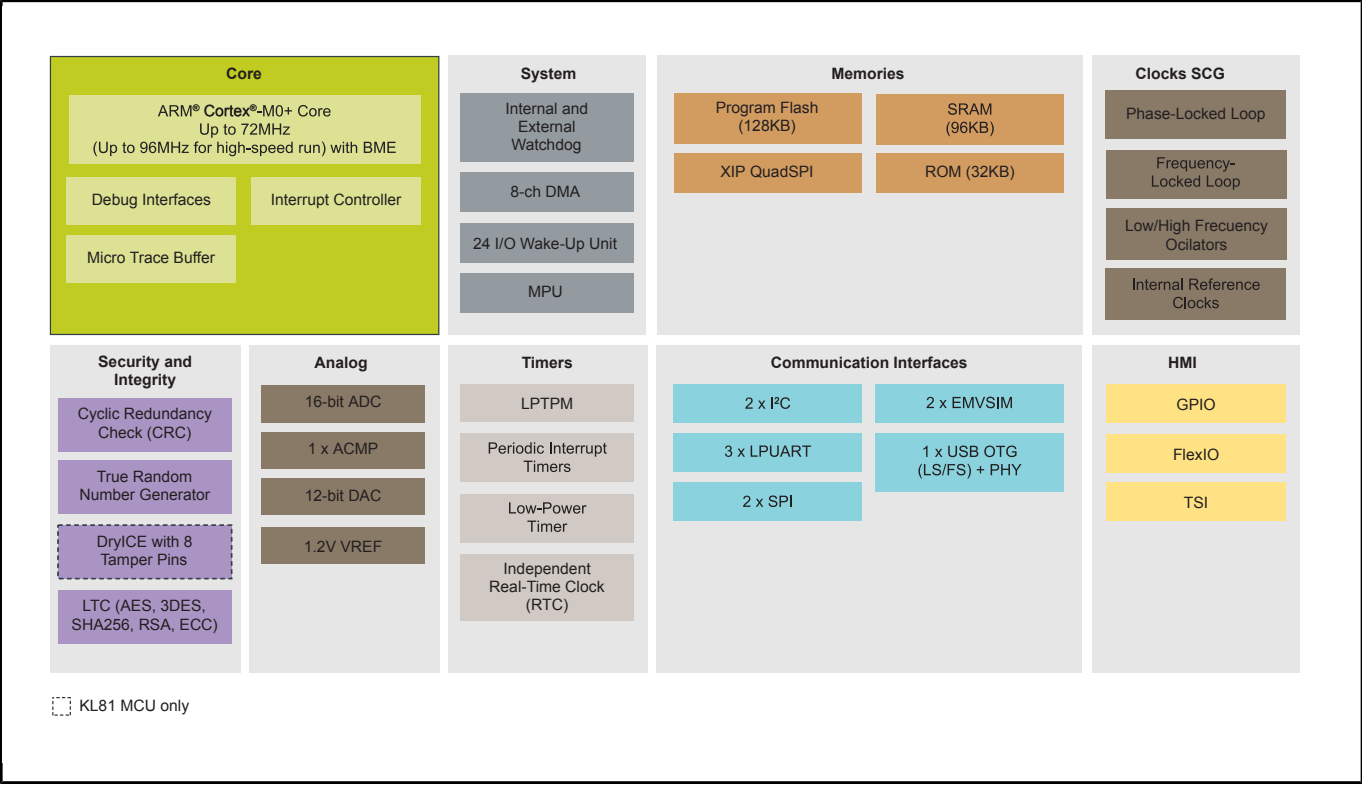# Kinetis® KL8x-72/96 MHz Secure Ultra-Low Power Microcontrollers (MCUs) based on Arm® Cortex®-M0+ Core

KL8x

Last Updated: Mar 5, 2025

The Kinetis® KL8x MCU expands on the Kinetis low-power MCU portfolio with rich security features including tamper detection, true random number generator and low-power trusted crypto engine supporting AES, DES, 3DES, SHA, RSA and ECC.

Kinetis KL8x MCU Family Block Diagram

Core	System	Memories		Clocks SCG
ARM® Cortex®-M0+ Core Up to 72MHz (Up to 96MHz for high-speed run) with BME	Internal and External Watchdog	Program Flash (128KB)	SRAM (96KB)	Phase-Locked Loop
Debug Interfaces — Interrupt Controller	8-ch DMA	XIP QuadSPI	ROM (32KB)	Frequency-Locked Loop
Micro Trace Buffer	24 I/O Wake-Up Unit			Low/High Frecuency Ocilators
	MPU			Internal Reference Clocks

Security and Integrity	Analog	Timers	Communication Interfaces		HMI
Cyclic Redundancy Check (CRC)	16-bit ADC	LPTPM	2 x I²C	2 x EMVSIM	GPIO
True Random Number Generator	1 x ACMP	Periodic Interrupt Timers	3 x LPUART	1 x USB OTG (LS/FS) + PHY	FlexIO
DryICE with 8 Tamper Pins	12-bit DAC	Low-Power Timer	2 x SPI		TSI
LTC (AES, 3DES, SHA256, RSA, ECC)	1.2V VREF	Independent Real-Time Clock (RTC)			

▯ KL81 MCU only

View additional information for Kinetis® KL8x-72/96 MHz Secure Ultra-Low Power Microcontrollers (MCUs) based on Arm® Cortex®-M0+ Core.

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