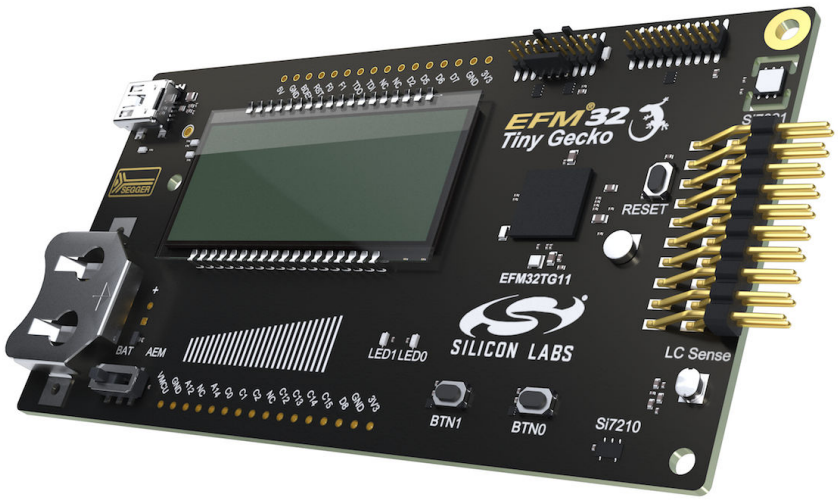
UG303: EFM32 Tiny Gecko TG11 Starter Kit User's Guide

The SLSTK3301A Starter Kit is an excellent starting point to get familiar with the EFM32™ Tiny Gecko TG11 Microcontroller.

The Starter Kit contains sensors and peripherals demonstrating some of the Tiny Gecko TG11's many capabilities. The kit provides all necessary tools for developing an EFM32 Tiny Gecko TG11 application.



TARGET DEVICE

- EFM32 Tiny Gecko TG11 Microcontroller (EFM32TG11B520F128GM80)
- CPU: 32-bit ARM® Cortex-M0+
- Memory: 128 kB flash and 32 kB RAM

KIT FEATURES

- USB connectivity
- Advanced Energy Monitor
- SEGGER J-Link on-board debugger
- Debug Multiplexer supporting external hardware as well as on-board MCU
- Silicon Labs Si7021 Relative Humidity and Temperature sensor
- User LEDs / Pushbuttons
- 8x28 Segment LCD
- Inductive LC sensor
- Silicon Labs Si7210 Hall-Effect Sensor
- Capacitive Touch Slider
- 20-pin 2.54 mm header for EXP boards
- Breakout pads for direct access to I/O pins
- Power sources include USB and CR2032 coin cell battery.

SOFTWARE SUPPORT

- Simplicity Studio™
- IAR Embedded Workbench

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1. Introduction

1.1 Description

The SLSTK3301A is an excellent starting point to get familiar with the EFM32 Tiny Gecko TG11 Microcontrollers. The kit contains sensors and peripherals demonstrating some of the EFM32 Tiny Gecko TG11's many capabilities. The kit can also serve as a starting point for application development.

In addition to supporting application development on the starter kit itself, the board is also a fully featured debugger and energy monitoring tool that can be used with external applications.

1.2 Features

- EFM32 Tiny Gecko TG11 Microcontroller
  - 128 kB Flash
  - 32 kB RAM
  - QFN80 package
- Advanced Energy Monitoring system for precise current and voltage tracking
- Integrated Segger J-Link USB debugger/emulator with the possiblity to debug external Silicon Labs devices
- 20-pin EXP header
- Breakout pads for easy access to I/O pins
- Power sources include USB and CR2032 battery
- Silicon Labs Si7021 Relative Humidity and Temperature Sensor
- Silicon Labs Si7210 Hall-Effect sensor
- 8x28 segment LCD
- 2 push buttons and 2 LEDs connected to EFM32 for user interaction
- LC tank circuit for inductive proximity sensing of metallic objects
- Backup capacitor
- Capacitive touch slider
- CAN support through optional Isolated CAN EXP board (not included). For more information see https://www.silabs.com/products/development-tools/isolation/isolated-can-evaluation-kit
- Crystals for LFXO and HFXO: 32.768 kHz and 48.000 MHz.

1.3 Getting Started

Detailed instructions for how to get started with your new SLSTK3301A can be found on the Silicon Labs web pages:

https://www.silabs.com/start-efm32tg1

2. Kit Block Diagram

An overview of the EFM32 Tiny Gecko TG11 Starter Kit is shown in the figure below.

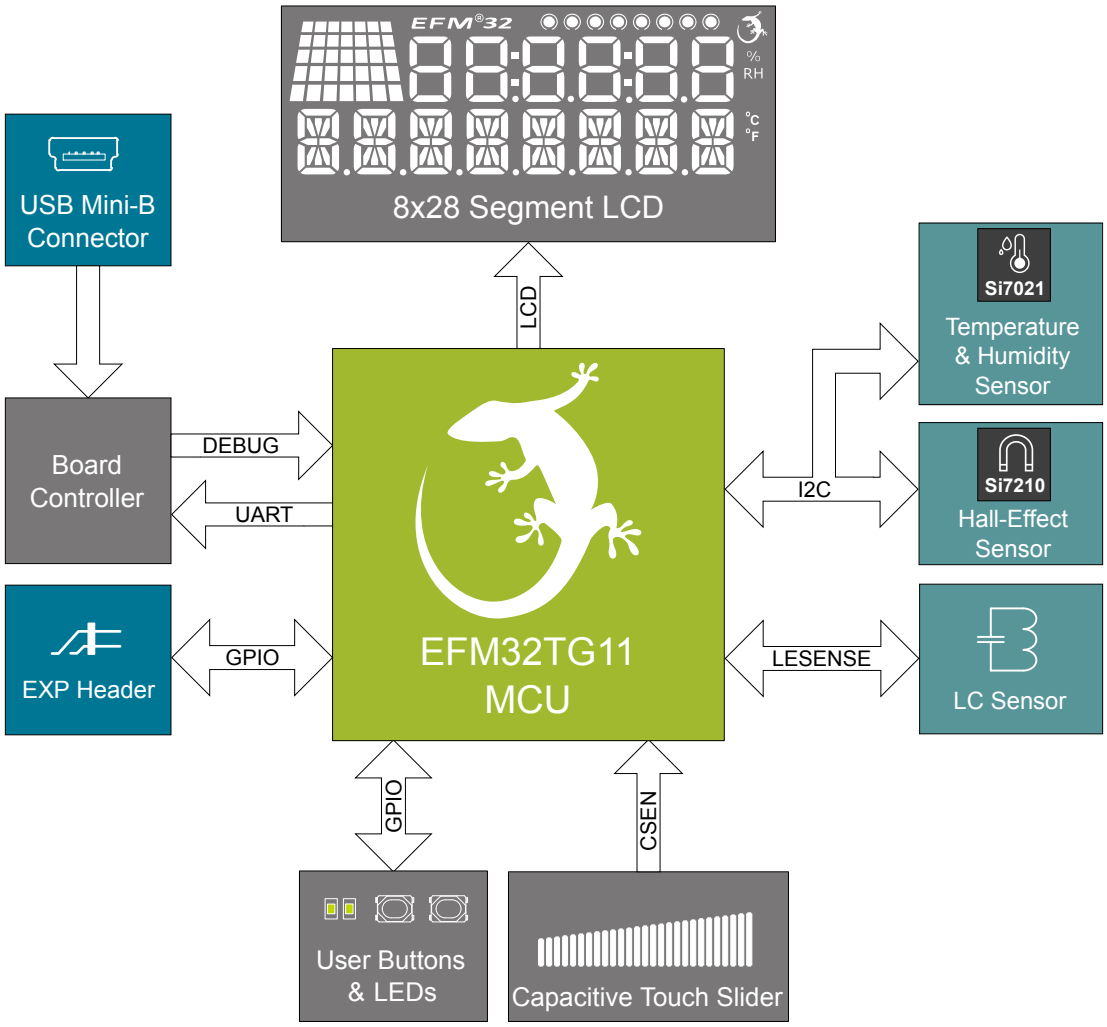


Figure 2.1. Kit Block Diagram

3. Kit Hardware Layout

The layout of the EFM32 Tiny Gecko TG11 Starter Kit is shown below.

