



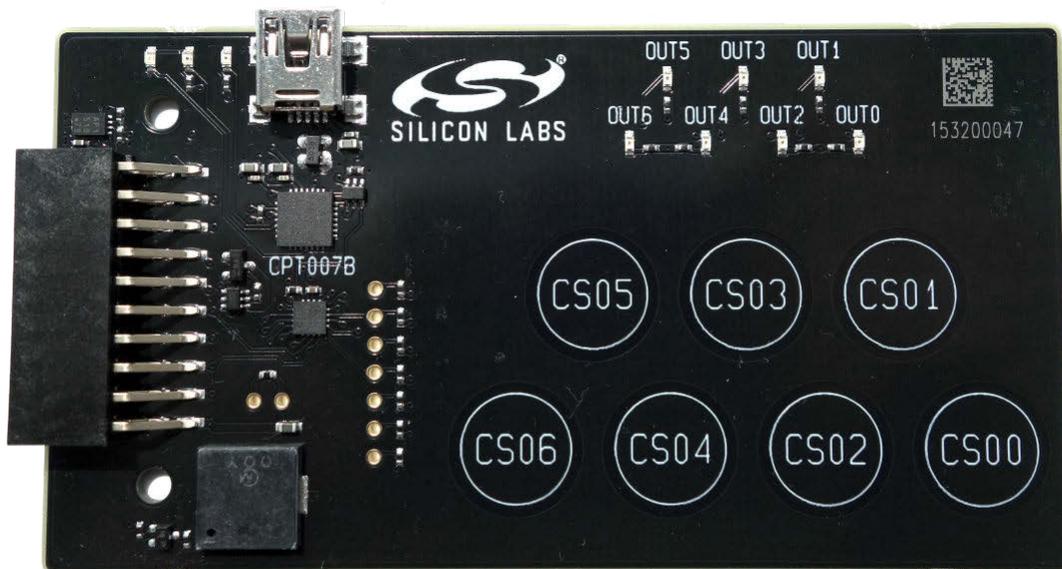
# QSG114: CPT007B SLEX8007A Kit Quick-Start Guide

The CPT007B SLEXP8007A kit is designed to showcase the various touch features of the CPT007B GPIO Capacitive Sense devices.

The device features capacitive sensing input engine with 7 inputs, buzzer feedback, mutually exclusive touch qualifier, capacitive proximity sensing input and other features, making it ideal for many capacitive touch applications.

## KIT CONTENTS

- CPT007B Capacitive Sense Evaluation Board
- 1 x mini USB cable
- 1 x acrylic overlay
- Getting Started card

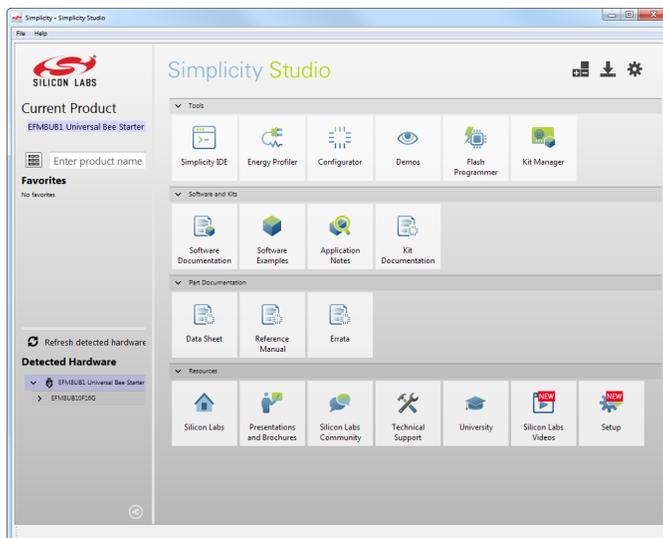


## 1. Getting Started

- Install Simplicity Studio

Simplicity Studio is a free software suite needed to start developing your application. The various features of the device can be visualized using some of the inbuilt tools provided by the software. Download the latest version of Simplicity Studio from the Silicon Labs website:

