Software support for microcontollers featuring the ARM® Cortex®-M core

Kinetis Software Development Kit

The Kinetis software development kit (SDK) provides comprehensive software support for Kinetis MCUs.

The Kinetis SDK includes a hardware abstraction layer (HAL) and drivers for each MCU peripheral, USB and connectivity stacks, middleware, real-time operating systems and example applications designed to simplify and accelerate application development on Kinetis MCUs. It includes full source code under a permissive open-source license for all hardware abstraction and peripheral driver software.

The Kinetis SDK is offered for free, and support for it is available through the Kinetis Software Development Kit (SDK) Community Forum.

FEATURES

The Kinetis SDK consists of the following runtime software components written in C:

- ARM® CMSIS-CORE and DSP standard libraries and CMSIS-compliant device header and startup files
- An open-source hardware abstraction layer (HAL) that provides simple, stateless drivers with an API encapsulating the functions of Kinetis peripherals
- System services for centralized resources, including a clock manager, interrupt manager, power mode manager and a hardware timer
- Open-source, high-level peripheral drivers
- An operating system abstraction (OSA) layer for adapting applications for use with a real-time operating system (RTOS) or BareMetal (no RTOS) applications. OSAs are provided for:
  - FreeRTOS™
  - Micrium® µC/OS-II®
  - Micrium µC/OS-III®
  - Our proprietary MQX™ RTOS
  - BareMetal (no RTOS)

CMSIS COMPLIANT
ARM® Cortex™ Microcontroller Software Interface Standard

Open Source Initiative

NXP

- Stacks and middleware, including:
  - A comprehensive device and host USB stack with extensive USB class support
  - CMSIS-DSP, a suite of common signal processing functions
  - Our proprietary MQX real-time TCP/IP communication suite (RTCS)
  - Our proprietary MQX file system (MFS)
  - lwIP open-source lightweight TCP/IP stack
  - FatFs, a FAT file system for small embedded systems
  - Encryption software utilizing the memory-mapped cryptographic acceleration unit (mmCAU) hardware acceleration unit

The Kinetis SDK comes complete with software examples demonstrating the usage of the HAL, peripheral drivers, middleware, and RTOSes. All examples are provided with projects for the following toolchains:

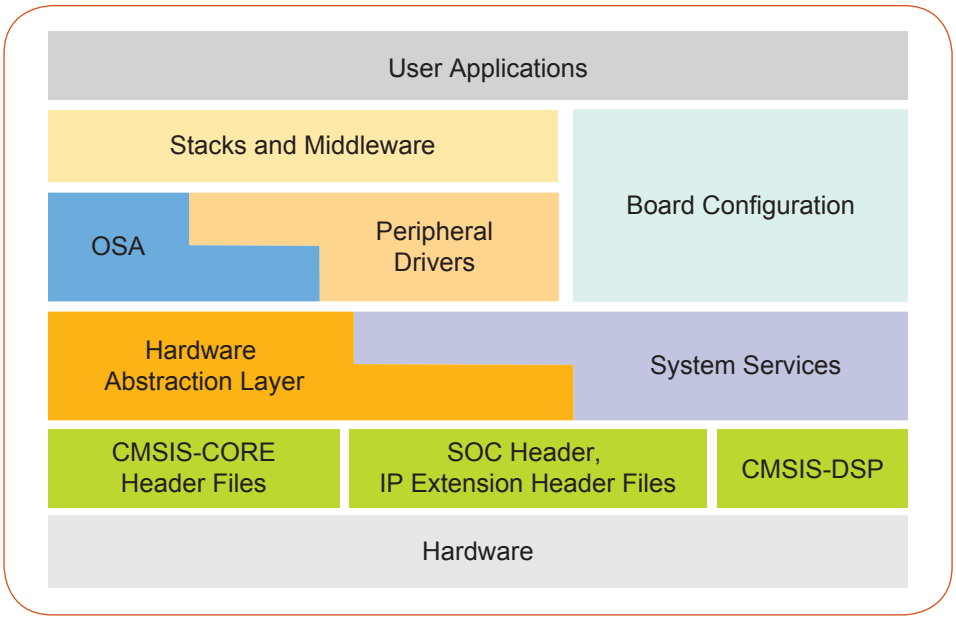
- Atollic® TrueSTUDIO®
- IAR Embedded Workbench® for ARM
- ARM Keil® development tool
- Kinetis Design Studio (KDS) IDE
- Makefiles for GCC 4.8 toolchain
- Somnium® DRT, NXP edition

CUSTOMIZE YOUR SDK

You can customize the Kinetis SDK and get only what you need through the SDK Builder, which packages custom SDKs based on user selections of MCU, evaluation board, and optional software components. Simply choose your specific Kinetis MCU and evaluation boards, then quickly download a custom SDK.

Learn more at: www.**kex.nxp.com**

KINETIS SDK BLOCK DIAGRAM



KINETIS SDK SUPPORTED TOOLS

atollic

IAR SYSTEMS

ARM KEIL Microcontroller Tools

SOMNIUM

GNU Compiler Collection (GCC)

Kinetis Design Studio

Get Started
Learn more at: **www.nxp.com/KSDK**
or **www.kex.nxp.com**

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