

Part Number: LP-EM-CC2340R53

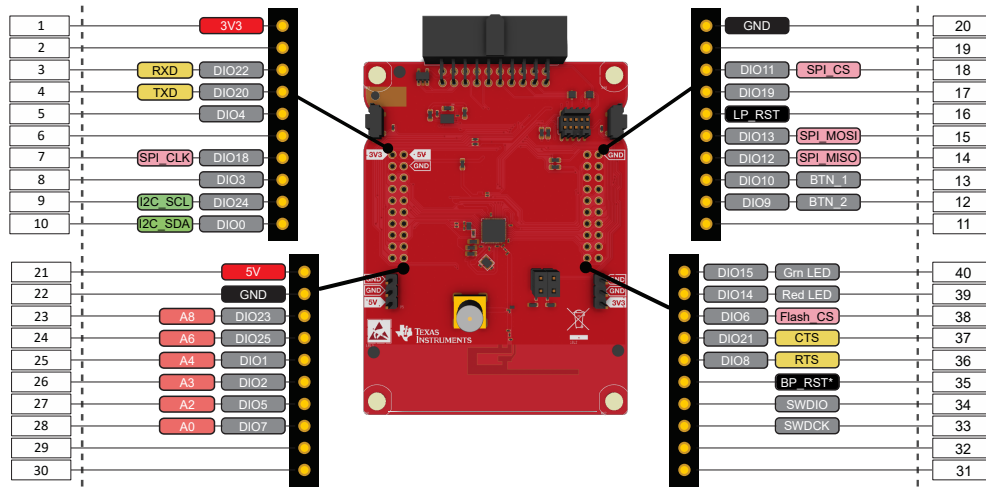
Connect your LaunchPad to a computer  
and visit [dev.ti.com](http://dev.ti.com)

# LaunchPad™ Development Kit

Meet the  
CC2340R53

## The BoosterPack™ connector

The pinout to connect BoosterPack accessories (available separately) are shown below.



**UART** (DIO20, DIO22), **Reset** (LP\_RST) and **JTAG** (SWCK and SWD) are also present in the LP-EM Debug Connector. Power (**GND**, **3V3** and **5V**) is also provided.

\*This function is not connected to the LaunchPad connector by default.



**SmartRF Studio 8**  
A powerful application to evaluate radio performance. SimpliLink Academy and SimpliLink SDK and tutorials to easily ramp your development with your new LaunchPad.



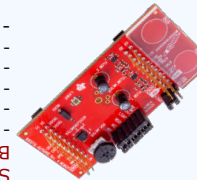
[www.ti.com/ccs](http://www.ti.com/ccs)

**Professional Software Tools**  
LaunchPads are supported by professional IDEs that provide industrial-grade features and full debug capability. Set breakpoints, watch variables, profile code, inspect memory and more.

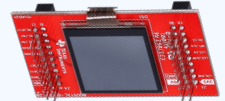
## Software Tools

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

**SimpliLink ULP Sense BoosterPack**  
- Ultra low power accelerometer  
- Two cap touch buttons  
- Analog light sensor  
- Reed switch  
- 0-200k $\Omega$  potentiometer



**Sharp 128x128 Memory LCD and microSD card BoosterPack**  
- 1.28 128 x 128 pixel LCD (LS013B7DH03)  
- microSD card slot  
- DCDC 3V to 5V converter  
- Ultra-low-power operation



## BoosterPack Ecosystem

## XDS110 EnergyTrace™ Technology

The LP-EM-CC2340R53 is compatible with EnergyTrace technology.

EnergyTrace implements a new method for measuring MCU current consumption. It uses a DC-DC solution to measure the time density of charge pulses, allowing accuracy on ultra low power measurements. Its high dynamic range (700 nA to 400 mA) and fast sampling rate (256 kSPS) captures the complete operational profile of the wireless MCU.

### EnergyTrace Profile

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

### Graphical Power Data in Code Composer Studio

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

**Available in the LP-XDS110ET debug probe and selected LaunchPads**

Find more information at  
[ti.com/EnergyTrace](http://ti.com/EnergyTrace)

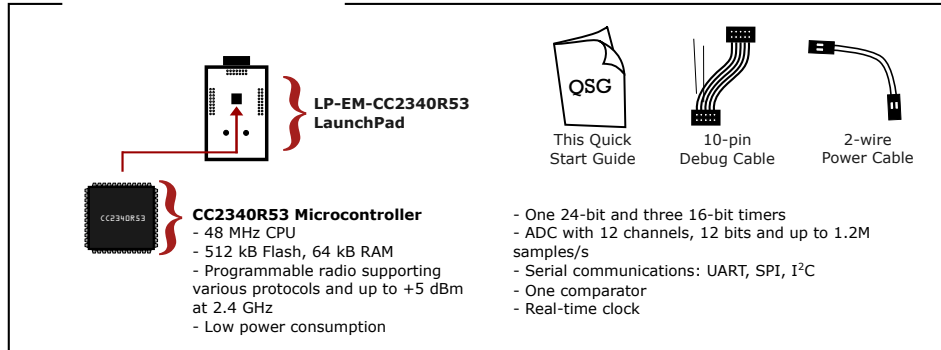
# A closer look at your new LaunchPad development kit

