Kinetis® KL4x-48 MHz, USB, Segment LCD, Ultra-Low-Power Microcontrollers (MCUs) based on Arm® Cortex®-M0+ Core
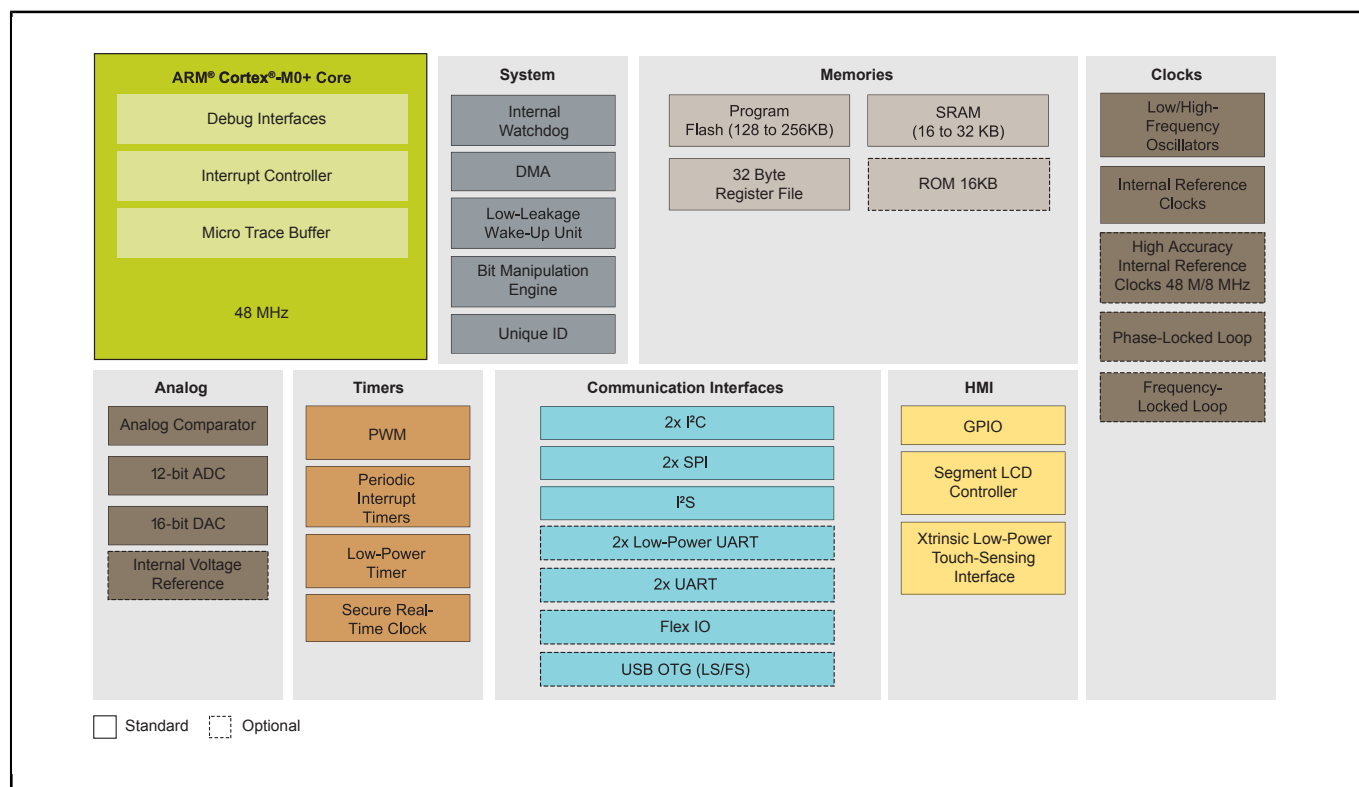
KL4x

Last Updated: Mar 5, 2025

The Kinetis® KL4x MCU family combines ultra-low-power performance with a rich suite of analog, communication, timing and control peripherals (including a segment LCD controller) for applications like electronic scales, flow meters, smart meters, and thermostats.

- Includes multiple flexible low-power modes, including new compute mode which reduces dynamic power by placing peripherals in an asynchronous stop mode
- Features security circuitry to prevent unauthorized access to RAM and flash contents
- Provides a migration path to lower and higher performance and feature integration through compatibility with other Kinetis families
- Backed by robust development tools and software

Kinetis L Series KL4x MCUs Block Diagram

ARM® Cortex®-M0+ Core
- Debug Interfaces
- Interrupt Controller
- Micro Trace Buffer

48 MHz

System
- Internal Watchdog
- DMA
- Low-Leakage Wake-Up Unit
- Bit Manipulation Engine
- Unique ID

Memories
- Program Flash (128 to 256KB)
- SRAM (16 to 32 KB)
- 32 Byte Register File
- ROM 16KB

Clocks
- Low/High-Frequency Oscillators
- Internal Reference Clocks
- High Accuracy Internal Reference Clocks 48 M/8 MHz
- Phase-Locked Loop
- Frequency-Locked Loop

Analog
- Analog Comparator
- 12-bit ADC
- 16-bit DAC
- Internal Voltage Reference

Timers
- PWM
- Periodic Interrupt Timers
- Low-Power Timer
- Secure Real-Time Clock

Communication Interfaces
- 2x I²C
- 2x SPI
- I²S
- 2x Low-Power UART
- 2x UART
- Flex IO
- USB OTG (LS/FS)

HMI
- GPIO
- Segment LCD Controller
- Xtrinsic Low-Power Touch-Sensing Interface

☐ Standard   ┌┈┐ Optional

View additional information for Kinetis® KL4x-48 MHz, USB, Segment LCD, Ultra-Low-Power Microcontrollers (MCUs) based on Arm® Cortex®-M0+ Core.

Note: The information on this document is subject to change without notice.