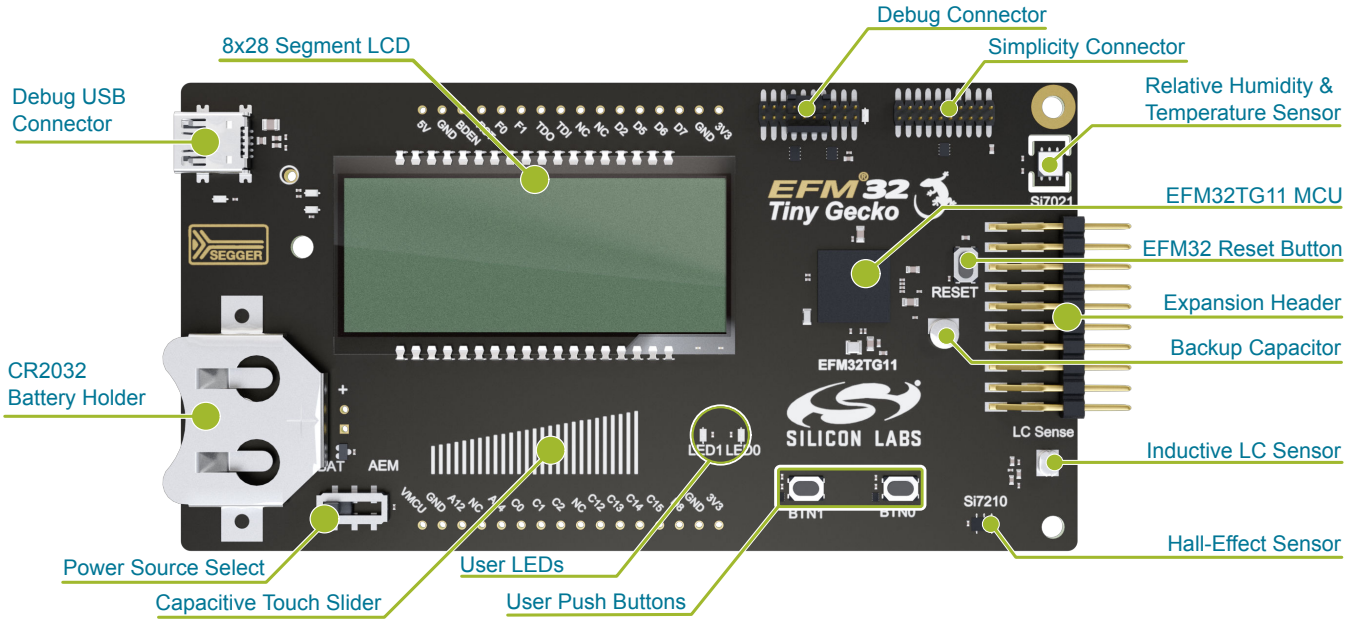


Figure 3.1. SLSTK3301A Hardware Layout

4. Connectors

4.1 Breakout Pads

Most of the EFM32's GPIO pins are available on two pin header rows at the top and bottom edges of the board. These have a standard 2.54 mm pitch, and pin headers can be soldered in if required. In addition to the I/O pins, connections to power rails and ground are also provided. Note that some of the pins are used for kit peripherals or features, and may not be available for a custom application without tradeoffs.

The figure below shows the pinout of the breakout pads, as well as the pinout of the EXP header on the right edge of the board. The EXP header is further explained in the next section. The breakout pad connections are also printed in silk screen next to each pin for easy reference.

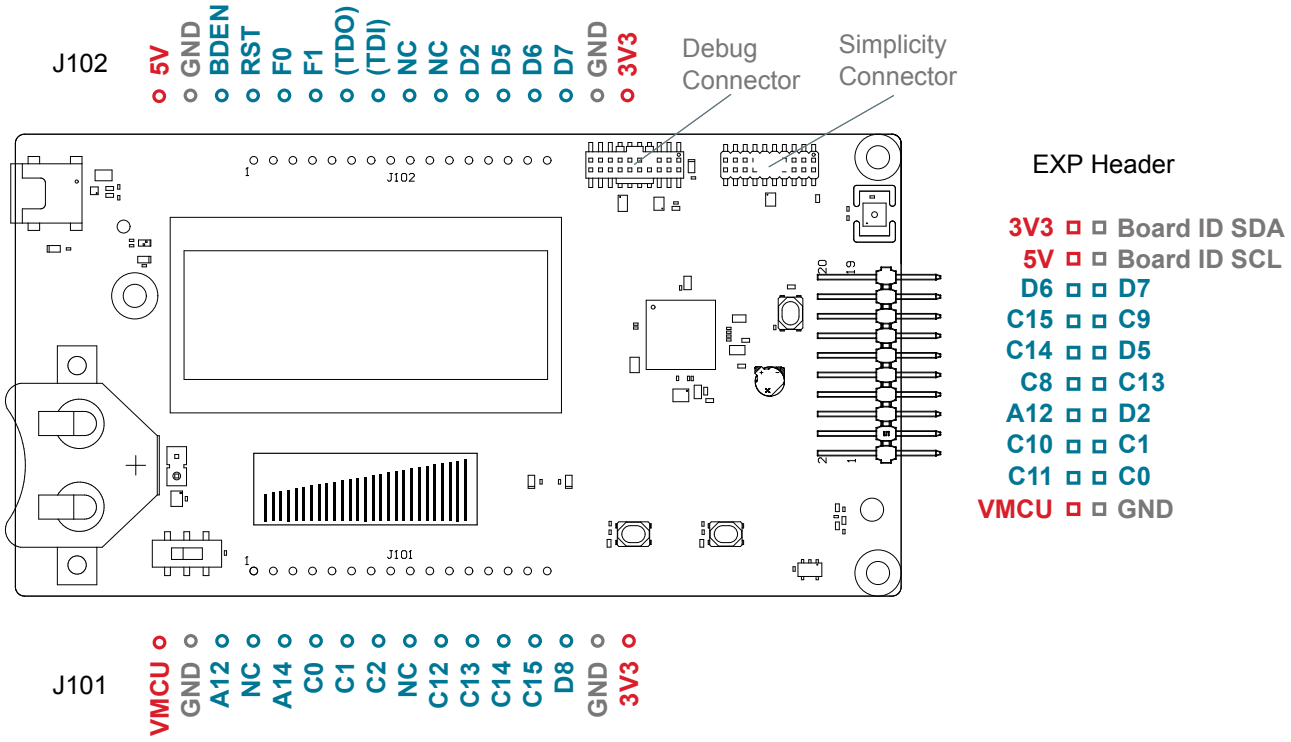


Figure 4.1. Breakout Pads and Expansion Header

The table below shows the connections of each pin of the breakout pads. It also shows which kit peripherals or features that are connected to the different pins.

Table 4.1. Bottom Row (J101) Pinout

Pin	EFM32 I/O pin	Shared feature
1	VMCU	EFM32 voltage domain (measured by AEM)
2	GND	Ground
3	PA12	
4	NC	
5	PA14	LCD_BEXT
6	PC0	CAN_RX / EXP3
7	PC1	CAN_TX / EXP5
8	PC2	LED1
9	NC	

Pin	EFM32 I/O pin	Shared feature
10	PC12	SENSOR_ENABLE
11	PC13	Si7210_VOUT / EXP9
12	PC14	UART_TX / EXP12
13	PC15	UART_RX / EXP14
14	PD8	BU_VIN (connected to backup battery)
15	GND	Ground
16	3V3	Board controller supply

Table 4.2. Top Row (J102) Pinout

Pin	EFM32 I/O pin	Shared feature
1	5V	Board USB voltage
2	GND	Ground
3	BDEN	EFM32 BOD_ENABLE
4	RST	EFM32 DEBUG_RESETn
5	PF0	EFM32 DEBUG_TCK_SWCLK
6	PF1	EFM32 DEBUG_TMS_SWDIO
7	NC (TDO)	Install 0R resistor R300 to connect to PF2 (TDO)
8	NC (TDI)	Install 0R resistor R301 to connect to PF5 (TDI)
9	NC	
10	NC	
11	PD2	LED0 / EXP7
12	PD5	BUTTON0 / EXP11
13	PD6	SENSOR_I2C_SDA / EXP16
14	PD7	SENSOR_I2C_SCL / EXP15
15	GND	Ground
16	3V3	Board controller supply

4.2 EXP Header

On the right hand side of the board an angled 20-pin EXP header is provided to allow connection of peripherals or EXP boards. The connector contains a number of I/O pins that can be used with most of the EFM32 Tiny Gecko TG11's features. Additionally, the VMCU, 3V3 and 5V power rails are also exported.