**Featured microcontroller:** CC2340R53

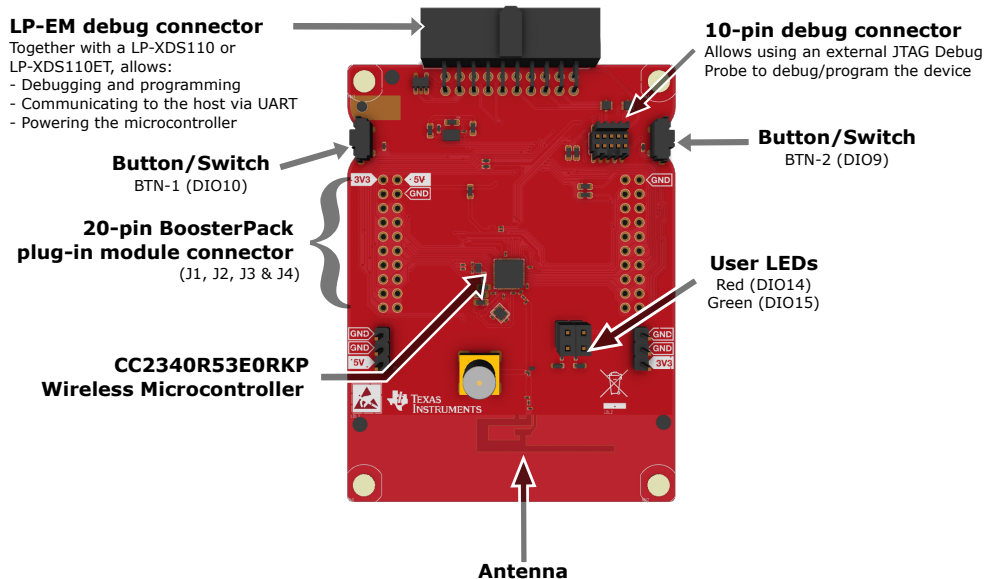
**This LaunchPad is great for...**

- Battery-operated wireless applications operating in the 2.4GHz ISM RF band
- Add RF capabilities to your product using one of the supported protocols: Bluetooth® 5.3 Low Energy, Zigbee®, SimpleLink™ 15.4 stack and proprietary protocols

**What comes in the box?**



## LP-EM-CC2340R53 Overview



## Hardware setup

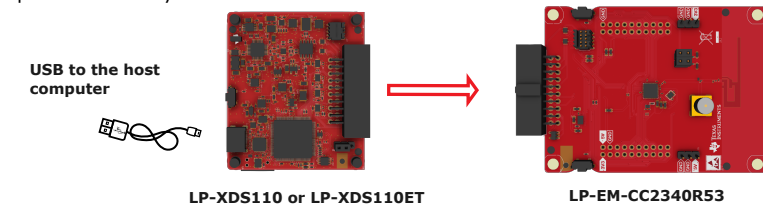
**What do you need?**

To use your new LaunchPad, you need to connect an external debug probe to either the 20-pin LP-EM debug connector on the edge of the board or to the 10-pin debug connector and supply power separately.

**Option 1: Using the LP-EM debug connector**

This is the easiest way to setup the hardware. It requires either an **LP-XDS110** or **LP-XDS110ET** debug probe (sold separately).

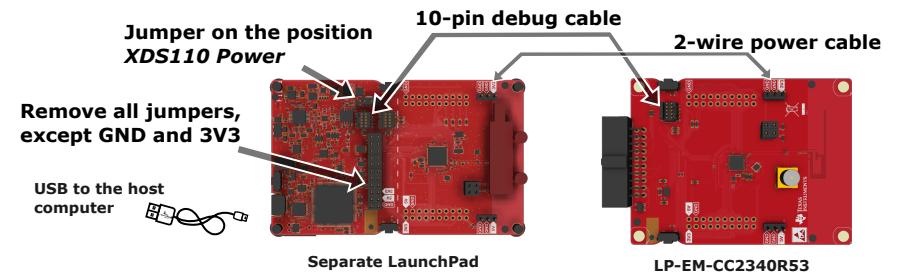
Simply connect the connector at the edge of the debug probe to its counterpart on the LaunchPad and connect the USB port of the debug probe to the host computer. A secondary UART communications channel will also be available and power to the LaunchPad will be provided directly.



**Option 2: Using the 10-pin debug connector**

Either a standalone debug probe or a separate LaunchPad with a built-in debug probe can be used.

Connect the two boards as shown in the picture below:



For additional details, consult [dev.ti.com/?id=LP-EM-CC2340R53](http://dev.ti.com/?id=LP-EM-CC2340R53)

When using the 10-pin debug connector, the UART communications channel must be wired separately (this connector does not carry UART signals).

If using a standalone debug probe, consult its documentation to see if it supports the ARM Cortex-M 10-pin standard.

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