

# Microcontroller Development Tools

## PROFESSIONAL, COMPREHENSIVE DEVELOPMENT TOOLS



### BUILT-IN DEBUG

Every microcontroller from Silicon Labs includes on-chip debug circuitry that supports non-intrusive, full-speed, in-circuit debugging of the production part installed in the user's end application. This integration eliminates the sockets, external emulation hardware and performance-degrading cables typical of emulators. Emulators are never required!

### COMPREHENSIVE DEVELOPMENT KITS

Silicon Labs' comprehensive development kits provide everything needed to develop complex electronic systems quickly and easily. These kits come complete with all required hardware and software and outperform traditional "emulators" at a fraction of the cost. Development kits are available for sale on our website at [www.silabs.com](http://www.silabs.com).

### INTEGRATED DEVELOPMENT ENVIRONMENT (IDE)

Silicon Labs' IDE combines an editor, project manager, code development tools and a debugger into a single, intuitive environment for code development and in-system debug. No additional target RAM, program memory or communications channels are required. The development kits come complete with an integrated 8051 macro assembler, C compiler and linker.

### DEVELOPMENT KITS

- Complete development/prototyping system
- Prototyping/demonstration board
- Silicon Labs IDE
  - Source code editor
  - Project manager
  - Flash programmer
  - Full speed in-circuit debugging
    - Run control
    - Single-stepping
    - Real-time breakpoints
    - Stack monitor
  - Register/memory inspection & modification
  - Conditional memory watchpoints
  - Single-step and animated execution modes
  - Variable watch window
- MCU configuration wizard

### THIRD PARTY TOOL SUPPORT

- Broad range of third-party compilers and development tools available
- Flash programming and source-level debug of OMF-51 object files is fully supported

### ToolStick DEVELOPMENT PLATFORM

- Fully contained evaluation and development system in a USB stick
- Risk free evaluation of Silicon Labs' tool suite
- Programming options available



## SOLUTIONS GUIDE

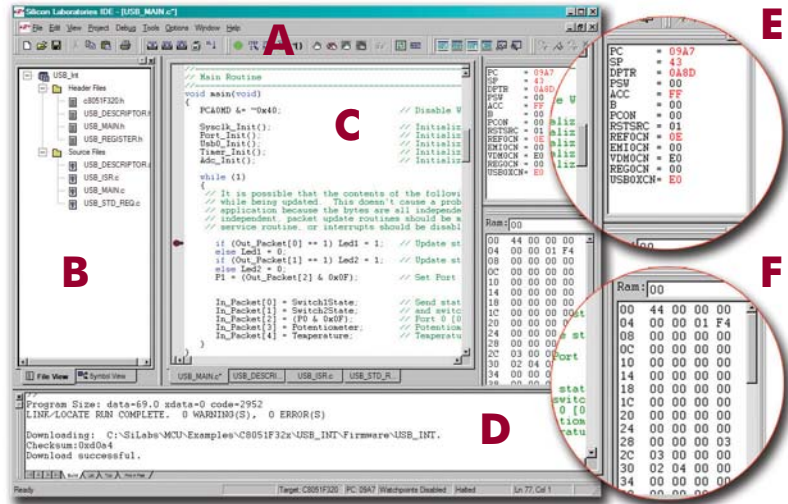
PROFESSIONAL, COMPREHENSIVE  
DEVELOPMENT KIT  
AND SUPPORT TOOLS



# Microcontroller Development Tools

- A** Standard Windows® Menus and Toolbars provide optimum access to all IDE features including the editor, debugger, customizable tool menu and online help.
- B** Project Window offers clear visibility and easy management of all files associated with design project.
- C** Source Editor Window helps create programs using the language-sensitive, full-featured editor. Debugging assembly or C language programs with the source in full view is supported. Useful debug features, such as breakpoint markers and program counter location, dramatically speed debugging.
- D** Output Window conveniently displays the assembler output and listing file.
- E, F** Register Windows and Memory Windows help in examining and directly modifying memory, register and Flash contents during debugging. These flexible windows are automatically updated each time program execution stops, and values that changed are highlighted.

## Integrated Development Environment



### System Requirements:

- PC Win2K or later
- One available USB port
- 128 MB RAM and 100 MB free hard drive space recommended

## ToolStick Development Platform

The USB ToolStick platform is a fully contained evaluation and development system in a USB stick that demonstrates Silicon Labs' easy-to-use development tools. The ToolStick, along with only a PC with a USB port, allows designers to develop and debug application firmware directly on the target microcontroller using the Silicon Labs Integrated Development Environment (IDE). Once complete, designers can replace the Daughter Card with a Programming Adapter and program devices for use in their actual system.



### Base Adapter

The Base Adapter connects to the PC using a USB connector and supports any Daughter Card or Programming Adapter.

### Daughter Card

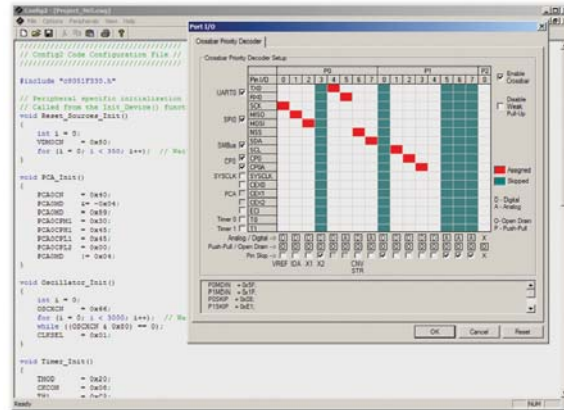
The target MCU and application circuitry are located on the Daughter Card; the IDE interfaces with this MCU. The Daughter Card plugs into the Base Adapter.

### Programming Adapter

The Programming Adapter provides the appropriate mechanical socket to program a blank device. The Programming Adapter plugs into the Base Adapter.

## Configuration Wizard

A configuration wizard automatically generates MCU and on-chip peripheral initialization code. Clicking on checkboxes and entering values in scripted dialogs generates the assembly or C language code needed to enable and configure peripherals, assign functions to I/O pins and specify MCU operation.



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