- UDP MCU card
- Silicon Laboratories USB Debug Adapter
- UDP I/O card(s)
- UDP Motherboard
- Silicon Laboratories USB Debug Adapter
- Supporting Cables and Power Supplies

**Enhanced Development Kit**

- UDP MCU card
- Silicon Laboratories USB Debug Adapter
- Supporting Cables and Power Supplies

# PRECISION32™ MCU DEVELOPMENT KIT QUICK-START GUIDE FOR KITS FEATURING THE UNIFIED DEVELOPMENT PLATFORM (UDP)

The Precision32™ MCU Development Kits are available in a low cost Development Kit and a fully featured Enhanced Development Kit. Kit contents are described below. All development kits come with an MCU card, USB Debug Adapter, and all necessary cables and power supplies needed to evaluate hardware and develop code. The Enhanced Development Kits additionally contain a UDP Motherboard and one or more I/O cards to enhance the user experience.

## EVALUATION BOARD/KIT IMPORTANT NOTICE

Silicon Laboratories Inc. and its affiliated companies ("Silicon Labs") provides the enclosed evaluation board/kit to the user ("User") under the following conditions:

This evaluation board/kit ("EVB/Kit") is intended for use for ENGINEERING DEVELOPMENT, TESTING, DEMONSTRATION, OR EVALUATION PURPOSES ONLY and is not a finished end-product fit for general consumer use. ANY OTHER USE, RESALE, OR REDISTRIBUTION FOR ANY OTHER PURPOSE IS STRICTLY PROHIBITED. This EVB/Kit is not intended to be complete in terms of required design-, marketing-, and/or manufacturing-related protective considerations, including product safety and environmental measures typically found in end products that incorporate such semiconductor components or circuit boards. As such, persons handling this EVB/Kit must have electronics training and observe good engineering practice standards. As a prototype not available for commercial reasons, this EVB/Kit does not fall within the scope of the European Union directives regarding electromagnetic compatibility, restricted substances (RoHS), recycling (WEEE), FCC, CE or UL, and therefore may not meet the technical requirements of these directives or other related directives.

Should this EVB/Kit not meet the specifications indicated in the User's Guide, the EVB/Kit may be returned within 30 days from the date of delivery for a full refund. THE FOREGOING WARRANTY IS THE EXCLUSIVE WARRANTY MADE BY SILICON LABS TO USER, IS USER'S SOLE REMEDY, AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT, DESIGN, WORKMANSHIP, OR FITNESS FOR ANY PARTICULAR PURPOSE.

User assumes all responsibility and liability for proper and safe handling of the EVB/Kit. Further, User indemnifies Silicon Labs from all claims arising from User's handling or use of the EVB/Kit. Due to the open construction of the EVB/Kit, it is User's responsibility to take any and all appropriate precautions with regard to electrostatic discharge.

EXCEPT TO THE EXTENT OF THE INDEMNITY SET FORTH ABOVE, NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

Neither Silicon Labs nor User is obligated to perform any activities or conduct any business as a consequence of using the EVB/Kit, and neither party is entitled to any form of exclusivity with respect to the EVB/Kit.

Silicon Labs assumes no liability for applications assistance, customer product design, software performance, or infringement of patents or services described herein.

Please read the User's Guide and, specifically, the Warnings and Restrictions notice in the User's Guide prior to handling the EVB/Kit. This notice contains important safety information about temperatures and voltages. For additional environmental and/or safety information, please contact a Silicon Labs application engineer or visit www.silabs.com/support/quality.

No license is granted under any patent right or other intellectual property right of Silicon Labs covering or relating to any machine, process, or combination in which the EVB/Kit or any of its components might be or are used.

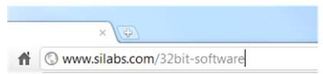
User's use of this EVB/Kit is conditioned upon acceptance of the foregoing conditions. If User is unwilling to accept these conditions, User may request a refund and return the EVB/Kit to Silicon Labs in its original condition, unopened, with the original packaging and all documentation to:

Mailing Address:
400 W. Cesar Chavez
Austin, TX 78701

 **Rev. 0.2 7/12**

## A. Install Software

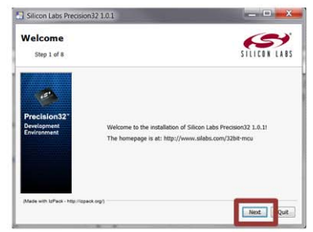
**1** Navigate to the Precision32 software download website.