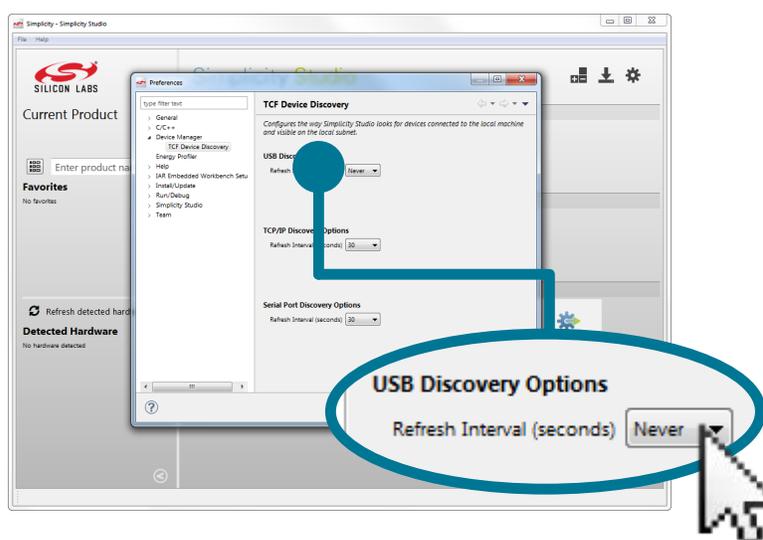
<http://www.silabs.com/simplicity-studio>



**Note:** The board comes pre-loaded with a default configuration that provides buzzer feedback when the capacitive sensing buttons are pressed.

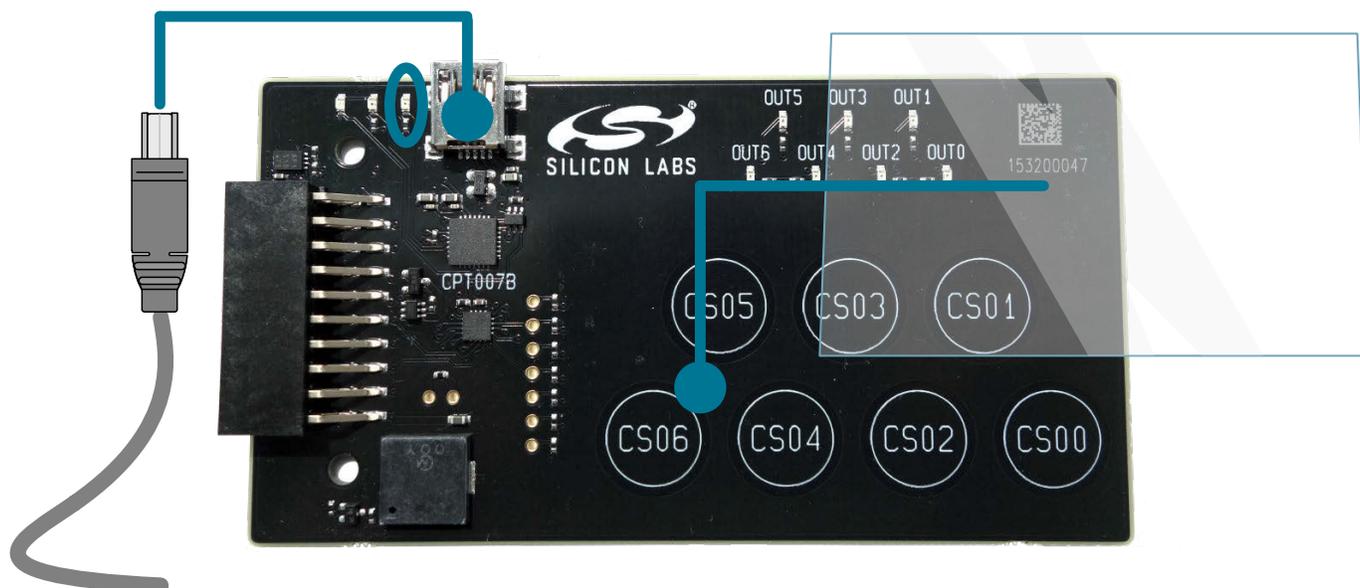
- Disable Auto-Detect in Simplicity Studio

The auto-detect feature in Simplicity Studio can cause a CPT device to miss touches. First disable automatic detection by clicking the **[Settings]** icon, selecting **[Device Manager]>[TCF Device Discovery]**, and selecting **[Never]** for **[USB Discovery Options]**. Kits can now be detected by clicking the **[Refresh detected hardware]** button, but they will not automatically appear when connected to the PC.