The connector follows a standard which ensures that commonly used peripherals such as an SPI, a UART and an I2C bus are available on fixed locations in the connector. The rest of the pins are used for general purpose I/O. This allows the definition of expansion boards that can plug into a number of different Silicon Labs starter kits.

The figure below shows the pin assignment of the expansion header for the EFM32 Tiny Gecko TG11 Starter Kit. Because of limitations in the number of available GPIO pins, some of the expansion header pins are shared with kit features.

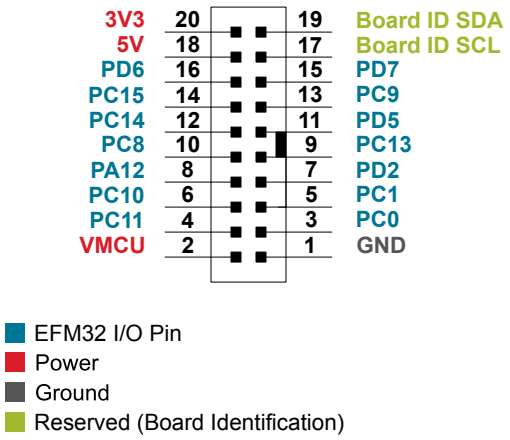


Figure 4.2. EXP Header

Table 4.3. EXP Header Pinout

Pin	Connection	EXP Header function	Shared feature	Peripheral mapping
20	3V3	Board controller supply		
18	5V	Board controller USB voltage		
16	PD6	I2C_SDA	SENSOR_I2C_SDA	I2C0_SDA #1
14	PC15	UART_RX		LEUART0_RX #5
12	PC14	UART_TX		LEUART0_TX #5
10	PC8	SPI_CS		USART0_CS #2
8	PA12	SPI_SCLK		USART0_CLK #5
6	PC10	SPI_MISO		USART0_RX #2
4	PC11	SPI_MOSI		USART0_TX #2
2	VMCU	EFM32 voltage domain, included in AEM measurements.		
19	BOARD_ID_SDA	Connected to Board Controller for identification of add-on boards.		
17	BOARD_ID_SCL	Connected to Board Controller for identification of add-on boards.		
15	PD7	I2C_SCL	SENSOR_I2C_SCL	I2C0_SCL #1
13	PC9	GPIO	BUTTON1	
11	PD5	OPAMP_OUT	BUTTON0	OPA2_OUT

Pin	Connection	EXP Header function	Shared feature	Peripheral mapping
9	PC13	GPIO	Si7210_VOUT	PCNT0_S0IN #0 / LES_CH13
7	PD2	GPIO	LED0	
5	PC1	CAN_TX		CAN0_TX #0
3	PC0	CAN_RX		CAN0_RX #0
1	GND	Ground		

4.3 Debug Connector (DBG)

The debug connector serves a dual purpose, based on the debug mode which can be set up using Simplicity Studio. If the "Debug IN" mode is selected the connector allows an external debugger to be used with the on-board EFM32. If the "Debug OUT" mode is selected the connector allows the kit to be used as a debugger towards an external target. If the "Debug MCU" mode (default) is selected the connector is isolated from the debug interface of both the Board Controller and the on-board target device.

Because this connector is automatically switched to support the different operating modes, it is only available when the Board Controller is powered (J-Link USB cable connected). If debug access to the target device is required when the Board Controller is unpowered, this should be done by connecting directly to the appropriate pins on the breakout header.

The pinout of the connector follows that of the standard ARM Cortex Debug 19-pin connector. The pinout is described in detail below. Note that even though the connector supports JTAG in addition to Serial Wire Debug, it does not necessarily mean that the kit or the on-board target device supports this.

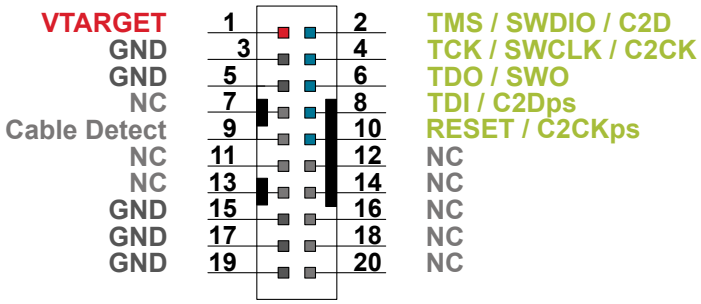


Figure 4.3. Debug Connector

Even though the pinout matches the pinout of an ARM Cortex Debug connector, these are not fully compatible as pin 7 is physically removed from the Cortex Debug connector. Some cables have a small plug that prevent them from being used when this pin is present. If this is the case, remove the plug, or use a standard 2x10 1.27 mm straight cable instead.

Table 4.4. Debug Connector Pin Descriptions

Pin number(s)	Function	Note
1	VTARGET	Target reference voltage. Used for shifting logical signal levels between target and debugger.
2	TMS / SDWIO / C2D	JTAG test mode select, Serial Wire data or C2 data
4	TCK / SWCLK / C2CK	JTAG test clock, Serial Wire clock or C2 clock
6	TDO/SWO	JTAG test data out or Serial Wire Output
8	TDI / C2Dps	JTAG test data in, or C2D "pin sharing" function
10	RESET / C2CKps	Target device reset, or C2CK "pin sharing" function
12	NC	Not connected
14	NC	Not connected
16	NC	Not connected
18	NC	Not connected
20	NC	Not connected
9	Cable detect	Connect to ground
11, 13	NC	Not connected
3, 5, 15, 17, 19	GND	

4.4 Simplicity Connector

The Simplicity Connector featured on the Starter Kit enables advanced debugging features such as the AEM and the Virtual COM port to be used towards an external target. The pinout is illustrated in the figure below.

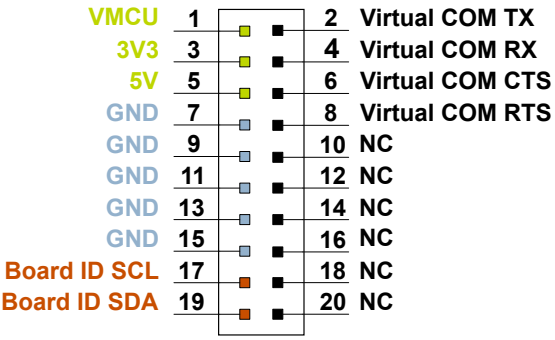


Figure 4.4. Simplicity Connector

The signal names in the figure and the pin description table are referenced from the board controller. This means that VCOM_TX should be connected to the RX pin on the external target, VCOM_RX to the target's TX pin, VCOM_CTS to the target's RTS pin and VCOM_RTS to the target's CTS pin.

Note: Current drawn from the VMCU voltage pin is included in the AEM measurements, while the 3V3 and 5V voltage pins are not. To monitor the current consumption of an external target with the AEM, put the on-board MCU in its lowest energy mode to minimize its impact on the measurements.