**www.silabs.com/32bit-software**

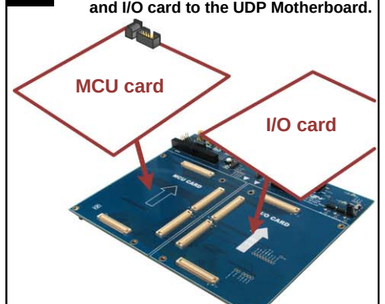
**2** Click the large Download Button to initiate the Precision32 web install.


**3** Start the Installer and allow it to run in the background. Advance to Step 4 while the Precision32 Development Suite and AppBuilder are being installed.

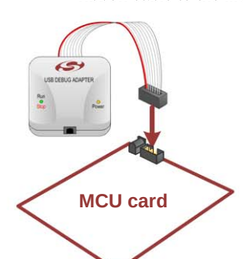



## B. Hardware Setup (Steps 1, 4, and 5 Only Apply to Enhanced Development Kits)

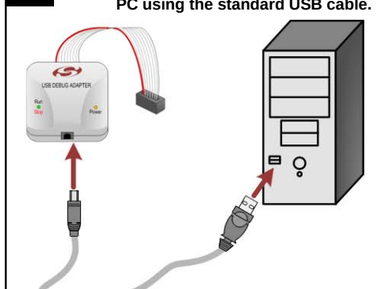
**1** If Enhanced DK, connect the MCU card and I/O card to the UDP Motherboard.



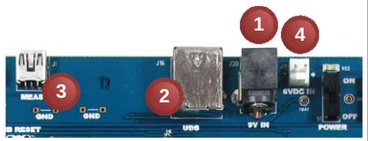

**2** Connect the USB Debug Adapter ribbon cable to the MCU card.




**3** Connect the USB Debug Adapter to the PC using the standard USB cable.

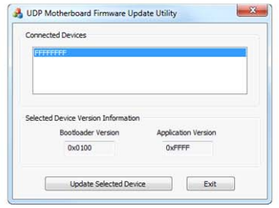



**4** If Enhanced DK, apply power to the UDP Motherboard using 1 of 4 power options, then set power switch (S3) to the ON Position.




**Power Options**
**1: 9 V Universal Adapter (J20)**
**2: Standard USB (J16)**
**3: Mini USB (J1)**
**4: 6 V Battery Pack (J11)**

**5** If Enhanced DK, update the motherboard firmware using the UDP Motherboard Firmware Update Utility.



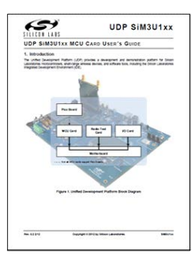

**www.silabs.com/udp**

**6** If Development Kit, apply power to the MCU Card using 1 of 2 power options.


**Power Options**
**1: Mini USB – For USB MCUs**
**2: 9 V Universal Adapter – For Non-USB MCUs**
**Note: If Enhanced DK, the MCU Card is powered from the motherboard.**