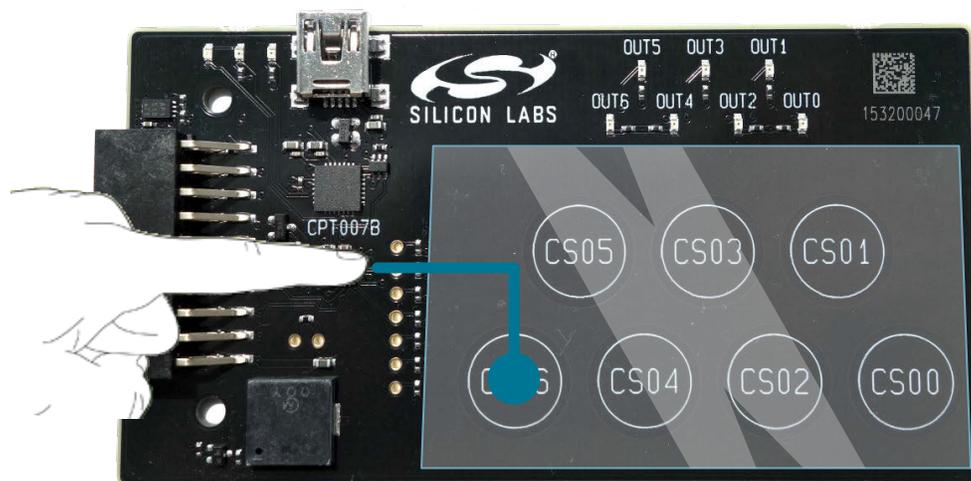
- Set Up Your Kit

1. Provide power to the board by connecting the DBG USB connector to the PC using the provided USB cable. When a connection has been established successfully, the LED (marked in the picture) lights up.
2. Place the acrylic overlay on the board over the capacitive sense pads.



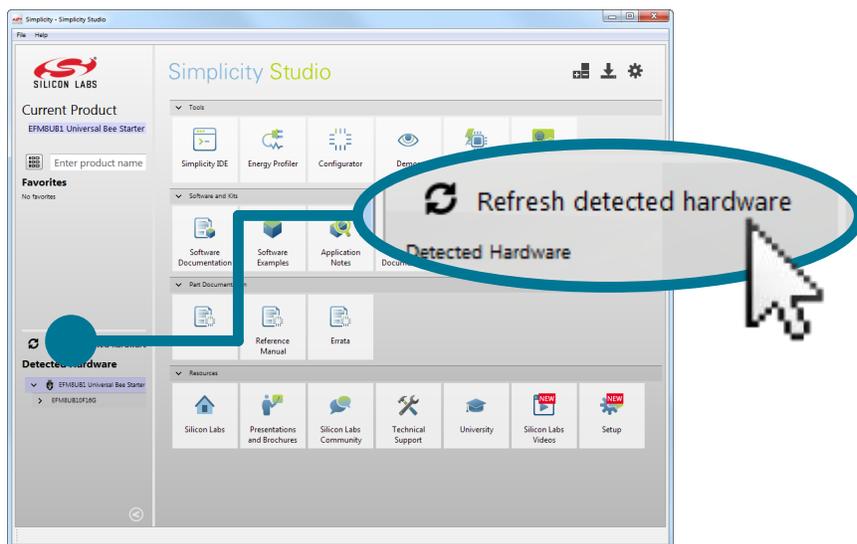
- Use the Capacitive Sensing Buttons

1. Place a finger on any one of the buttons: CS00, CS01, ... , CS06.
2. The buzzer activates each time any of the capacitive buttons are pressed.
3. LEDs OUT0, OUT1, ..., OUT6 will light up corresponding to the button pressed.
4. For example, OUT6 LED lights up and buzzer activates when CS6 button is pressed.



- Detect Your Device

1. Click [**Refresh detected hardware**]. The board may take some time to appear due to driver installations for the debug adapter.
2. Click [**CPT007B**]. This will verify that the installation was successful, identify the CPT device on the hardware, and automatically configure the software tools for use with your device.