Table 4.5. Simplicity Connector Pin Descriptions

Pin number(s)	Function	Description
1	VMCU	3.3 V power rail, monitored by the AEM
3	3V3	3.3 V power rail
5	5V	5 V power rail
2	VCOM_TX	Virtual COM Tx
4	VCOM_RX	Virtual COM Rx
6	VCOM_CTS	Virtual COM CTS
8	VCOM_RTS	Virtual COM RTS
17	EXT_ID_SCL	Board ID SCL
19	EXT_ID_SDA	Board ID SDA
10, 12, 14, 16, 18, 20	NC	Not connected
7, 9, 11, 13, 15	GND	Ground

5. Power Supply and Reset

5.1 MCU Power Selection

The EFM32 on the Starter Kit can be powered by one of these sources:

- The debug USB cable; or
- a 3 V coin cell battery.

The power source for the MCU is selected with the slide switch in the lower left corner of the Starter Kit. Figure 5.1 Power Switch on page 13 shows how the different power sources can be selected with the slide switch.

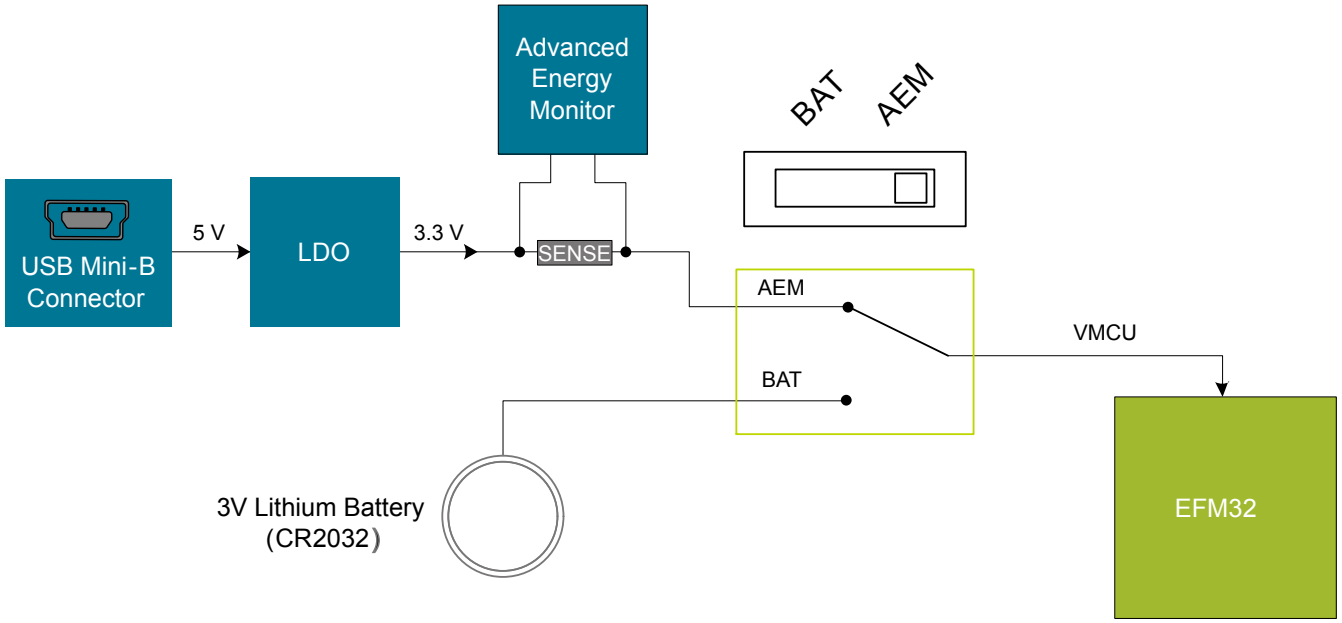


Figure 5.1. Power Switch

With the switch in the **AEM** position, a low noise 3.3 V LDO on the Starter Kit is used to power the EFM32. This LDO is again powered from the debug USB cable. The Advanced Energy Monitor is now connected in series, allowing accurate high speed current measurements and energy debugging/profiling.

With the switch in the **BAT** position, a 20 mm coin cell battery in the CR2032 socket can be used to power the device. With the switch in this position no current measurements are active. This is the recommended switch position when powering the MCU with an external power source.

Note: The Advanced Energy Monitor can only measure the current consumption of the EFM32 when the power selection switch is in the **AEM** position.

5.2 Board Controller Power

The board controller is responsible for important features such as the debugger and the Advanced Energy Monitor, and is powered exclusively through the USB port in the top left corner of the board. This part of the kit resides on a separate power domain, so a different power source can be selected for the target device while retaining debugging functionality. This power domain is also isolated to prevent current leakage from the target power domain when power to the Board Controller is removed.

The board controller power domain is not influenced by the position of the power switch.

The kit has been carefully designed to keep the board controller and the target power domains isolated from each other as one of them powers down. This ensures that the target EFM32 device will continue to operate in the **BAT** mode.

5.3 EFM32 Reset

The EFM32 MCU can be reset by a few different sources:

- A user pressing the RESET button
- The on-board debugger pulling the #RESET pin low
- An external debugger pulling the #RESET pin low

In addition to the reset sources mentioned above, a reset to the EFM32 will also be issued during board controller boot-up. This means that removing power to the board controller (unplugging the J-Link USB cable) will not generate a reset, but plugging the cable back in will, as the board controller boots up.

6. Peripherals

The starter kit has a set of peripherals that showcase some of the features of the EFM32.

Be aware that most EFM32 I/O routed to peripherals are also routed to the breakout pads. This must be taken into consideration when using the breakout pads for your application.

6.1 Push Buttons and LEDs

The kit has two user push buttons marked PB0 and PB1. They are connected directly to the EFM32, and are debounced by RC filters with a time constant of 1 ms. The buttons are connected to pins PD5 and PC9.

The kit also features two yellow LEDs marked LED0 and LED1, that are controlled by GPIO pins on the EFM32. The LEDs are connected to pins PD2 and PC2 in an active-high configuration.

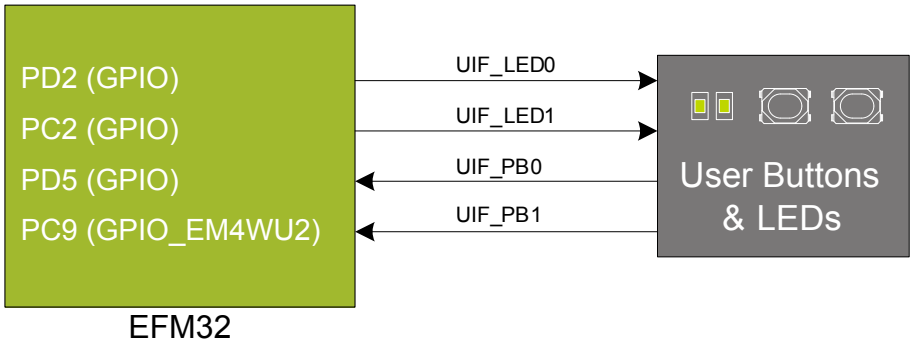


Figure 6.1. Buttons and LEDs

6.2 LCD

A 36-pin segment LCD is connected to the EFM32's LCD peripheral. The LCD has 8 common lines and 28 segment lines, giving a total of 224 segments in octaplex mode. These lines are not shared on the breakout pads.

It is possible to operate only half of the display using 4 common lines giving access to 112 segments in quadruplex mode. This is accomplished by only operating common lines COM0-3 or COM4-7, while leaving the other four common lines disabled. Please refer to the kit schematics for details about which segments that will be available when operating the display in this manner.

A capacitor connected to the EFM32 LCD peripheral's voltage boost pin is also available on the kit.

