



STM32CubeMX



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1 STM32CubeMX overview

This article describes STM32CubeMX, an official STMicroelectronics graphical software configuration tool.

The STM32CubeMX application helps developers to use the STM32 by means of a user interface, and guides the user through to the initial configuration of a firmware project.

It provides the means to:

- configure pin assignments, the clock tree, or internal peripherals
- simulate the power consumption of the resulting project
- configure and tune DDR parameters
- generate HAL initialization code for Cortex-M4
- generate the Device Tree for a Linux kernel, TF-A and U-Boot firmware for Cortex-A7

It uses a rich library of data from the STM32 microcontroller portfolio.

The application is intended to ease the initial development phase by helping developers to select the best product in terms of features and power.



2 STM32CubeMX main features

- Peripheral and middleware parameters
Presents options specific to each supported software component
- Peripheral assignment to processors
Allows assignment of each peripheral to Cortex-A Secure, Cortex-A Non-Secure, or Cortex-M processors
- Power consumption calculator
Uses a database of typical values to estimate power consumption, DMIPS, and battery life
- Code generation
Makes code regeneration possible, while keeping user code intact
- Pinout configuration
Enables peripherals to be chosen for use, and assigns GPIO and alternate functions to pins
- Clock tree initialization
Chooses the oscillator and sets the PLL and clock dividers
- DDR tuning tool
Ensures the configuration, testing, and tuning of the MPU DDR parameters. Using U-Boot-SPL Embedded Software.



3 How to get STM32CubeMX

Please, refer to the following link [STM32CubeMX](#) to find STM32CubeMX, the Release Note, the User Manual and the product specification.

Doubledata rate (memory domain)

Hardware Abstraction Layer

Cortex[®]

Linux[®] is a registered trademark of Linus Torvalds.

Trusted Firmware for Arm[®] Cortex[®]-A

Das U-Boot -- the Universal Boot Loader (see [U-Boot_overview](#))

General-Purpose Input/Output (A realization of open ended transmission between devices on an embedded level. These pins available on a processor can be programmed to be used to either accept input or provide output to external devices depending on user desires and applications requirements.)

Microprocessor Unit