- View the Capacitive Sensing Data

1. Click the [**Capacitive Sense Profiler**] tile under [**Tools**] in Simplicity Studio.

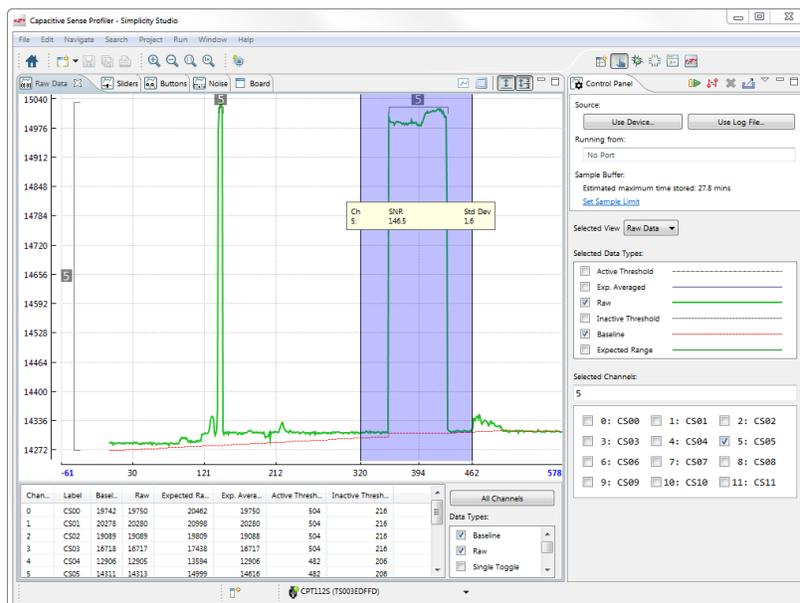


**Note:** The User Guide for CPT007B SLEX8007A board contains more information about interfacing the device with other MCUs, using the [**Xpress Configurator**] for simple configurations, and other features.

- Touch and Visualize

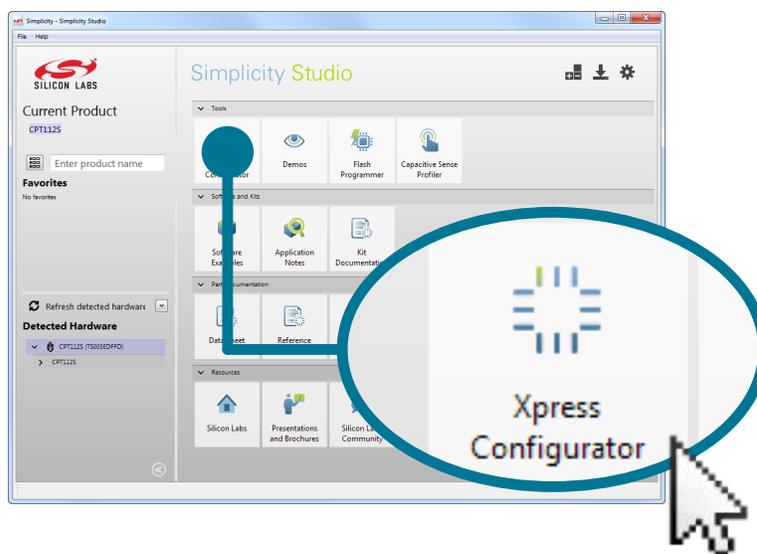
The [**Capacitive Sense Profiler**] indicates touches, raw and processed data, and noise information in a simple-to-use GUI.

1. Touch and release any of the capacitive sensing buttons on the board. The profiler will display the measured raw data, touch detection points, and baseline.



- Change the Device Configuration

Based on the performance of the device in [Capacitive Sense Profiler], change the capacitive sense input configuration using [Xpress Configurator].



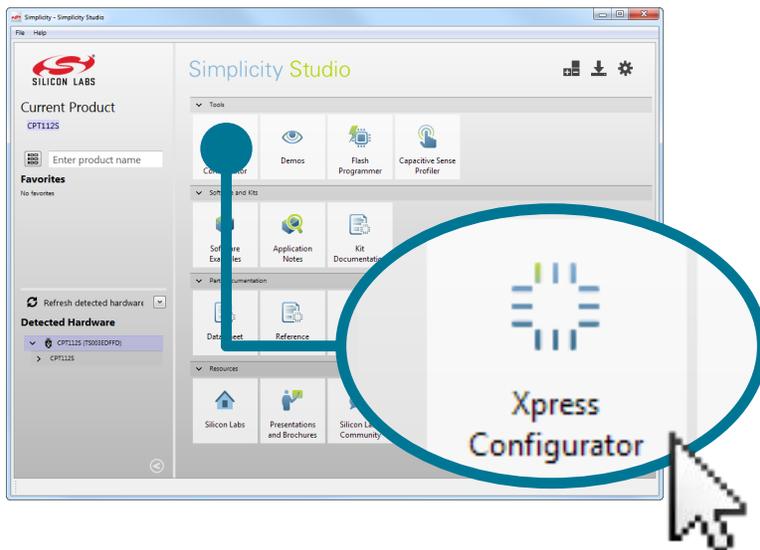
- Utilize the Available Resources

The next section includes additional resources available for the device, including software examples, documentation, and application notes.