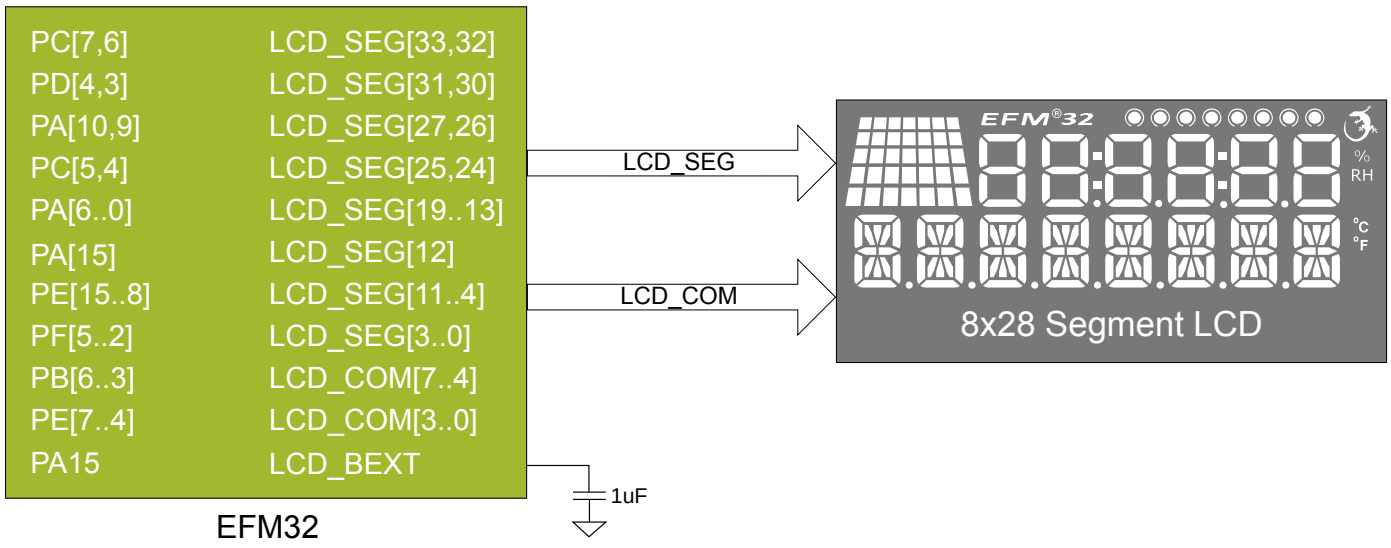


Figure 6.2. Segment LCD

6.3 Capacitive Touch Slider

A touch slider utilizing the capacitive touch capability of the EFM32 is located on the bottom side of the board. It consists of two interleaved pads which are connected to PA13 and PB12.

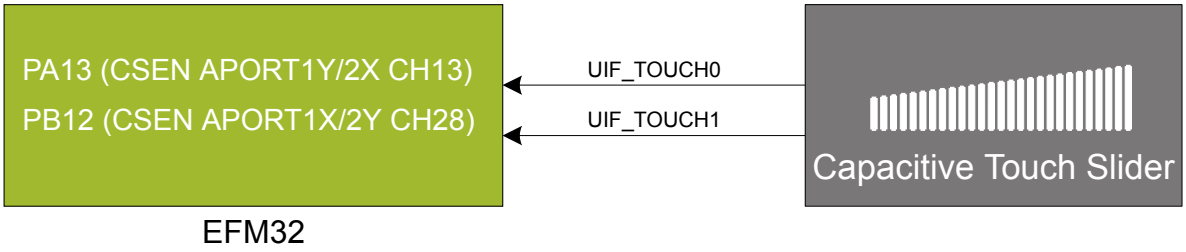


Figure 6.3. Touch Slider

The capacitive touch pads work by sensing changes in the capacitance of the pads when touched by a human finger. Sensing the changes in capacitance is done by setting up the EFM32's analog capacitive sense peripheral (CSEN).

6.4 Si7021 Relative Humidity and Temperature Sensor

The Si7021 I^{2}C relative humidity and temperature sensor is a monolithic CMOS IC integrating humidity and temperature sensor elements, an analog-to-digital converter, signal processing, calibration data, and an I^{2}C Interface. The patented use of industry-standard, low-K polymeric dielectrics for sensing humidity enables the construction of low-power, monolithic CMOS Sensor ICs with low drift and hysteresis, and excellent long term stability.

The humidity and temperature sensors are factory-calibrated and the calibration data is stored in the on-chip non-volatile memory. This ensures that the sensors are fully interchangeable, with no recalibration or software changes required.

The Si7021 is available in a 3x3 mm DFN package and is reflow solderable. It can be used as a hardware- and software-compatible drop-in upgrade for existing RH/ temperature sensors in 3x3 mm DFN-6 packages, featuring precision sensing over a wider range and lower power consumption. The optional factory-installed cover offers a low profile, convenient means of protecting the sensor during assembly (e.g., reflow soldering) and throughout the life of the product, excluding liquids (hydrophobic/oleophobic) and particulates.

The Si7021 offers an accurate, low-power, factory-calibrated digital solution ideal for measuring humidity, dew-point, and temperature, in applications ranging from HVAC/R and asset tracking to industrial and consumer platforms.

The I^{2}C bus used for the Si7021, including the pull-up resistors is shared with the Expansion Header as well as the Si7210 hall-effect sensor. The relative humidity and temperature sensor, the hall-effect sensor and pull-up resistors are normally isolated from the I^{2}C line. To use the sensor, PC12 must be set high, which also powers the Si7210. When enabled, the sensors' current consumption is included in the AEM measurements.

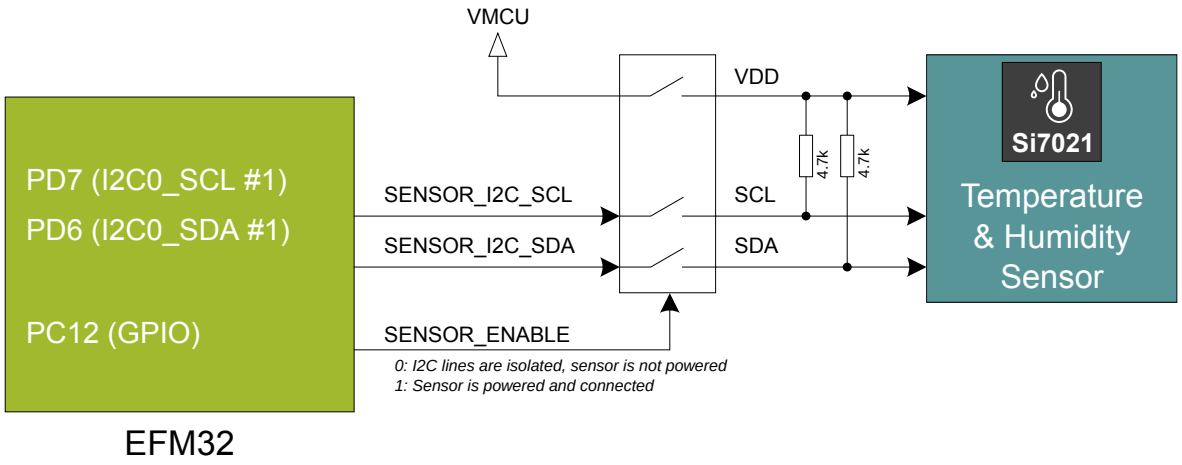


Figure 6.4. Si7021 Relative Humidity and Temperature Sensor

Please refer to the Silicon Labs web pages for more information: http://www.silabs.com/humidity-sensors

6.5 Si7210 Hall-Effect Sensor

The Si7210 family of hall effect sensors from Silicon Labs combines a chopper-stabilized hall element with a low-noise analog amplifier, 13-bit analog-to-digital converter, and an I²C interface. Leveraging Silicon Labs' proven CMOS design techniques, the Si7210 family incorporates digital signal processing to provide precise compensation for temperature and offset drift.

The 13-bit magnetic field strength can be read through the I²C interface at any time. The Si7210 also features an output pin which can provide a digital alert when the measured field is above or below a programmable threshold value.

Applications for the Si7210 include mechanical position sensing in consumer, industrial and automotive applications, reed switch replacement, fluid level measurement, speed sensing and control knobs and switches.