## C. Documentation

**1** Download the User's Guide for Each Board in the Development Kit.

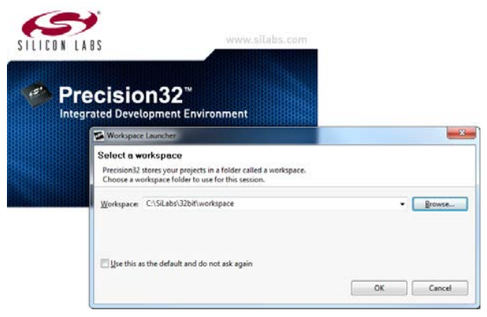



**Where to Find Documentation**

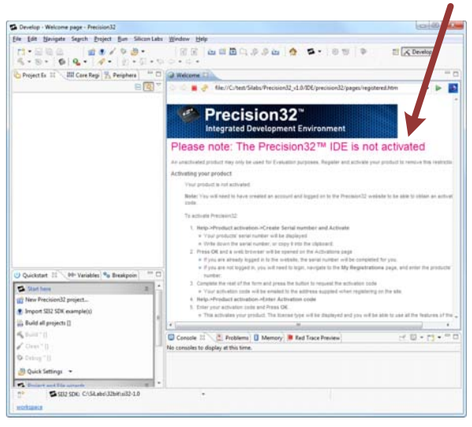
**Data Sheet:**
www.silabs.com/32bit-mcu→Choose Product Family→Documentation tab
**Reference Manual:**
www.silabs.com/32bit-mcu→Choose Product Family→Documentation tab
**Hardware User's Guide:**
www.silabs.com/32bit-mcu→Design Resources→Unified Development Platform
OR www.silabs.com/udp
**Application Notes:**
www.silabs.com/32bit-mcu→Design Resources→Application Notes
**Software Development Kit Documentation:**
C:\Silabs\32bit\si32-{revision}\Documentation\si32Hal.chm
**Quality Documents:**
www.silabs.com/quality

## D. Using the Precision32 IDE for the First Time

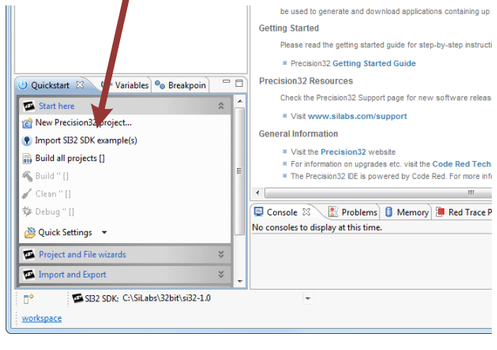
**1** Open the Precision32 IDE and select the project workspace.



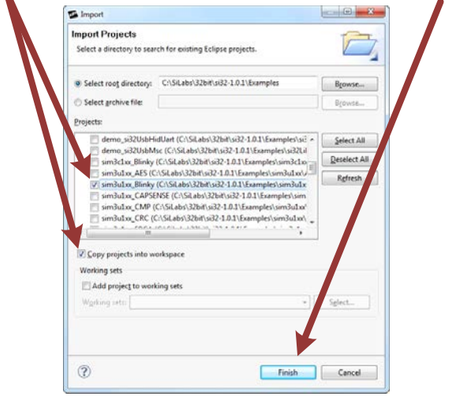

**2** Register the IDE using the steps listed on the Welcome page.



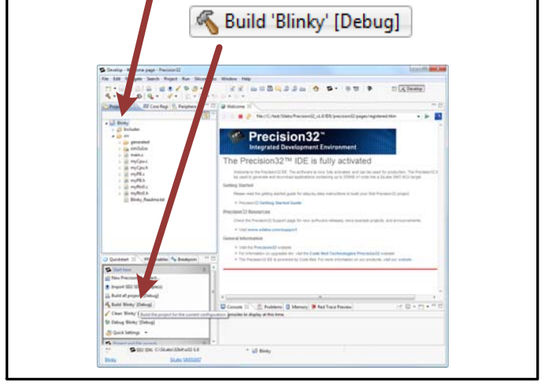

**3** Select the Import SI32 SDK example(s) link in the Quickstart window.



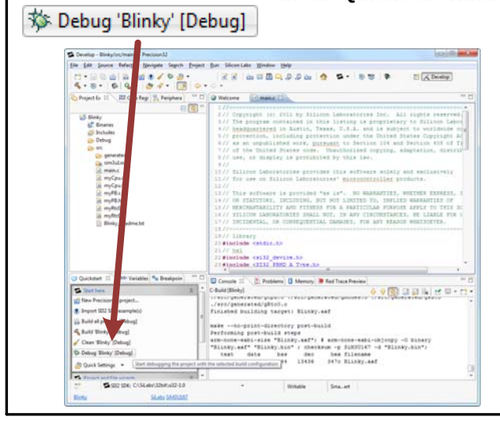

**4** Select just the simxxxxx_Blinky checkbox, ensure Copy projects into workspace is selected, and press Finish.



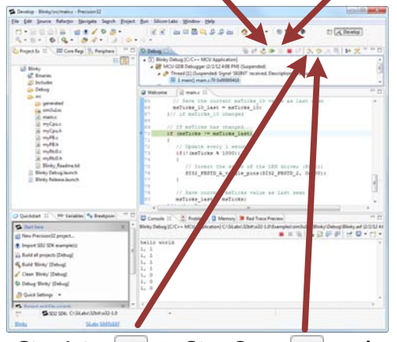

**5** Select the simxxxxx_Blinky project in the Project Explorer and press Build 'Blinky' [Debug] in the Quickstart window.