## 2. Resources

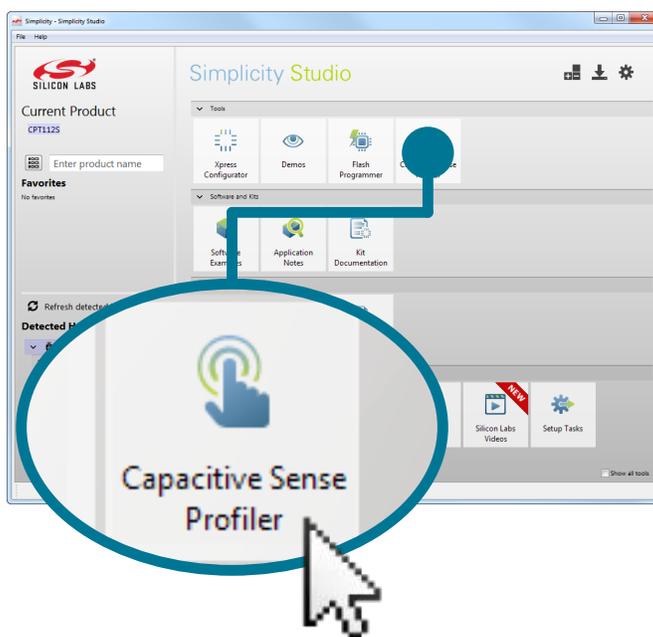
### Xpress Configurator

The capacitive sense inputs can be configured for different thresholds, debounce counter values, scan periods, gain, scanning methods, touch time-outs, and touch exclusiveness by using the [Xpress Configurator] tile.



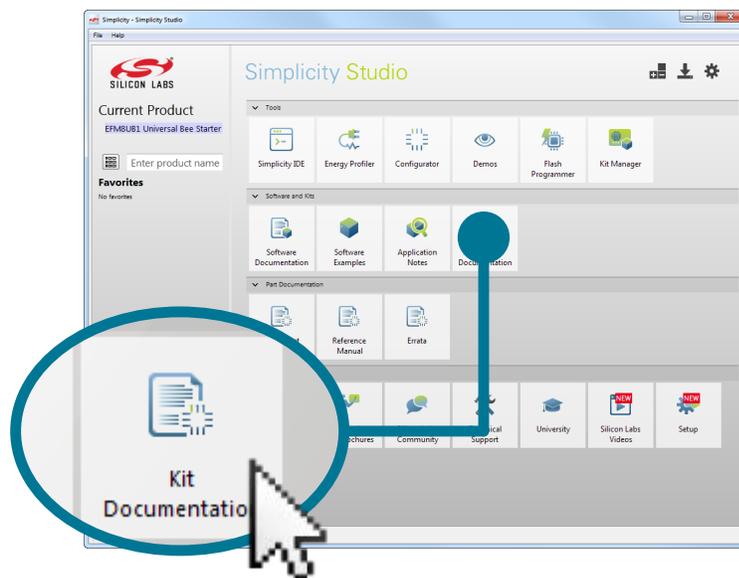
### Capacitive Sense Profiler

View touch data from the device and analyze the capacitive sensing system using the [Capacitive Sense Profiler] tile.



