STM32CubeF4

STM32Cube embedded software for STM32F4 series including HAL drivers, USB, Ethernet, File System, RTOS and Graphics
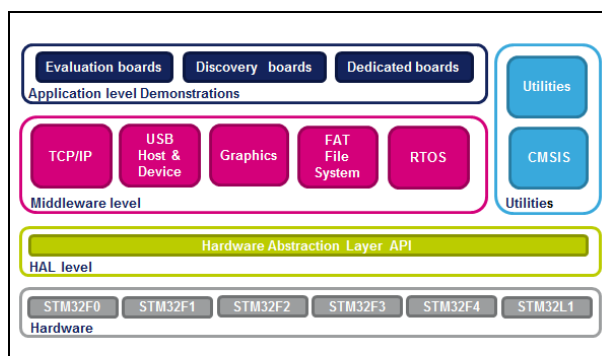
Data brief

Features

- Consistent and complete embedded software offer that frees the user from dependency issues
- Maximized portability between all STM32 series supported by STM32Cube
- Hundreds of examples for easy understanding
- High quality HAL using CodeSonar® static analysis tool
- STM32F4-specific middleware including USB Host and Device and TCP/IP stack
- Free user-friendly license terms
- Update mechanism that can be enabled by the user to be notified of new releases

Description

STM32Cube™ is an STMicroelectronics original initiative to ease developers' life by reducing development efforts, time and cost. STM32Cube™ covers STM32 portfolio.

STM32Cube™ includes the STM32CubeF4 which is a graphical software configuration tool that allows generating C initialization code using graphical wizards.

It also embeds a comprehensive software platform, delivered per series (such as STM32CubeF4 for STM32F4 series). This platform includes the STM32Cube HAL (an STM32 abstraction layer embedded software, ensuring maximized portability across STM32 portfolio), plus a consistent set of middleware components (RTOS, USB, TCP/IP and graphics). All embedded software utilities come with a full set of examples.

STM32CubeF4 gathers in one single package all the generic embedded software components required to develop an application on STM32F4 microcontrollers. Following STM32Cube™ initiative, this set of components is highly portable, not only within STM32F4 series but also to other STM32 series.

STM32CubeF4 is fully compatible with STM32CubeMX code generator that allows generating initialization code. The package includes a low level hardware abstraction layer (HAL) that covers the microcontroller hardware, together with an extensive set of examples running on STMicroelectronics boards. The HAL is available in open-source BSD license for user convenience.

For further information contact your local STMicroelectronics sales office.
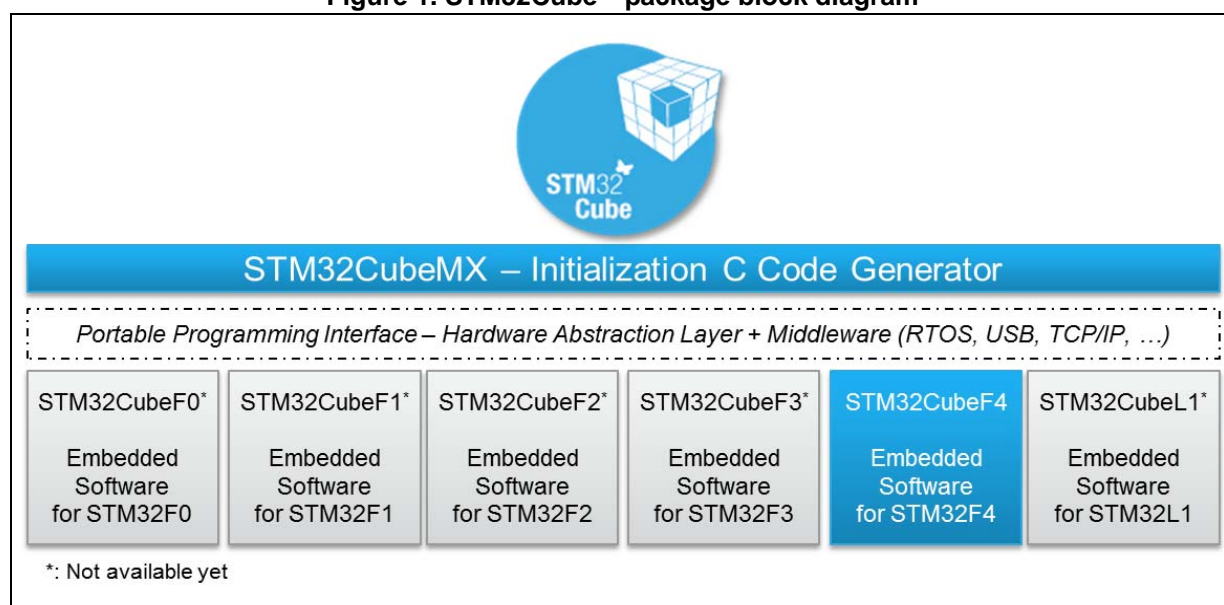
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STM32CubeF4 package

STM32CubeF4 package also contains a set of middleware components with the corresponding examples. They come in very permissive license terms:

- CMSIS-RTOS implementation with FreeRTOS open source solution
- TCP/IP stack based on open source LwIP solution
- FAT File system based on open source FatFs solution supporting NAND Flash memory accesses
- STemWin, a professional graphical stack solution available in binary format and based on our partner solution SEGGER emWin
- Full USB Host and Device stack supporting many classes.

A demonstration implementing all these middleware components is also provided in the STM32CubeF4 package.

STM32CubeF4 is included in the STM32Cube package (see *Figure 1*). Please note that STM32Cube initiative is progressively deployed on all STM32 series.

Figure 1. STM32Cube™ package block diagram

Ordering Information

STM32CubeF4 is available for free download from http://www.st.com.

Revision history

Table 1. Document revision history

Date	Revision	Changes
14-Feb-2014	1	Initial release.

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