**6** Start a Debug session by clicking Debug 'Blinky' [Debug] in the Quickstart window.

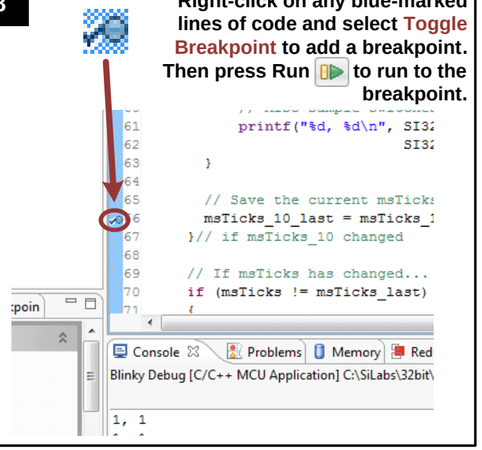



**7** Run the program. The LED will blink. Pause the program.

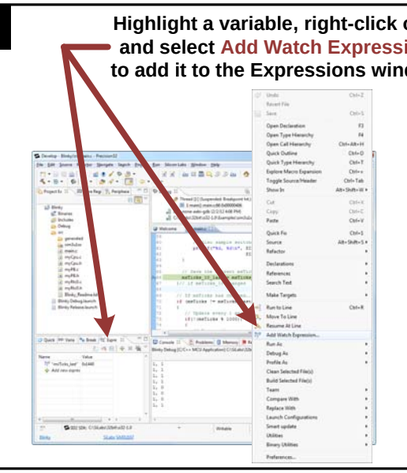


Step Into or Step Over code.

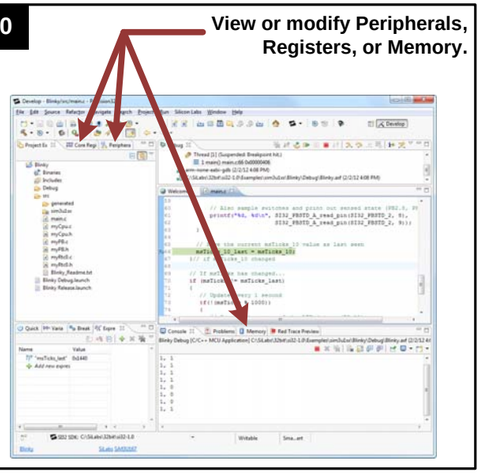
**8** Right-click on any blue-marked lines of code and select Toggle Breakpoint to add a breakpoint. Then press Run to run to the breakpoint.




**9** Highlight a variable, right-click on it, and select Add Watch Expression... to add it to the Expressions window.

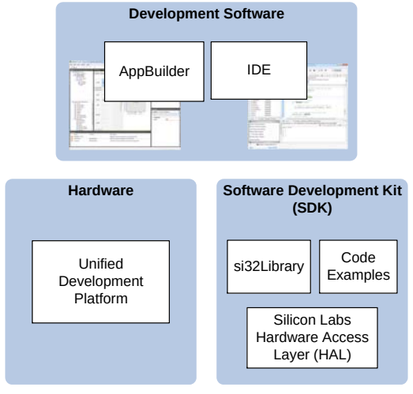


**10** View or modify Peripherals, Registers, or Memory.



## E. Using the Precision32 Development Suite

The Precision32 Development Suite is a complete development system for Silicon Labs 32-bit MCUs. The Development Suite consists of three parts: the Unified Development Platform (UDP) hardware, the Software Development Kit (SDK), and the PC development tools including AppBuilder and the Integrated Development Environment (IDE). See the application notes listed below for complete details.




- **AN675:** Precision32 Development Suite Overview
- **AN667:** Getting Started with the Silicon Labs Precision32 IDE
- **AN670:** Getting Started with the Silicon Labs Precision32 AppBuilder
- **AN678:** Precision32 si32FlashUtility Command-Line Programmer User's Guide
- **AN719:** Precision32 IDE and AppBuilder Detailed Tutorial and Walkthrough

**Where to Find Support**

**MCU KnowledgeBase:**
www.silabs.com→Support→Knowledge Base
**Video Training Modules:**
www.silabs.com→Support→Training and Resources
**Contact an Applications Engineer:**
www.silabs.com→Support→Contact Technical Support