

QSG146: CPT212B SLEXP8018A Kit

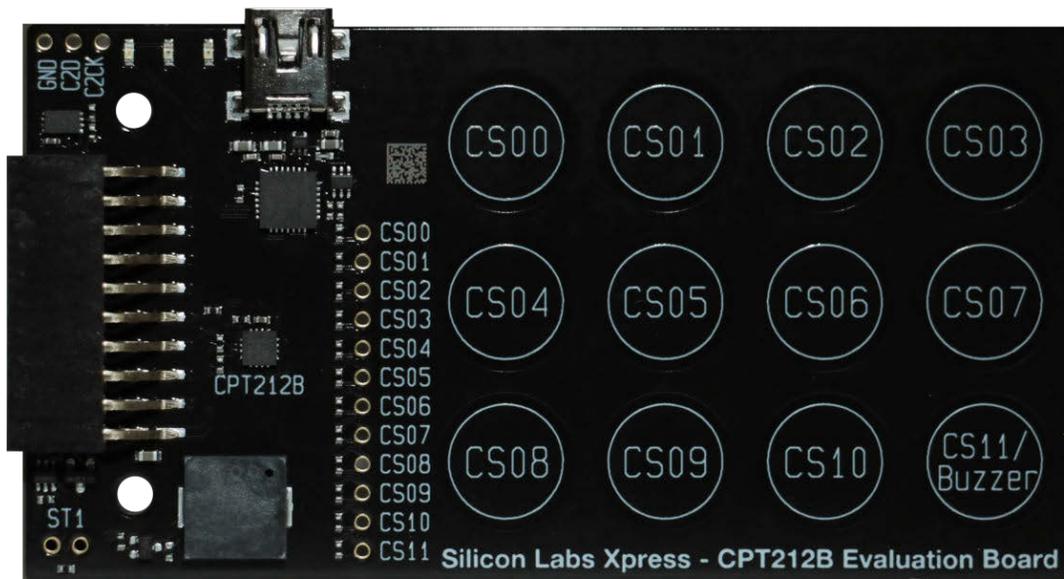
Quick-Start Guide

The CPT212B SLEXP8018A kit is designed to showcase the various touch features of the CPT212B I2C Capacitive Sense devices.

The device features capacitive sensing input engine with 12 inputs, buzzer feedback, capacitive proximity sensing input and other features, making it ideal for many capacitive touch applications.

KIT CONTENTS

- CPT212B Capacitive Sense Evaluation Board
- 1 x mini USB cable
- 1 x acrylic overlay
- Getting Started card

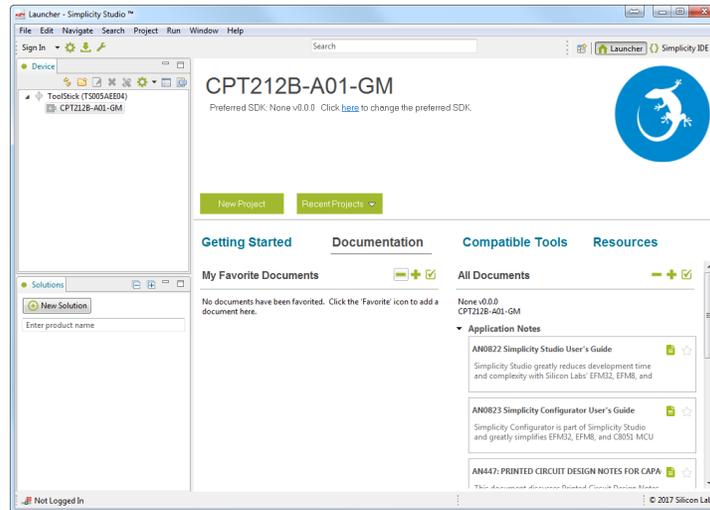


1. Getting Started

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:

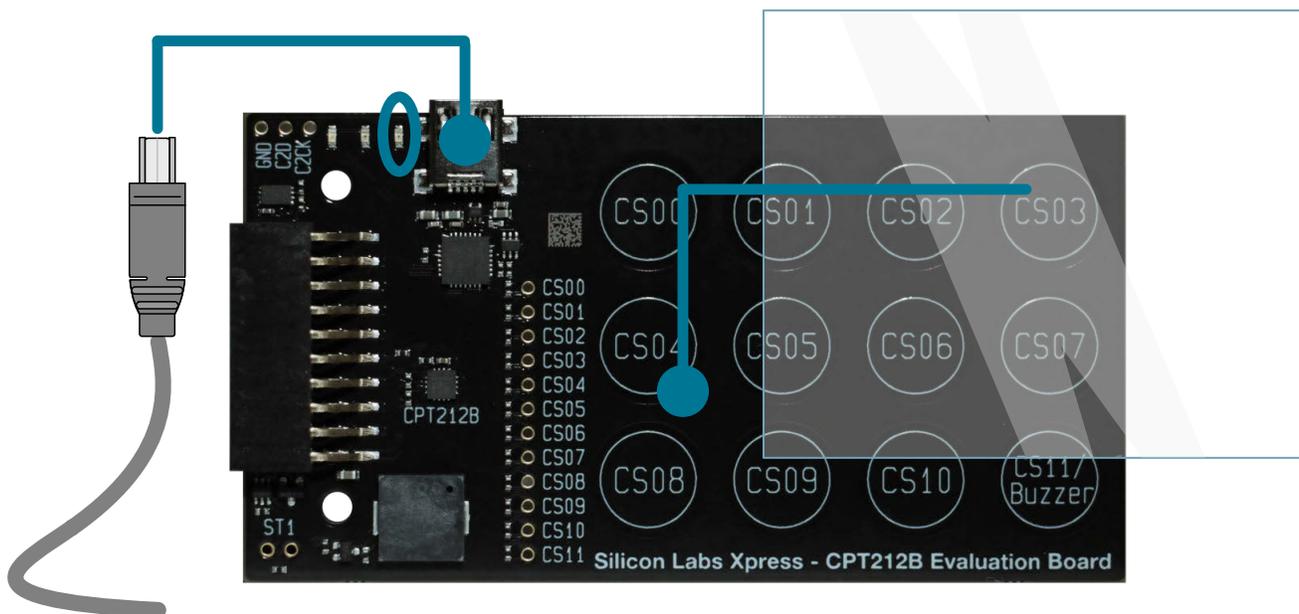
<http://www.silabs.com/simplicity-studio>



Note: The board comes pre-loaded with a default configuration that enables all 12 sensors to qualify touches and expects a 1/16th inch overlay on the touch surface.