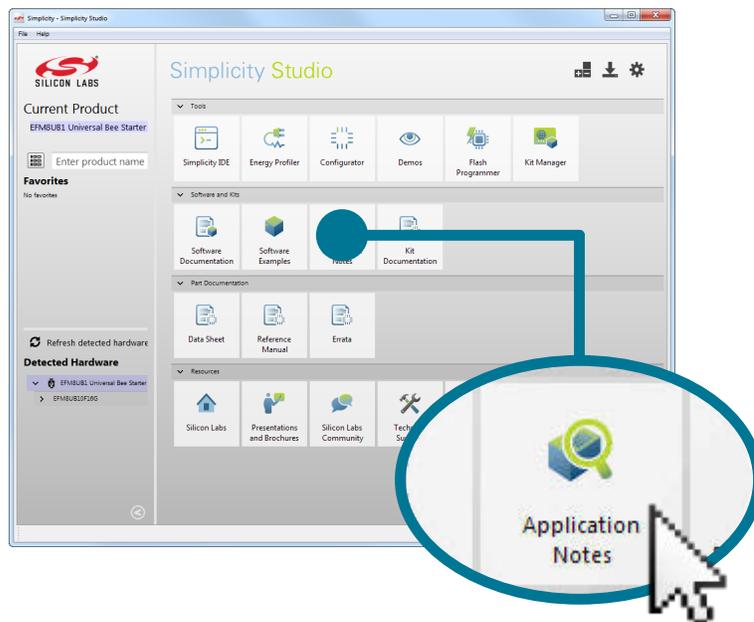
## Kit Documentation and User's Guide

Kit documentation like the schematic and detailed board description can be found using the [Kit Documentation] tile. The User's Guide will be a valuable document to reference while using the device.



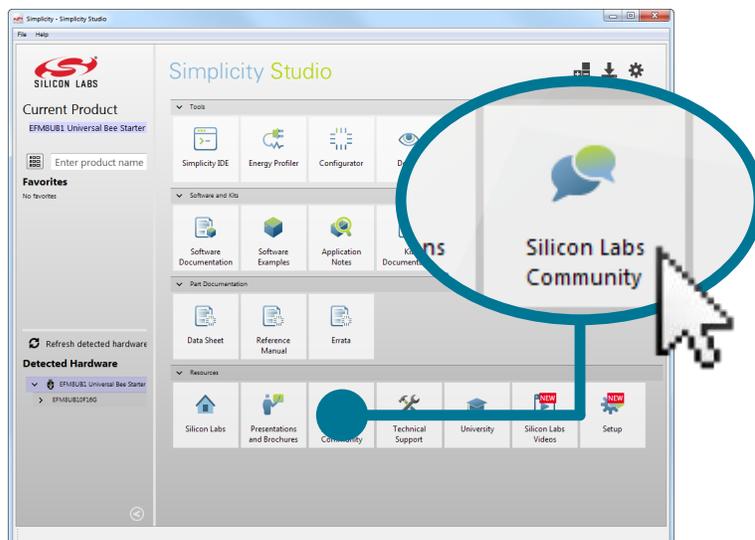
## Application Notes

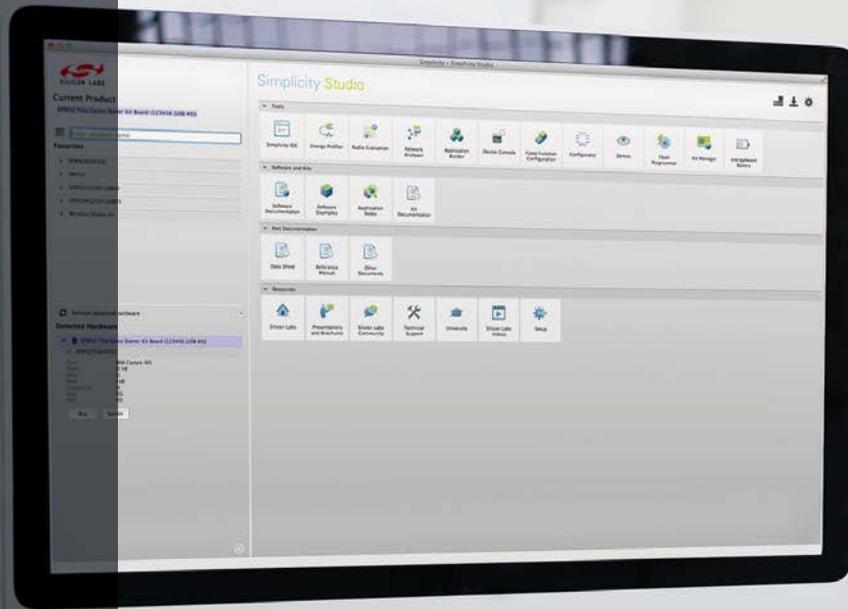
Application Notes on peripherals and other various topics can be accessed using the [Application Notes] tile.



## Community and Support

Have a question? Visit the community by clicking the [Community] tile.





## Simplicity Studio

One-click access to MCU and wireless tools, documentation, software, source code libraries & more. Available for Windows, Mac and Linux!



**IoT Portfolio**  
[www.silabs.com/iot](http://www.silabs.com/iot)



**SW/HW**  
[www.silabs.com/simplicity](http://www.silabs.com/simplicity)



**Quality**  
[www.silabs.com/quality](http://www.silabs.com/quality)



**Support and Community**  
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