



STM32 Open Development Environment

Overview

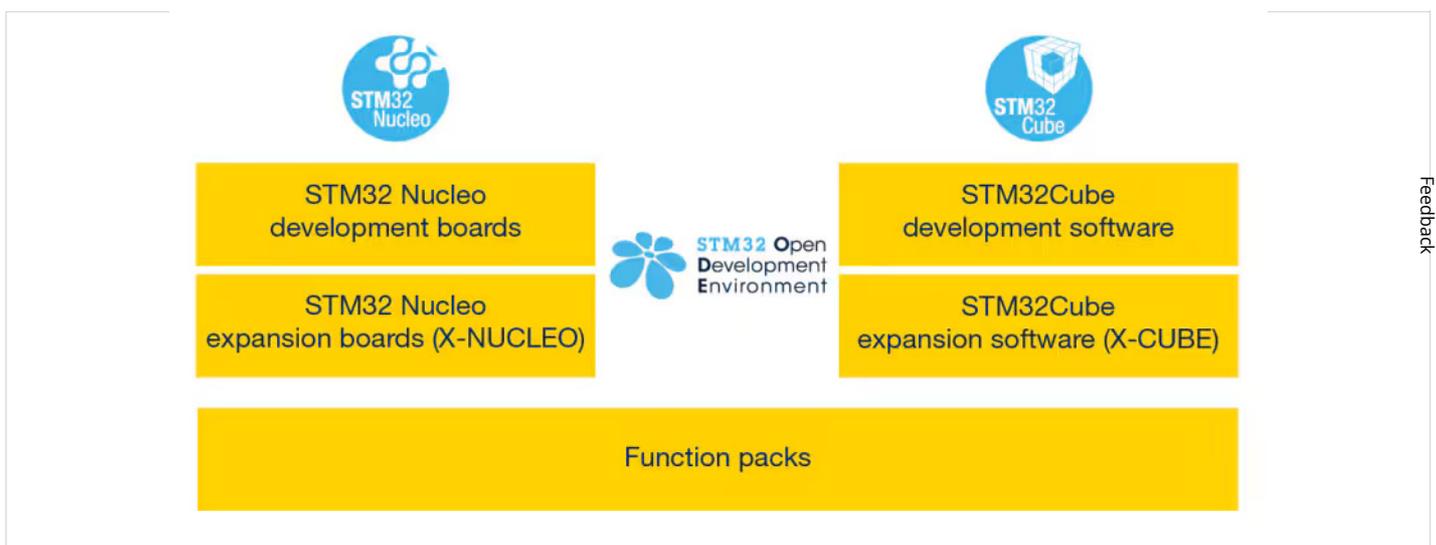
The STM32 Open Development Environment (STM32ODE) is an **open, flexible, easy** and **affordable** way to develop innovative devices and applications based on the STM32 32-bit microcontroller family combined with other state-of-the-art ST components connected via expansion boards. It enables fast prototyping with leading-edge components that can quickly be transformed into final designs.



The STM32 ODE includes the following five elements:

- STM32 Nucleo development boards.** A comprehensive range of affordable development boards for all STM32 microcontroller series, with unlimited unified expansion capability, and with integrated debugger/programmer
- STM32 Nucleo expansion boards.** Boards with additional functionality to add sensing, control, connectivity, power, audio or other functions as needed. The expansion boards are plugged on top of the STM32 Nucleo development boards. More complex functionalities can be achieved by stacking additional expansion boards
- STM32Cube software.** A set of free-of-charge tools and embedded software bricks to enable fast and easy development on the STM32, including a Hardware Abstraction Layer, middleware and the STM32CubeMX PC-based configurator and code generator
- STM32Cube expansion software.** Expansion software provided free of charge for use with STM32 Nucleo expansion boards, and compatible with the STM32Cube software framework
- STM32 ODE Function Packs.** Set of function examples for some of the most common application cases built by leveraging the modularity and interoperability of STM32 Nucleo development boards and expansions, with STM32Cube software and expansions.

The STM32 Open Development Environment is compatible with a number of IDEs including IAR EWARM, Keil MDK, mbed and GCC-based environments.



Featured Videos

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Getting Started with X-CUBE-NFC4

The X-CUBE-NFC4 is an expansion software package for STM32Cube. The software runs on the STM32 and includes drivers for ST25DV04K device and middleware for the NDEF protocol support. It is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. This video shows how to use the X-CUBE-NFC4 pack in the STM32CubeMX tool.

[▶ Watch the video \(1:59\)](#)



Getting Started with X-CUBE-BLE1

The X-CUBE-BLE1 is an expansion software package for STM32Cube. It runs on the STM32 microcontrollers and includes drivers for BlueNRG-MS Bluetooth low energy device. It is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. This video shows how to use the X-CUBE-BLE1 pack in the STM32CubeMX tool.

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Getting Started with X-CUBE-BLE2

The X-CUBE-BLE2 is an expansion software package for STM32Cube. It runs on the STM32 microcontrollers and includes drivers for BlueNRG-2 Bluetooth low energy device. It is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. This video shows how to use the X-CUBE-BLE2 pack in the STM32CubeMX tool.

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