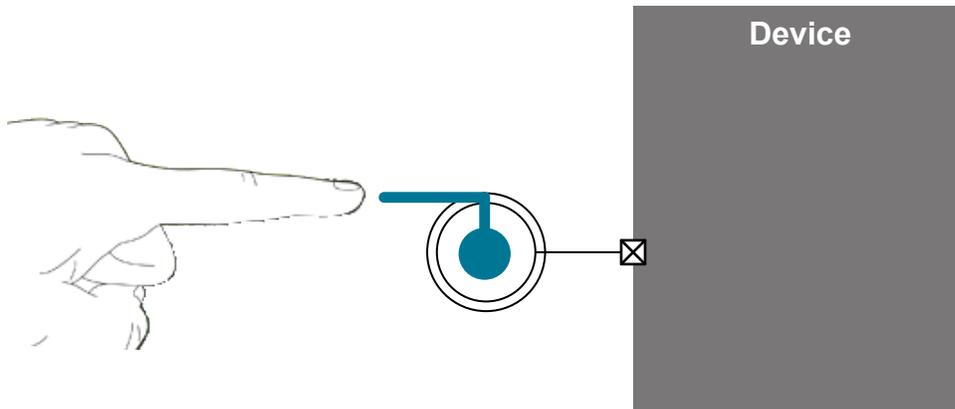
Set Up Your Kit

1. Provide power to the board by connecting the 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

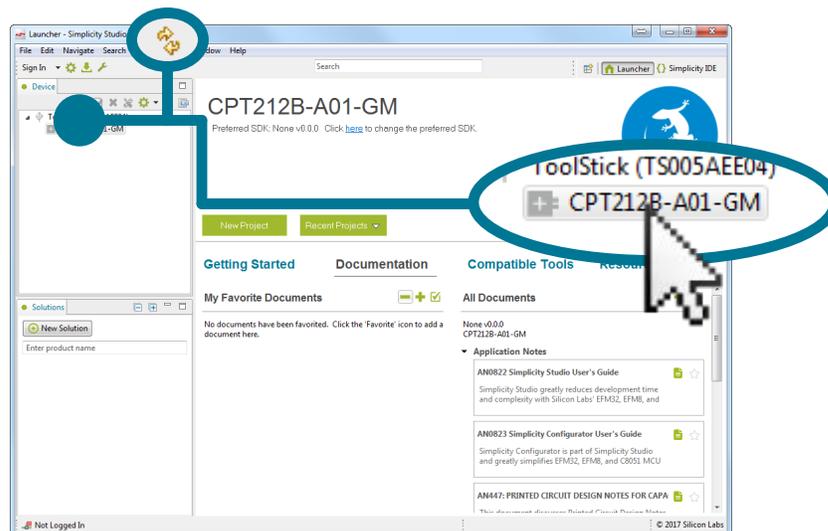
1. Place a finger on any one of the buttons: CS00, CS01, ... , CS11.



2. The CS11 button is enabled in the default configuration of the board, and the buzzer is disabled by default.

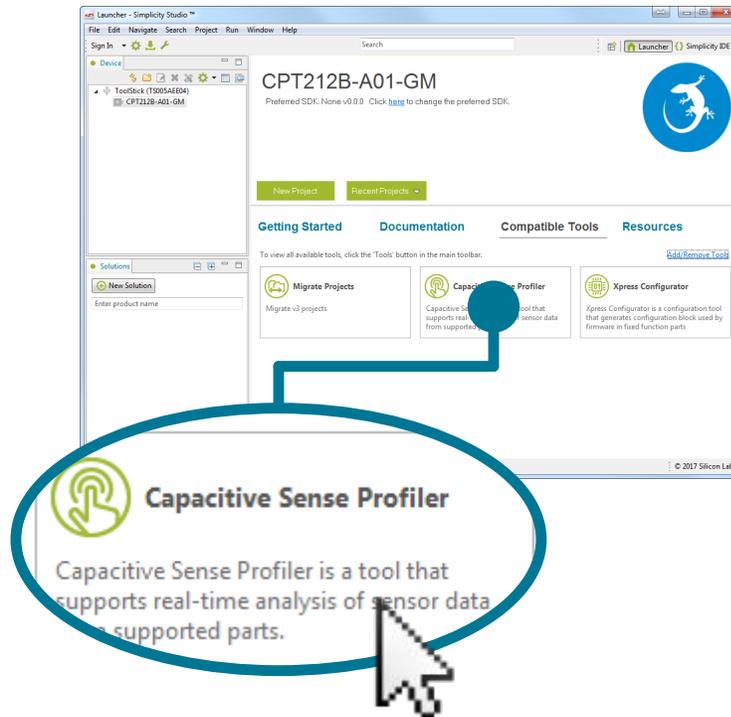
Detect Your Device

1. Click the **[Refresh]** button in the **[Device]** area. The board may take some time to appear due to driver installations for the debug adapter.
2. Click the CPT212B device. This will verify that the installation was successful, identify the TouchXpress device on the hardware, and automatically configure the software tools for use with your device.



