph over time of power and energy.

[ti.com/energytrace](http://ti.com/energytrace)



## Out-of-box Demo

Find more information @  
[ti.com/beginMSP432launchpad](http://ti.com/beginMSP432launchpad)  
[ti.com/MSP-EXP432P401R](http://ti.com/MSP-EXP432P401R)

### 1. IDE and Drivers

Download IDE and drivers at [ti.com/beginMSP432launchpad](http://ti.com/beginMSP432launchpad) or experience the out-of-box demo live at [dev.ti.com](http://dev.ti.com)

### 2. Connect to the computer

Connect the LaunchPad using the included USB cable to a computer. A green power LED should illuminate. The LaunchPad will power up and the RGB LED (LED2) will toggle during the startup sequence. Now the LaunchPad will wait for commands from the GUI.

### 3. Open the Provided GUI

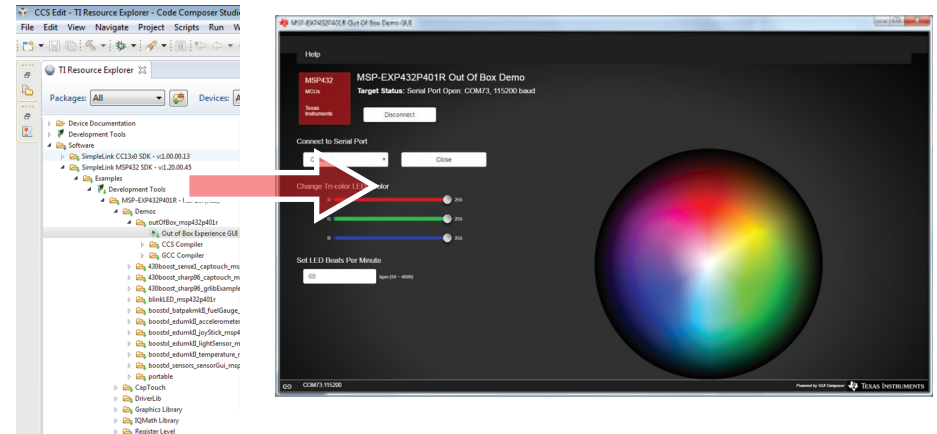
Open the out-of-the-box GUI executable at: TI Resource Explorer > Software > SimpleLink MSP432 SDK > Examples > Development Tools > MSP-EXP432P401R - Rev 2.x (Red) > Demos > outOfBox\_msp432p401r > Out of Box Experience GUI

### RGB LED Mode

This mode allows the user to set the color of the RGB LED using the provided PC GUI. Use the color wheel to set the color. Use the sliders to manipulate the channels of Red, Green, and Blue to make any color!

### Blink the RGB LED

Use switch S1 to set the blink rate of the RGB LED (LED2). The pace at which the user presses S1 sets the blink speed of the LED. Switch S2 toggles between the colors of the RGB LED, blinking each individual color at different rates. S2 toggles between Red, Green, Blue, and a random RGB color. How fast can you blink the LED?



## Ready to Learn More?

- Documentation
- SimpleLink MSP432 SD
- Driver Library
- Code Examples
- Application Notes
- Porting Guide
- Design Files
- TI Drivers
- and more!

[ti.com/beginMSP432launchpad](http://ti.com/beginMSP432launchpad)



## IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products (also referred to herein as "components") are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI's terms and conditions of sale of semiconductor products. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers' products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers' products and applications, Buyers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of significant portions of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Resale of TI components or services with statements different from or beyond the parameters stated by TI for that component or service voids all express and any implied warranties for the associated TI component or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards which anticipate dangerous consequences of failures, monitor failures and their consequences, lessen the likelihood of failures that might cause harm and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI's goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed a special agreement specifically governing such use.

Only those TI components which TI has specifically designated as military grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components which have **not** been so designated is solely at the Buyer's risk, and that Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/TS16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/TS16949.

### Products

|                              |                                                                                      |
|------------------------------|--------------------------------------------------------------------------------------|
| Audio                        | <a href="http://www.ti.com/audio">www.ti.com/audio</a>                               |
| Amplifiers                   | <a href="http://amplifier.ti.com">amplifier.ti.com</a>                               |
| Data Converters              | <a href="http://dataconverter.ti.com">dataconverter.ti.com</a>                       |
| DLP® Products                | <a href="http://www.dlp.com">www.dlp.com</a>                                         |
| DSP                          | <a href="http://dsp.ti.com">dsp.ti.com</a>                                           |
| Clocks and Timers            | <a href="http://www.ti.com/clocks">www.ti.com/clocks</a>                             |
| Interface                    | <a href="http://interface.ti.com">interface.ti.com</a>                               |
| Logic                        | <a href="http://logic.ti.com">logic.ti.com</a>                                       |
| Power Mgmt                   | <a href="http://power.ti.com">power.ti.com</a>                                       |
| Microcontrollers             | <a href="http://microcontroller.ti.com">microcontroller.ti.com</a>                   |
| RFID                         | <a href="http://www.ti-rfid.com">www.ti-rfid.com</a>                                 |
| OMAP Applications Processors | <a href="http://www.ti.com/omap">www.ti.com/omap</a>                                 |
| Wireless Connectivity        | <a href="http://www.ti.com/wirelessconnectivity">www.ti.com/wirelessconnectivity</a> |

### Applications

|                               |                                                                                          |
|-------------------------------|------------------------------------------------------------------------------------------|
| Automotive and Transportation | <a href="http://www.ti.com/automotive">www.ti.com/automotive</a>                         |
| Communications and Telecom    | <a href="http://www.ti.com/communications">www.ti.com/communications</a>                 |
| Computers and Peripherals     | <a href="http://www.ti.com/computers">www.ti.com/computers</a>                           |
| Consumer Electronics          | <a href="http://www.ti.com/consumer-apps">www.ti.com/consumer-apps</a>                   |
| Energy and Lighting           | <a href="http://www.ti.com/energy">www.ti.com/energy</a>                                 |
| Industrial                    | <a href="http://www.ti.com/industrial">www.ti.com/industrial</a>                         |
| Medical                       | <a href="http://www.ti.com/medical">www.ti.com/medical</a>                               |
| Security                      | <a href="http://www.ti.com/security">www.ti.com/security</a>                             |
| Space, Avionics and Defense   | <a href="http://www.ti.com/space-avionics-defense">www.ti.com/space-avionics-defense</a> |
| Video and Imaging             | <a href="http://www.ti.com/video">www.ti.com/video</a>                                   |

### TI E2E Community

[e2e.ti.com](http://e2e.ti.com)