The Kinetis K series MCU portfolio offers the broadest selection of pin-, peripheral- and software-compatible MCU families based on the ARM® Cortex®-M4 core.

**TARGET APPLICATIONS**
- Barcode scanners
- Electronic point of sale (EPOS)
- Gaming accessories
- Health and wellness monitors
- Home and building automation
- Industrial/commercial sensor nodes
- IoT data concentrators
- Multi-functional printers
- Smart grid data concentrators
- Sports and activity wearables

These families are performance efficient and offer industry-leading low power consumption while providing significant BOM savings through smart on-chip integration. The Kinetis K series is supported by a comprehensive set of development tools, software and enablement.

The Kinetis K2x MCU family offers full and optional high-speed USB 2.0 On-The-Go (OTG), including options for crystal-less device functionality. Devices range from 32 KB to 2 MB of flash with 256 KB of SRAM; packages include BGA, LQFP, QFN and WLCSP spanning from 32- to 169-pin options.

The Kinetis K2x MCU family is a scalable portfolio with various levels of integration, offering a rich suite of analog, communication, timing and control peripherals to accommodate a wide range of requirements.

**COMPREHENSIVE ENABLEMENT SOLUTIONS**

- **Kinetis Software Development Kit (SDK)**
  - Extensive suite of robust peripheral drivers, stacks and middleware
  - Includes software examples demonstrating the usage of the HAL, peripheral drivers, middleware and RTOSes
  - Operating system abstraction (OSA) for proprietary MQX™ RTOS, FreeRTOS™, and Micrium® µC/OS kernels and Baremetal (no RTOS) applications

- **Integrated Development Environments (IDE)**
  - Atollic® TrueSTUDIO®
    - atollic.com/products/target-support/nxp-freescale/
  - Green Hills® Software MULTI
    - ghs.com/products/freescale_kinetis.html
  - IAR Embedded Workbench®
    - iar.com/kinetis
  - ARM Keil® microcontroller development kit
    - keil.com/nxp
  - SOMNIUM® DRT Cortex-M IDE
    - www.somniumtech.com/nxp
Kinetis Design Studio IDE
- No-cost integrated development environment (IDE) for Kinetis MCUs
- Eclipse and GCC-based IDE for C/C++ editing, compiling and debugging
- Broad ARM ecosystem support through NXP Partner Program

Online Enablement with ARM mbed™ Development Platform
- Rapid and easy Kinetis MCU prototyping and development
- Online mbed SDK, developer community
- https://developer.mbed.org
- Free software libraries

Proprietary MQX RTOS
- Full-feature RTOS kernel, TCP/IP and USB stacks, file system, shell utility, peripheral drivers, board support packages and more.
- www.nxp.com/mqx

KINETIS K2x MCU FAMILY BLOCK DIAGRAM

Bootloader
- Common bootloader for all Kinetis MCUs
- In-system flash programming over a serial connection: erase, program, verify
- ROM or flash-based bootloader with open-source software and host-side programming utilities

Development Hardware
- Tower® System modular development platform
  - Rapid prototyping and evaluation
  - Low-cost, interchangeable modules
- Freedom development platforms
  - Low cost (<$30 USD)
  - Arduino® R3 compatible
  - mbed-enabled on select boards

KINETIS K2x MCUs: FULL-SPEED USB

www.nxp.com/Kinetis