The I²C bus used for the Si7210, including the pull-up resistors is shared with the Expansion Header as well as the Si7021 relative humidity and temperature (RHT) sensor. The hall-effect sensor, the RHT sensor and the pull-up resistors are normally isolated from the I²C line. To use the sensor, PC12 must be set high, which also powers the Si7021. When enabled, the sensors' current consumption is included in the AEM measurements.

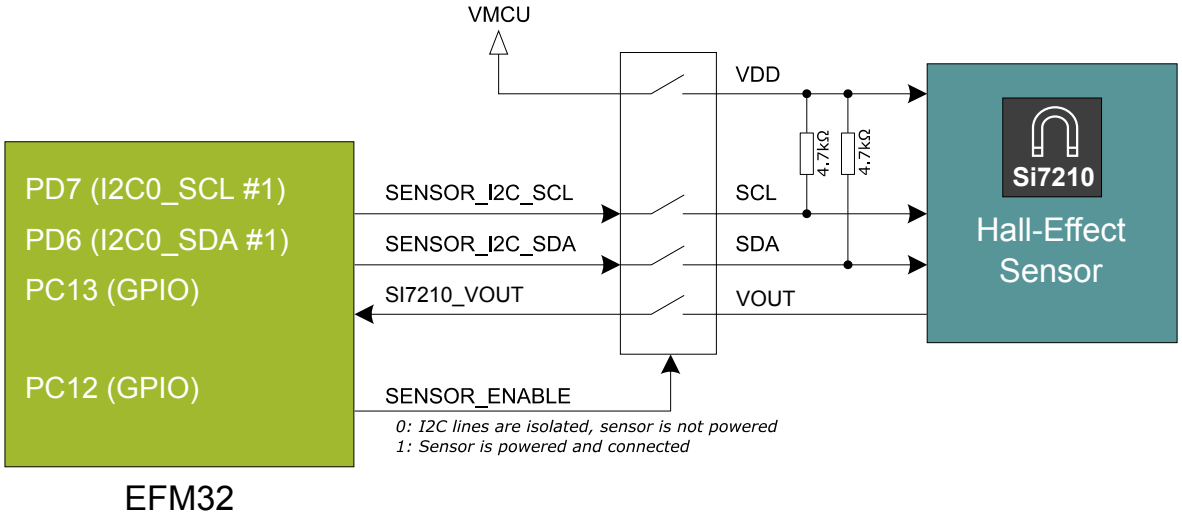


Figure 6.5. Si7210 Hall-Effect Sensor

Please refer to the Silicon Labs web pages for more information: http://www.silabs.com/magnetic-sensors

6.6 LC Sensor

In the bottom right corner of the board there is an inductive-capacitive sensor for demonstrating the low energy sensor interface (LESENSE). The LESENSE peripheral uses the voltage digital-to-analog converter (VDAC) to set up an oscillating current through the inductor, and then uses the analog comparator (ACMP) to measure the oscillation decay time. The oscillation decay time will be affected by the presence of metal objects within a few millimeters of the inductor.

The LC sensor can be used for implementing a sensor that wakes up the EFM32 from sleep when a metal object comes close to the inductor, which again can be used as a utility meter pulse counter, door alarm switch, position indicator or other applications where one wants to sense the presence of a metal object.

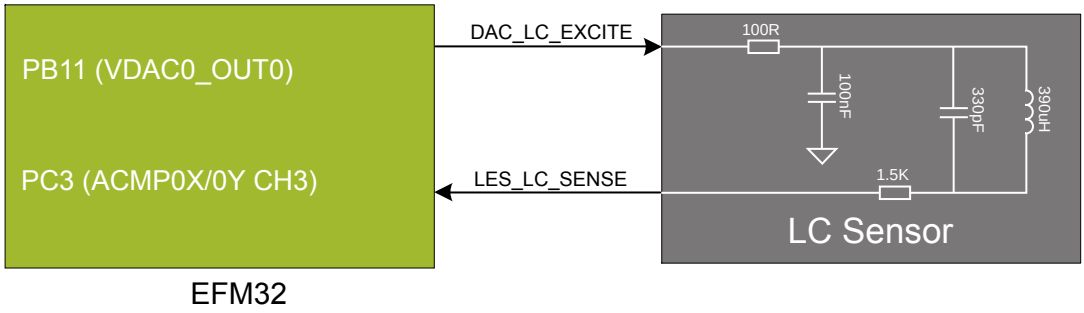


Figure 6.6. LC Metal Sensor

For more information about usage and theory of operation of the LC sensor, please refer to application note *AN0029 Low Energy Sensor Interface - Inductive Sense*, which is can be found in Simplicity Studio or in the document library on the Silicon Labs website.

6.7 Virtual COM Port

An asynchronous serial connection to the board controller is provided for application data transfer between a host PC and the target EFM32. This eliminates the need for an external serial port adapter.

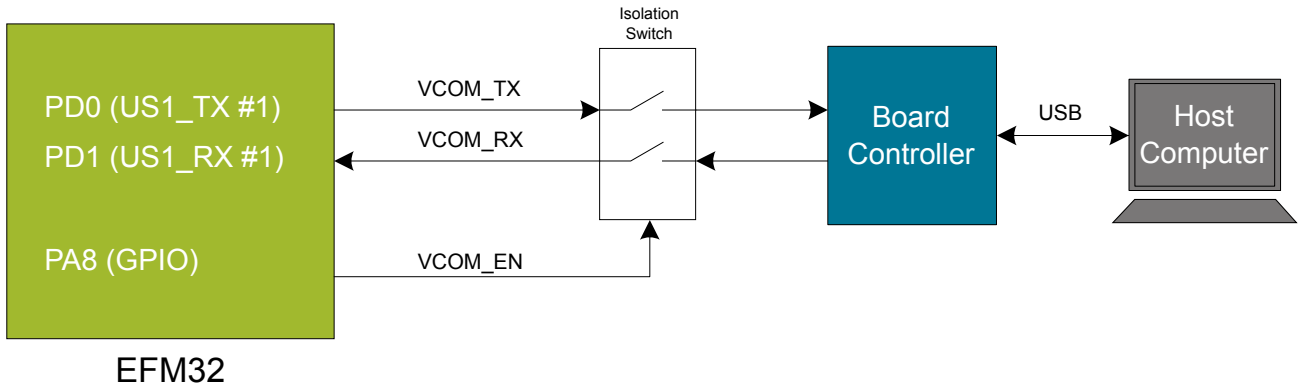


Figure 6.7. Virtual COM Port Interface

The Virtual COM port consists of a physical UART between the target device and the board controller, and a logical function in the board controller that makes the serial port available to the host PC over USB. The UART interface consists of two pins and an enable signal.

Table 6.1. Virtual COM Port Interface Pins

Signal	Description
VCOM_TX	Transmit data from the EFM32 to the board controller
VCOM_RX	Receive data from the board controller to the EFM32
VCOM_ENABLE	Enables the VCOM interface, allowing data to pass through to the board controller.

Note: The VCOM port is only available when the board controller is powered, which requires the J-Link USB cable to be inserted.

7. Advanced Energy Monitor

7.1 Usage

The AEM (Advanced Energy Monitor) data is collected by the board controller and can be displayed by the Energy Profiler, available through Simplicity Studio. By using the Energy Profiler, current consumption and voltage can be measured and linked to the actual code running on the EFM32 in realtime.

7.2 Theory of Operation

In order to be able to accurately measure current ranging from 0.1 µA to 47 mA (114 dB dynamic range), a current sense amplifier is utilized together with a dual gain stage. The current sense amplifier measures the voltage drop over a small series resistor, and the gain stage further amplifies this voltage with two different gain settings to obtain two current ranges. The transition between these two ranges occurs around 250 µA. Digital filtering and averaging is done within the Board Controller before the samples are exported to the Energy Profiler application.

During startup of the kit, an automatic calibration of the AEM is performed. This calibration compensates for the offset error in the sense amplifiers.

