

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

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.