View the Capacitive Sensing Data

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

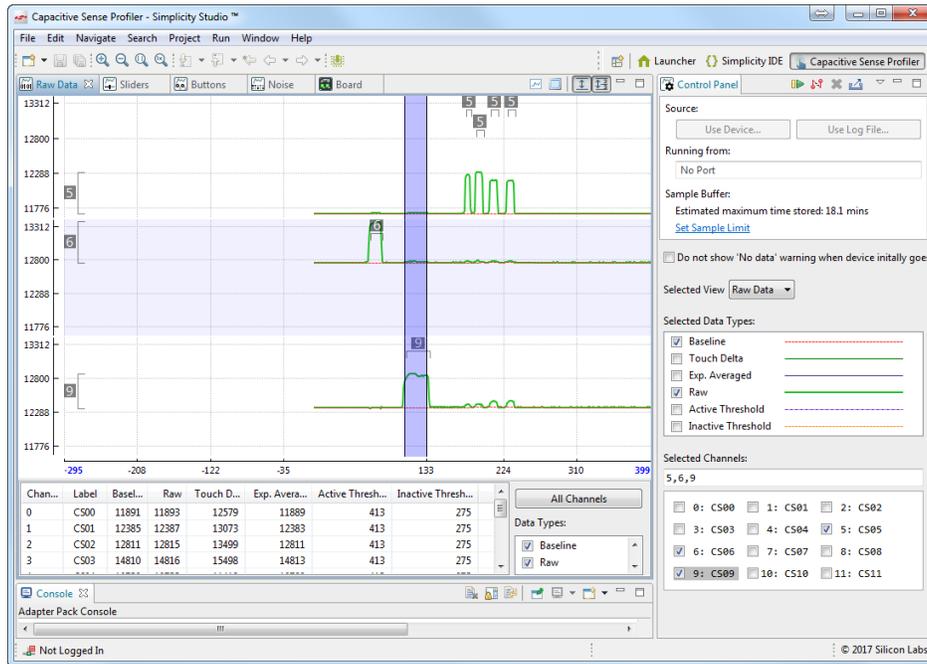


Note: The User Guide for the CPT212B SLEXP8018A board contains more information about interfacing the device with other MCUs, using the **[Xpress Configurator]** for simple configurations, and other features.

Touch and Visualize

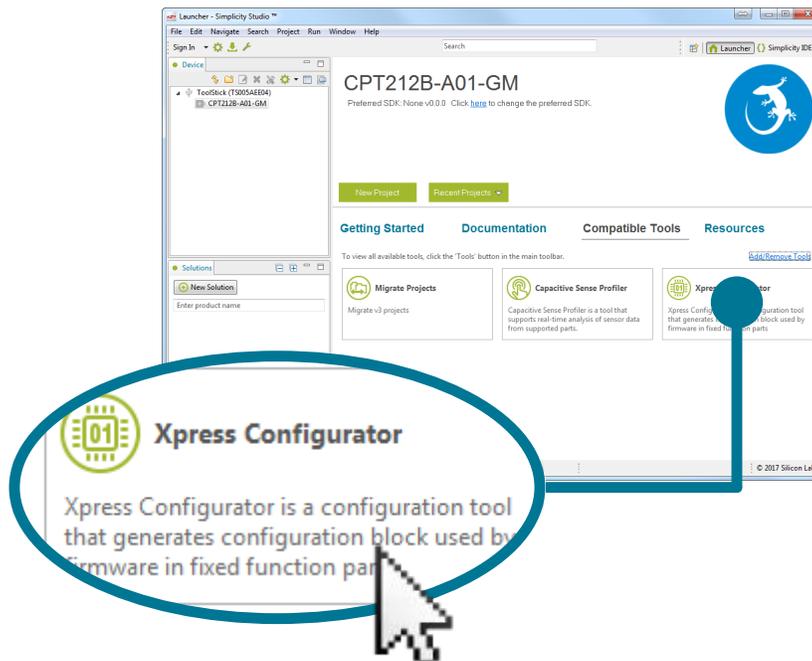
The [Capacitive Sense Profiler] indicates touches, raw and processed data, and noise information in a simple-to-use GUI.

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] in the [Compatible Tools] area.