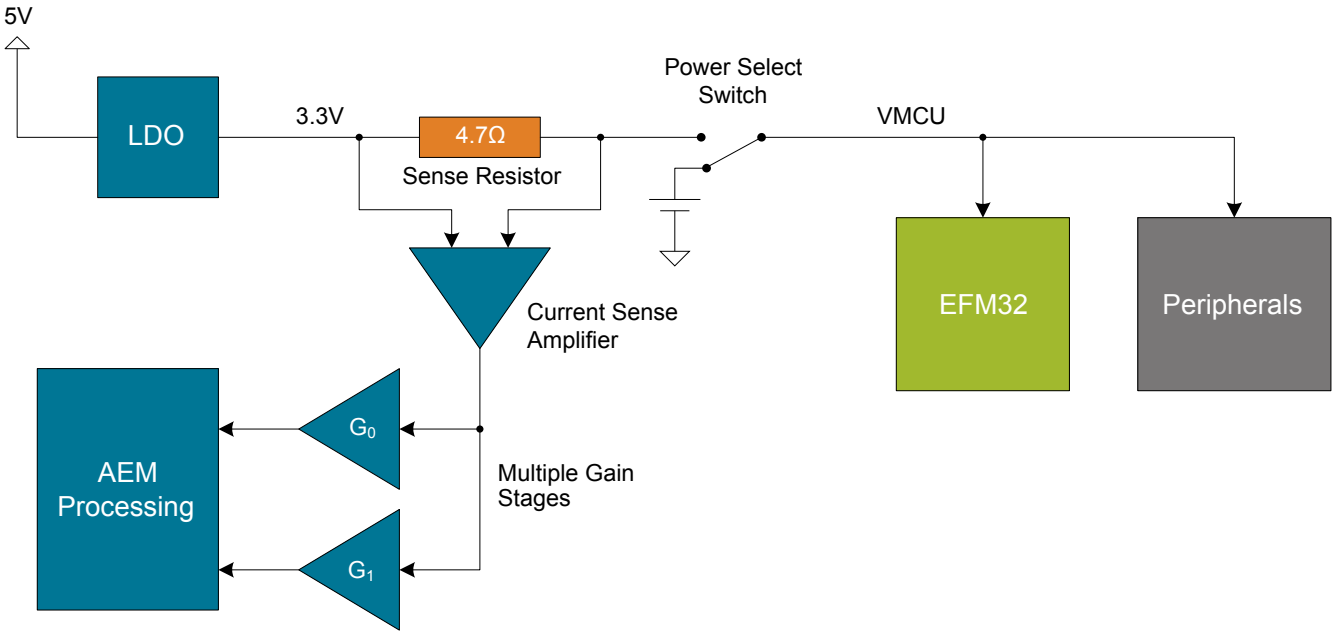


Figure 7.1. Advanced Energy Monitor

7.3 Accuracy and Performance

The Advanced Energy Monitor is capable of measuring currents in the range of 0.1 µA to 47 mA. For currents above 250 µA, the AEM is accurate within 0.1 mA. When measuring currents below 250 µA, the accuracy increases to 1 µA. Even though the absolute accuracy is 1 µA in the sub 250 µA range, the AEM is able to detect changes in the current consumption as small as 100 nA. The AEM produces 6250 current samples per second.

8. On-Board Debugger

The SLSTK3301A contains an integrated debugger, which can be used to download code and debug the EFM32. In addition to programming the EFM32 on the kit, the debugger can also be used to program and debug external Silicon Labs EFM32, EFM8, EZR32 and EFR32 devices.

The debugger supports three different debug interfaces used with Silicon Labs devices:

- Serial Wire Debug, which is used with all EFM32, EFR32 and EZR32 devices
- JTAG, which can be used with EFR32 and some EFM32 devices
- C2 Debug, which is used with EFM8 devices

In order for debugging to work properly, make sure you have the appropriate debug interface selected that works with your device. The debug connector on the board supports all three of these modes.

8.1 Debug Modes

Programming external devices is done by connecting to a target board through the provided debug connector, and by setting the debug mode to [**Out**]. The same connector can also be used to connect an external debugger to the EFM32 MCU on the kit, by setting debug mode to [**In**].

Selecting the active debug mode is done in Simplicity Studio.

Debug MCU: In this mode, the on-board debugger is connected to the EFM32 on the kit.

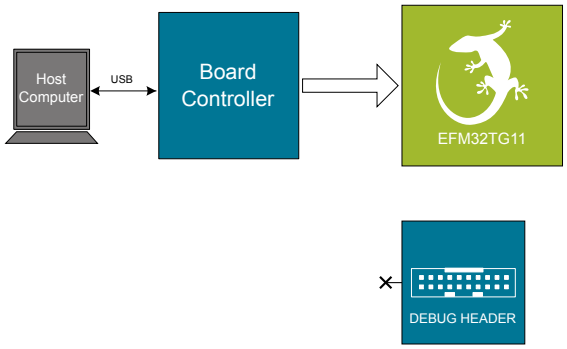


Figure 8.1. Debug MCU

Debug OUT: In this mode, the on-board debugger can be used to debug a supported Silicon Labs device mounted on a custom board.

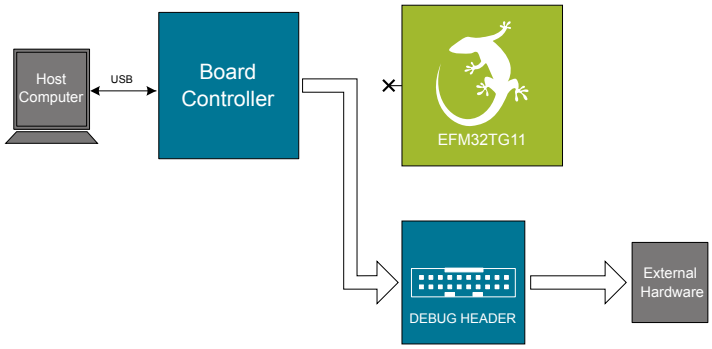


Figure 8.2. Debug OUT

Debug IN: In this mode, the on-board debugger is disconnected, and an external debugger can be connected to debug the EFM32 on the kit.

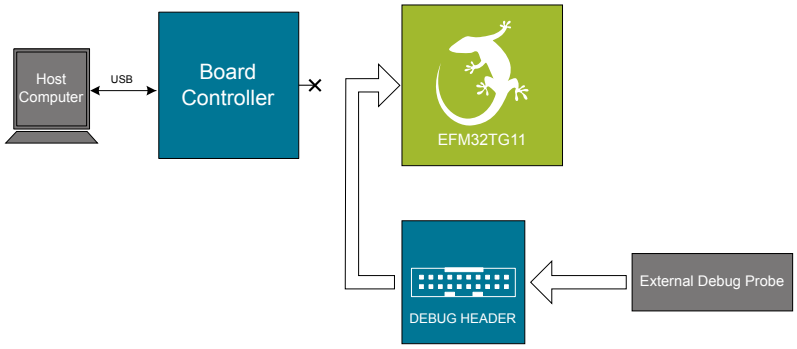


Figure 8.3. Debug IN

Note: For "Debug IN" to work, the kit board controller must be powered through the Debug USB connector.

8.2 Debugging During Battery Operation

When the EFM32 is powered by battery and the J-Link USB is still connected, the on-board debug functionality is available. If the USB power is disconnected, the Debug IN mode will stop working.

If debug access is required when the target is running off another energy source, such as a battery, and the board controller is powered down, the user should make direct connections to the GPIO used for debugging. This can be done by connecting to the appropriate pins of the breakout pads. Some Silicon Labs kits provide a dedicated pin header for this purpose.

9. Kit Configuration and Upgrades

The kit configuration dialog in Simplicity Studio allows you to change the J-Link adapter debug mode, upgrade its firmware, and change other configuration settings. To download Simplicity Studio, go to http://www.silabs.com/simplicity.

In the main window of the Simplicity Studio's Launcher perspective, the debug mode and firmware version of the selected J-Link adapter is shown. Click the [**Change**] link next to any of them to open the kit configuration dialog.

