

MDK-ARM

Microcontroller Development Kit



Overview

Keil™ MDK-ARM™ (Microcontroller Development Kit) is the complete software development environment for ARM® Cortex™ -M series, ARM7™, and ARM9™ processor-based devices.

Key Features

- Support for Silicon Labs Precision32™ device families enabling rapid design start of the Sim3UI and SiM3CI
- Industry-leading ARM C/C++ Compiler with advanced processor-specific compiler, linker, and library optimizations
- Powerful μVision4™ IDE, debugger, and simulation environment
- ULINKpro™ debug adapter supports on-the-fly application analysis, and records every instruction
- Complete Code Coverage information about your program's execution
- Execution Profiler and Performance Analyzer for analyzing and optimizing your code
- RTX real-time operating system (with source code)
- Contains numerous project examples and templates to assist with code development
- Detailed start-up code for all Precision32 devices enables you to begin software development faster.

ARM C/C++ Compiler

The ARM Compilation tools are the most widely used commercial tools, proven and used on billions of shipped devices. They provide:

- The highest performance code generation in terms of code size and speed
- User selectable optimizations allowing developers to balance code size vs performance considerations
- Microlib highly optimized library for code-size sensitive designs.

μVision IDE

μVision™ IDE combines project management and source code editing capabilities in a single development environment:

- Integrated **Device Database**® provides start-up code and tailored peripheral views for a vast array of ARM Powered® MCU devices
- **Editor** provides an optimized workflow with intuitive toolbars
- **Source Browser** provides access to all application symbols
- **Configuration Wizard** allows you to view, modify and document bit-level settings quickly and easily.

Silicon Labs Device Support

MDK-ARM supports the entire Precision32 device family and includes:

- Board support packages for the Silicon Labs evaluation boards for Sim3UI and SiM3CI
- Support for the Silicon Labs USB Debug Adapter
- Start up code for all Precision32 devices to make project creation simple and easy.



ULINKpro connects to SiLab UDP MCU card via ETM



µVision Debugger

µVision **Debugger** provides a single environment to test, verify, and optimize your application and includes:

- **System Viewer** windows display detailed information of peripheral registers. Content values are instantly updated by the target hardware as changes occur.
- A configurable **Logic Analyzer** gives a graphical display of signals and variables
- **Code Coverage** statistics verify applications that require certification testing and validation
- **Performance Analyzer** displays the execution time recorded for functions in your application
- **Execution Profiler** records statistics for each CPU instruction, including the execution count and execution time
- The **Call Stack** window displays current call nesting with argument and local variables.

ULINK Debug Adapters

The ULINK family of USB Debug Adapters connect your PC's USB port to your target system (via JTAG or SWD), allowing you to debug and analyze embedded programs running on target hardware.

The ULINKpro provides unique streaming trace directly to your PC, enabling advanced analysis of your applications such as Execution Profiling and Code Coverage.

Features	ULINKpro	ULINK2
Run Control debug (ARM & Cortex-M series)	✓	✓
Memory + Breakpoint (while running)	✓	✓
Data Trace (Cortex-M3, Cortex-M4)	✓	✓
Instruction Trace	✓	-
Performance		
JTAG Clock Speed	50MHz	10MHz
Memory read/write	1MByte/s	25KB
Data Trace streaming (UART mode)	-	1Mbit/s
Data Trace streaming (Manchester mode)	100Mbit/s	-
ETM Trace streaming	800Mbit/s	-
Analysis Tools		
Logic Analyzer	✓	✓
Performance Analyzer	✓	-
Execution Profiler	✓	-
Code Coverage	✓	-

MDK Product Selector:	MDK-Lite	MDK-Basic	MDK-Standard	MDK-Professional
µVision4: - IDE - Debugger - Simulator	✓ 32KB 32KB	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
ARM C/C++ Compiler GNU GCC Support	32KB 32KB	256KB ✓	✓ ✓	✓ ✓
ARM Processor Support - Cortex-M0, Cortex-M1, Cortex-M3 & Cortex-M4 - ARM7 & ARM9	✓ ✓	✓ ✓	✓ ✓	✓ ✓
Evaluation Board Support	✓	✓	✓	✓
RTOS & Middleware Libraries - RTX RTOS - Keil TCP/IP, Flash, USB, CAN & GUI Library	✓	✓	✓	✓ ✓

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Program examples and detailed technical information are available from your distributor and our web site (www.keil.com).

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