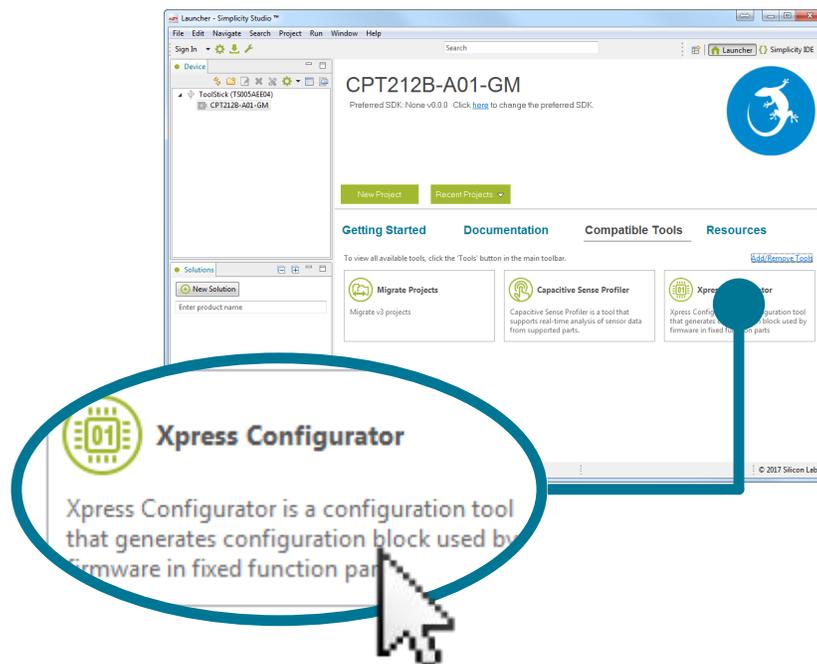
Utilize the Available Resources

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

2. Resources

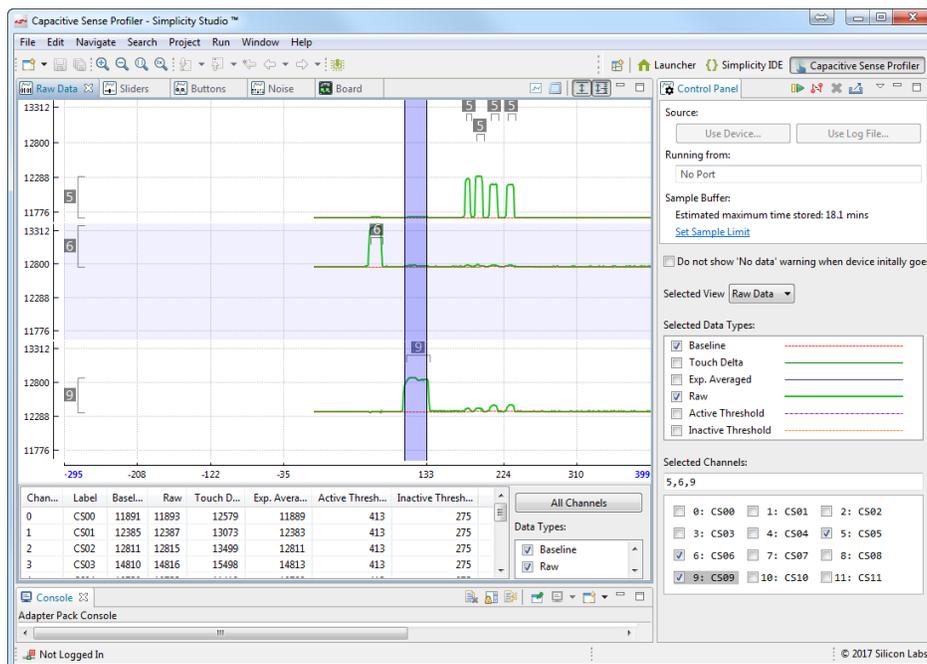
Xpress Configurator

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 **[Xpress Configurator]** in the **[Compatible Tools]** area.