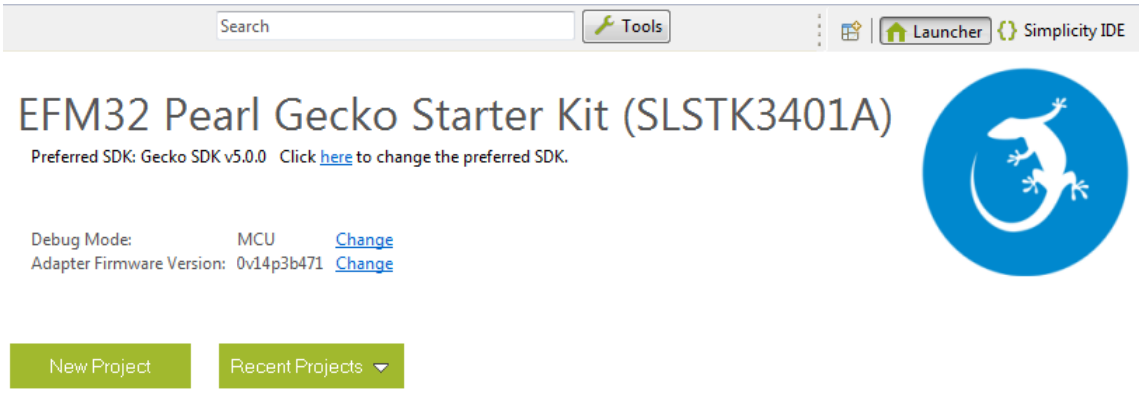


Figure 9.1. Simplicity Studio Kit Information

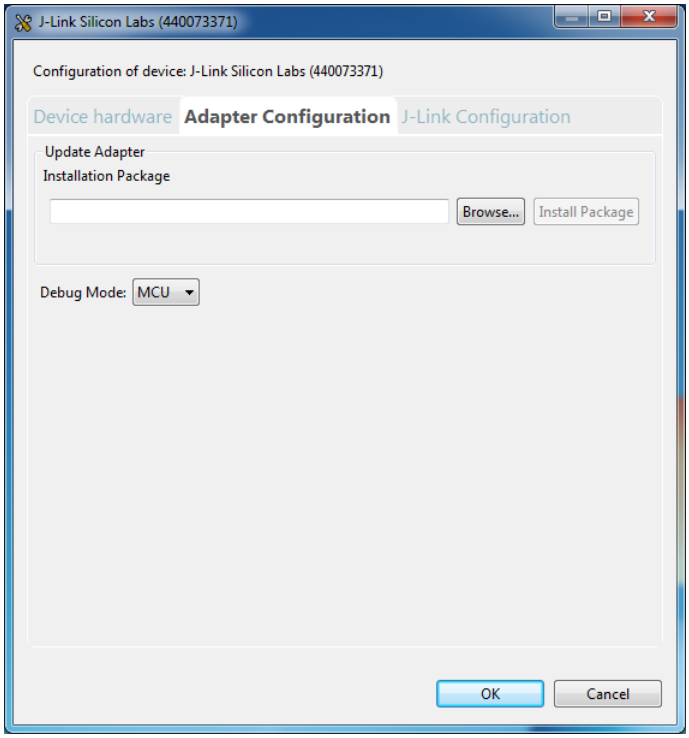


Figure 9.2. Kit Configuration Dialog

9.1 Firmware Upgrades

Upgrading the kit firmware is done through Simplicity Studio. Simplicity Studio will automatically check for new updates on startup.

You can also use the kit configuration dialog for manual upgrades. Click the [**Browse**] button in the [**Update Adapter**] section to select the correct file ending in `.emz`. Then, click the [**Install Package**] button.

10. Schematics, Assembly Drawings, and BOM

Schematics, assembly drawings, and bill of materials (BOM) are available through Simplicity Studio when the kit documentation package has been installed.

11. Kit Revision History and Errata

11.1 Revision History

The kit revision can be found printed on the box label of the kit, as outlined in the figure below.



Figure 11.1. Revision Info

Table 11.1. Kit Revision History

Kit Revision	Released	Description
A00	2018-02-26	Initial Kit Revision.

11.2 Errata

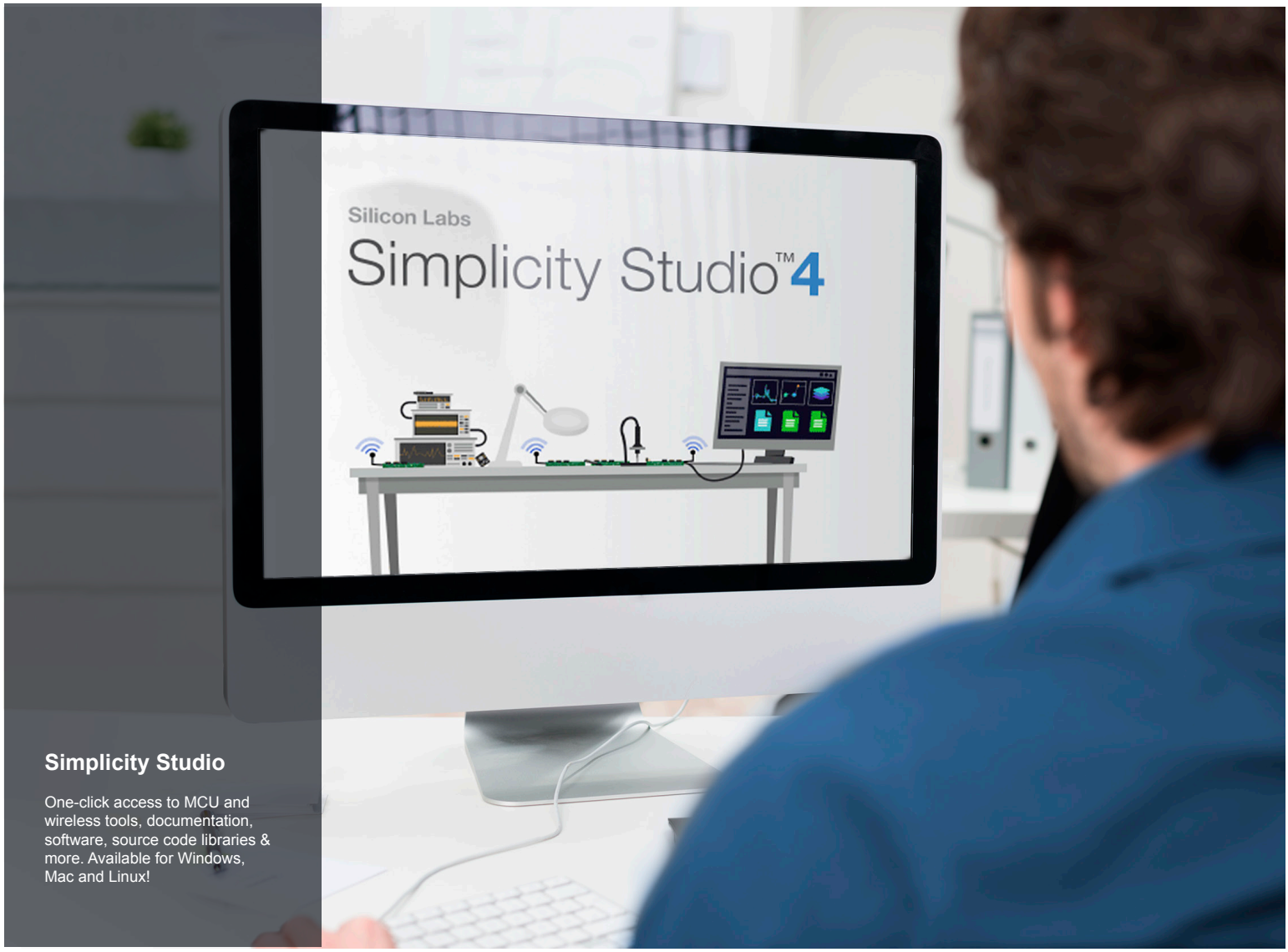
There are no known errata at present.

12. Document Revision History

Revision 1.0

February, 2018

Initial document version.



Simplicity Studio

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

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