

# SimpleLink™ Microcontroller Platform



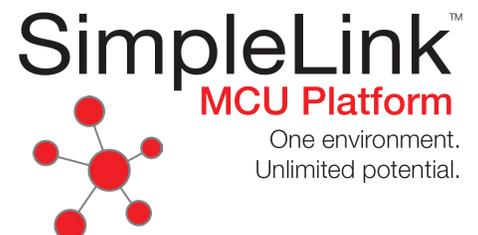
## Key benefits

- **Broadest portfolio of differentiated 32-bit ARM®-based MCUs**
  - Industry-leading low-power consumption
  - On-chip dedicated, integrated security to reduce external security threats
  - Supports more than ten differentiated wired and wireless protocols
- **Single software foundation for 100 percent software reuse**
  - SDK based on common foundation of drivers, frameworks and libraries
  - Pre-integrated TI-RTOS kernel already deployed in thousands of products across multiple applications
  - POSIX compliant API ensures compatibility with numerous third-party software components
- **Faster development with unified tool chain, training and resources**
  - One development environment across the whole portfolio of SimpleLink MCUs
  - Free cloud and offline tools with Code Composer Studio™ Cloud and Desktop
  - SimpleLink Academy offers free, hands-on training
  - 24/7 support through the TI E2E™ community

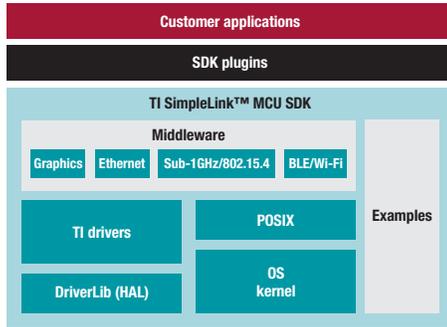
TI's SimpleLink™ platform offers the broadest portfolio of 32-bit ARM-based microcontrollers (MCUs) with industry-leading features including low power and robustness, and integrated security to support more than ten differentiated wired and wireless protocols. Each device offers developers a number of features to uniquely solve their problems, whether capturing high-precision 16-bit analog signal, enabling more security, achieving a range of over 20 kilometers or making a coin cell last for several years.

## SimpleLink MCU portfolio

Product	MSP432E4	MSP432P4	CC3120	CC3220	CC2640R2F	CC1350	CC1310
MCU type	Host MCU	Host MCU	Network processor	Wireless MCU	Wireless MCU	Wireless MCU	Wireless MCU
Application	✓	✓	–	✓	✓	✓	✓
Wireless stack + RF	–	–	✓	✓	✓	✓	✓
Wireless and wired technology	Ethernet, USB, CAN and wireless connectivity with SDK plugins	Connectivity with SDK plugins	Wi-Fi®	Wi-Fi	Bluetooth® low energy	Sub-1 GHz + Bluetooth low energy	Sub-1 GHz
Key differentiation	Integrated Ethernet MAC + PHY and advanced cryptography accelerators	Capture analog signals at up to 16 ENOB using ADC	Network processor with integrated all Wi-Fi and Internet protocols	Wi-Fi CERTIFIED™ single-chip MCU with enhanced security	Lowest power BT4.2 and BT5 Flash-based solution	World's first dual-band wireless MCU	Combine low power and longest range to achieve 20 kms on a coin cell
SimpleLink SDK compatible	✓	✓	✓	✓	✓	✓	✓



## SimpleLink MCU SDK



However, when it comes to software development, these devices are developed around a single software foundation providing 100 percent code compatibility within the SimpleLink software development kits (SDKs). The SimpleLink MCU SDKs feature common components and device-specific middleware to speed up your time-to-market and provide a unified development experience across the entire SimpleLink MCU portfolio of wired and wireless devices. Intuitive and standardized APIs enable 100% application code portability.

The SDK common foundation of drivers, frameworks and libraries enables developers to both access peripherals via portable and easy-to-use TI Drivers API as well as optimize via lower-level access with DriverLib hardware abstraction layer (HAL). Developers can leverage real-time and multi-tasking operations with the integrated TI-RTOS kernel, or tap into other APIs and OS/kernels with POSIX-compliant APIs. A wide range of plug-ins help developers realize additional connectivity and external functionalities. More information about [SimpleLink SDK and code portability](#).

## SimpleLink Portfolio Development kits

MSP-EXP432P401R	MSP-EXP432E401Y	CC3120BOOST	CC3220SF-LAUNCHXL	LAUNCHXL-CC2640R2	LAUNCHXL-CC1350	LAUNCHXL-CC1310
<ul style="list-style-type: none"> <li>SimpleLink MSP432 LaunchPad™ kit</li> <li>Integrated 14-bit ADC</li> <li>Host MCU</li> </ul>	<ul style="list-style-type: none"> <li>SimpleLink Ethernet MCU LaunchPad kit</li> <li>Integrated MAC and PHY Ethernet, USB, CAN</li> <li>Host MCU</li> </ul>	<ul style="list-style-type: none"> <li>SimpleLink CC3120 BoosterPack™ plug-in module</li> <li>Wi-Fi support</li> <li>Wireless network processor</li> </ul>	<ul style="list-style-type: none"> <li>SimpleLink CC3200 LaunchPad kit</li> <li>Wi-Fi support</li> <li>Wireless MCU</li> </ul>	<ul style="list-style-type: none"> <li>SimpleLink CC2640R2F LaunchPad kit</li> <li>Bluetooth low energy support</li> <li>Wireless MCU</li> </ul>	<ul style="list-style-type: none"> <li>SimpleLink CC1350 LaunchPad kit</li> <li>Sub-1 GHz + Bluetooth low energy support</li> <li>Wireless MCU</li> </ul>	<ul style="list-style-type: none"> <li>SimpleLink CC1310 LaunchPad kit</li> <li>Sub-1 GHz support</li> <li>Wireless MCU</li> </ul>

## Software Tools

TI's [unified tool chain](#) delivers faster development with free software tools, training and support to get designs started immediately.

### Code Composer Studio™ integrated development environment (IDE)

- Free, unlimited license
- Powerful and efficient IDE
- Additional support for third-party IDEs and tools including IAR®, Keil, and SEGGER.

### Cloud-based tools

- Free access
- Seamless integration to traditional offline tools

### SimpleLink Academy

- Dozen of highly curated workshops and chapters
- Help developers ramp quickly on SimpleLink Platform

TI Resource Explorer	GUI Composer	PinMux	EnergyTrace™ technology	SmartRF™ Studio
Cloud-based repository featuring code examples, documentation, training and more	Build graphical interfaces to complement your application	Code-gen utility to generate pin, peripheral and driver configuration code	Optimize your application for the lowest possible power consumption	Utility to configure wireless SimpleLink devices

For more information on TI's SimpleLink MCU platform as well as software and hardware tools, please visit [www.ti.com/simplelink](http://www.ti.com/simplelink)

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