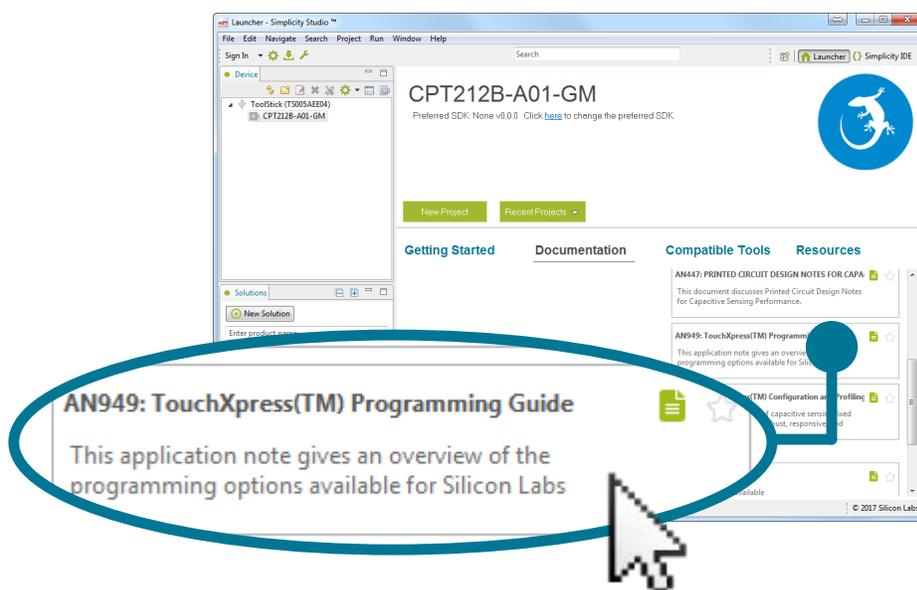
Capacitive Sense Profiler

View touch data from the device and analyze the capacitive sensing system using **[Capacitive Sense Profiler]** in the **[Compatible Tools]** area.



Documentation

All documents related to the device can be found in the **[Documentation]** area, including device data sheets, kit user guides, and application notes. The User's Guide will be a valuable document to reference while using the device.



Community and Support

Have a question? Visit the community by clicking the **[Community]** link in the **[Resources]** area.



Silicon Labs

Simplicity Studio™4



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/loT



SW/HW
www.silabs.com/simplicity



Quality
www.silabs.com/quality



Support and Community
community.silabs.com

Disclaimer

Silicon Labs intends to provide customers with the latest, accurate, and in-depth documentation of all peripherals and modules available for system and software implementers using or intending to use the Silicon Labs products. Characterization data, available modules and peripherals, memory sizes and memory addresses refer to each specific device, and "Typical" parameters provided can and do vary in different applications. Application examples described herein are for illustrative purposes only. Silicon Labs reserves the right to make changes without further notice and limitation to product information, specifications, and descriptions herein, and does not give warranties as to the accuracy or completeness of the included information. Silicon Labs shall have no liability for the consequences of use of the information supplied herein. This document does not imply or express copyright licenses granted hereunder to design or fabricate any integrated circuits. The products are not designed or authorized to be used within any Life Support System without the specific written consent of Silicon Labs. A "Life Support System" is any product or system intended to support or sustain life and/or health, which, if it fails, can be reasonably expected to result in significant personal injury or death. Silicon Labs products are not designed or authorized for military applications. Silicon Labs products shall under no circumstances be used in weapons of mass destruction including (but not limited to) nuclear, biological or chemical weapons, or missiles capable of delivering such weapons.

Trademark Information

Silicon Laboratories Inc.®, Silicon Laboratories®, Silicon Labs®, SiLabs® and the Silicon Labs logo®, Bluegiga®, Bluegiga Logo®, Clockbuilder®, CMEMS®, DSPLL®, EFM®, EFM32®, EFR®, Ember®, Energy Micro, Energy Micro logo and combinations thereof, "the world's most energy friendly microcontrollers", Ember®, EZLink®, EZRadio®, EZRadioPRO®, Gecko®, ISOModem®, Micrium, Precision32®, ProSLIC®, Simplicity Studio®, SiPHY®, Telegesis, the Telegesis Logo®, USBXpress®, Zentri and others are trademarks or registered trademarks of Silicon Labs. ARM, CORTEX, Cortex-M3 and THUMB are trademarks or registered trademarks of ARM Holdings. Keil is a registered trademark of ARM Limited. All other products or brand names mentioned herein are trademarks of their respective holders.



SILICON LABS

Silicon Laboratories Inc.
400 West Cesar Chavez
Austin, TX 78701
USA

<http://www.silabs.com>