

Flash  
programming  
utility over serial  
communication

## MCU Bootloader for Kinetis Microcontrollers

The MCU bootloader for Kinetis microcontrollers is a configurable flash programming utility that operates over a serial connection on Kinetis MCUs.

MCU bootloader for Kinetis enables quick and easy programming of Kinetis MCUs through the entire product lifecycle from application development to final product manufacturing and beyond for updating applications in the field with confidence. The bootloader for Kinetis MCUs is delivered either as a full download of source code for users to build a customized bootloader, or pre-programmed on the Kinetis devices either in ROM or Flash. Host-side command line and GUI tools are available to communicate with the bootloader.

The bootloader was previously named Kinetis Bootloader (or KBOOT). It has been renamed to "MCU Bootloader" (or MCUBOOT). The MCU Bootloader is now integrated into MCUXpresso SDK as a middleware component.

### FEATURES

- ▶ A common bootloader for Kinetis MCUs
- ▶ C/C++ source code provided under a permissive BSD open-source license
- ▶ Supported serial communications with active peripheral detection
  - UART
  - SPI
  - I<sup>2</sup>C
  - USB device HID/MSC
  - CAN
- ▶ Common packet-based protocol for all peripherals
- ▶ Support to program or boot from external flash memory
- ▶ Support to program encrypted image
- ▶ ROM flash driver usage examples
- ▶ Integrated into MCUXpresso SDK as a middleware component



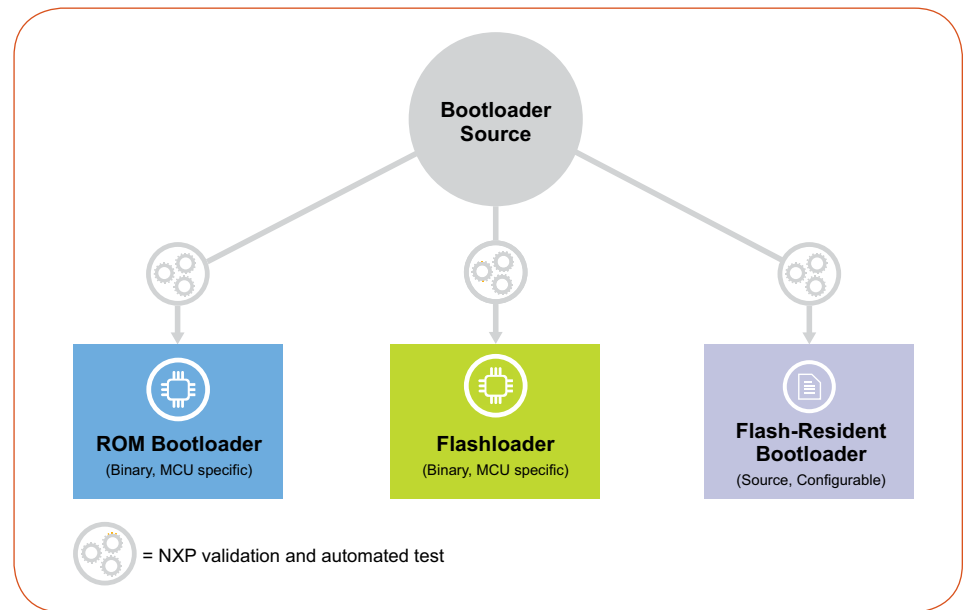
## MCU BOOTLOADER CONFIGURATION COMPARISON

MCU Bootloader Configuration	ROM Bootloader	Flashloader	Flash Bootloader
Use case	Factory flash programming and field update	Factory flash programming	Field update
Delivery mechanism	Binary preprogrammed in ROM by NXP	Binary preprogrammed in flash by NXP	Source code provided in major release
Supported devices	All Kinetis devices with a boot ROM	Select Kinetis devices without a ROM*	Select Kinetis devices*
Clock configuration	Configurable by user	Is configured by NXP to a default setting	Configurable by user
Feature	Can run at system startup or callable from user application	Always run at system start-up	Can run at system startup or callable from user application
	Can jump to user application after peripheral timeout	Overwritten by user application, single time use only	Can jump to user application after peripheral timeout

\*List of supported devices on [www.nxp.com/MCUBOOT](http://www.nxp.com/MCUBOOT)

- ▶ Command-line host tools run on Windows®, Linux® and Mac OS®
  - GUI host tool run on Windows
  - Flash utility to program, erase, and configure the bootloader
  - Manufacturing tool to support programming up to four devices simultaneously
  - blhost command line tool to program, erase and configure the bootloader
- ▶ IDE Support:
  - MCUXpresso IDE
  - IAR Embedded Workbench®
  - Arm® Keil® microcontroller development kit (MDK)

## MCU BOOTLOADER FOR KINETIS MCUs CONFIGURATIONS



## GET STARTED

[www.nxp.com/MCUBOOT](http://www.nxp.com/MCUBOOT)

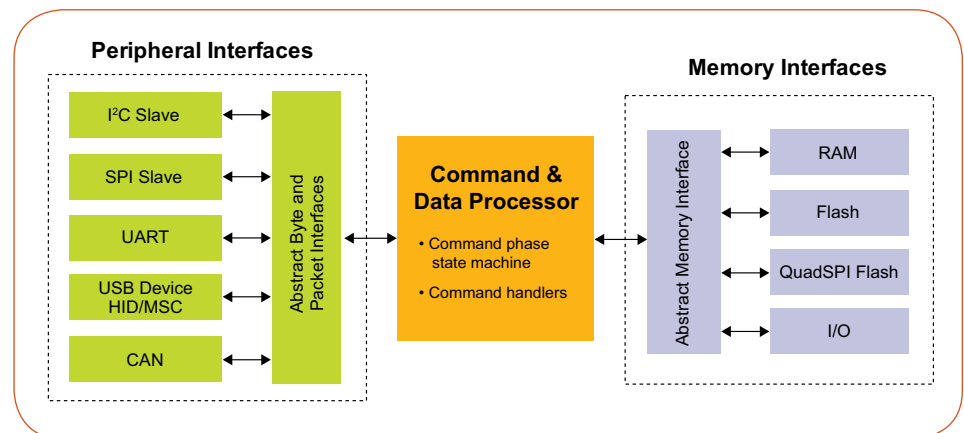
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## MCU BOOTLOADER BLOCK DIAGRAM



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Document Number: MCUBOOTFS REV 3